

Notice of Meeting and Meeting Agenda Core Area Liquid Waste Management Committee

Wednesday, January 22, 2020

1:30 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC V8W 1R7

B. Desjardins (Chair), L. Helps (Vice-Chair), D. Blackwell, S. Brice, F. Haynes, B. Isitt, J. Loveday, R. Martin, R. Mersereau, K. Murdoch, D. Screech, L. Seaton, N. Taylor, G. Young, C. Plant (Board Chair, ex-officio)

1. Territorial Acknowledgement

2. Approval of Agenda

3. Adoption of Minutes

- 3.1. [20-069](#) Minutes of the October 16, 2019 Core Area Liquid Waste Management Committee

Recommendation: That the minutes of the Core Area Liquid Waste Management Committee meeting of October 16, 2019 be adopted as circulated.

Attachments: [Minutes - October 16, 2019](#)

4. Chair's Remarks

5. Presentations/Delegations

6. Committee Business

- 6.1. [20-064](#) Core Area Liquid Waste Management Committee - Terms of Reference

Recommendation: The Core Area Liquid Waste Management Committee receive the attached 2020 Terms of Reference for information.

Attachments: [Staff Report: Core Area Liquid Waste Management Committee - TOR](#)
[Appendix A: Terms of Reference](#)

- 6.2. [20-021](#) Wastewater Treatment Project Q3 2019 Quarterly Report

Recommendation: That the Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:
That this report be received for information.

Attachments: [Staff Report: WTP Quarterly Report Q3 2019 and Appendices](#)
[Project Board Presentation](#)

- 6.3. [20-022](#) Wastewater Treatment Project October 2019 Monthly Report

Recommendation: The Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:
That this report be received for information.

Attachments: [Staff Report: WTP October 2019 Monthly Report and Appendix](#)

6.4. [20-054](#) Wastewater Treatment Project November 2019 Monthly Report

Recommendation: The Core Area Liquid Waste Management Committee recommend to the Capital Regional District Board:
That this report be received for information.

Attachments: [Staff Report: WTP Monthly Report November 2019](#)

7. Notice(s) of Motion

8. New Business

9. Motion to Close the Meeting

9.1. [20-073](#) Motion to Close the Meeting

Recommendation: That the meeting be closed under Section 21 of FOIPPA in accordance with Section 90(1)(j) of the Community Charter.

10. Adjournment

Next Meetings: March 18, 2020 (Special Meeting), April 22, 2020

To ensure quorum, please advise Sherri Closson (sclosson@crd.bc.ca) if you or your alternate cannot attend.

Meeting Minutes

Core Area Liquid Waste Management Committee

Wednesday, October 16, 2019

1:30 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC V8W 1R7

PRESENT:

Directors: B. Desjardins (Chair), L. Helps (Vice-Chair), L. Szpak (for D. Blackwell), S. Brice, F. Haynes, B. Isitt, J. Loveday, R. Martin, R. Mersereau, K. Murdoch, C. Plant, D. Screech, L. Seaton, N. Taylor, G. Young,

Staff: R. Lapham, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; T. Robbins, General Manager, Integrated Water Services; D. Clancy, Project Director, Core Area Wastewater Treatment Project Board; D. Fairbairn, Vice Chair, Core Area Wastewater Treatment Project Board; E. Scott, Deputy Project Director, S. May, Senior Manager, Facilities Management and Engineering Services, Core Area Wastewater Treatment Project Board; E. Gorman, Deputy Corporate Officer; S. Closson, Committee Clerk (Recorder)

The meeting was called to order at 1:30 pm.

1. Territorial Acknowledgement

Chair Desjardins provided a Territorial Acknowledgement.

2. Approval of Agenda

MOVED by Director Loveday, **SECONDED** by Director Brice,
That the agenda for the October 16, 2019 Core Area Liquid Waste Management
Committee meeting be approved.
CARRIED

3. Adoption of Minutes

- 3.1. [19-850](#) Minutes of the July 17, 2019 Core Area Liquid Waste Management
Committee Meeting

MOVED by Director Brice, **SECONDED** by Director Helps,
That the minutes of the Core Area Liquid Waste Management Committee
meeting of July 17, 2019 be adopted as circulated.
CARRIED

4. Chair's Remarks

Chair Desjardins recognized the Esquimalt First Nation and Beecher Bay
Elections and congratulated them. The Chair also acknowledged with
appreciation the progress of the Wastewater Treatment Project.

5. Presentations/Delegations

There were no presentations or delegations.

6. Committee Business

6.1. [19-826](#) Wastewater Treatment Project Q2 2019 Quarterly Report

D. Fairbairn spoke to the Project Update presentation.
D. Clancy spoke to the progress on the project.

Discussion ensued on the following:

- cost projections report
- laydown site remediation process
- public accessibility detour options in construction zones

**MOVED by Director Helps, SECONDED by Director Screech,
That the Core Area Liquid Waste Management Committee recommend to the
Capital Regional District Board:**

That this report be received for information.

CARRIED

6.2. [19-834](#) Wastewater Treatment Project July 2019 Monthly Report

**MOVED by Director Helps, SECONDED by Director Screech,
That the Core Area Liquid Waste Management Committee recommendation to
the Capital Regional District Board:**

That this report be received for information

CARRIED

6.3. [19-835](#) Wastewater Treatment Project August 2019 Monthly Report

**MOVED by Director Helps, SECONDED by Director Screech,
That the Core Area Liquid Waste Management Committee recommend to the
Capital Regional District Board:**

That this report be received for information.

CARRIED

6.4. [19-809](#) Wastewater Treatment Project Options to Further Mitigate Costs

N. Chan introduced the Wastewater Treatment Project Options to Further Mitigate Costs report.

Discussion ensued on the following:

- debt repayment option, amortization considerations
- land application analysis regarding biosolids
- source control

**MOVED by Director Helps, SECONDED by Director Seaton,
That the Core Area Liquid Waste Management Committee recommend to the
Capital Regional District Board:**

**That the Wastewater Treatment Project Options to Further Mitigate Costs report
be received for information.**

CARRIED

6.5. [19-828](#) Core Area Inflow & Infiltration Program - 2019 Report

S. May spoke to the Core Area Inflow & Infiltration Program 2019 Report.

Discussion ensued on the following:

- bylaw compliance increase
- conveyance and treatment capacity
- impact of climate change on frequency of 5 year storm calculations
- report on basement flooding prevention
- municipal inflow and infiltration targets

**MOVED by Director Seaton, SECONDED by Director Helps,
That the Core Area Liquid Waste Management Committee recommend to the
Capital Regional District Board:**

That the Core Area Inflow & Infiltration Program 2019 Report be approved.

CARRIED

6.6. [19-851](#) Bylaw & Municipal Staff Engagement Update - Verbal Report

T. Robbins spoke to an update on the Bylaw and Municipal Staff Engagement meetings.

7. Notice(s) of Motion

There were no Notice(s) of Motion.

8. New Business

There was no new business.

9. Motion to Close the Meeting

**MOVED by Alternate Director Szpak, SECONDED by Director Murdoch,
That the meeting be closed under Section 90(1),(k), negotiations and related
discussions respecting the proposed provision of a regional service that are at
their preliminary stages and that, in the view of the board, could reasonably be
expected to harm the interests of the regional district if they were held in public.
CARRIED**

10. Adjournment

The Committee rose without report.

**MOVED by Director Plant, SECONDED by Director Seaton,
That the October 16, 2019 Core Area Liquid Waste Management Committee
meeting be adjourned at 3:28 pm.
CARRIED**

Chair

Recorder

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, JANUARY 22, 2020**

SUBJECT Core Area Liquid Waste Management Committee – Terms of Reference

ISSUE SUMMARY

The purpose of this report is to provide the 2020 Terms of Reference for the CRD Board's Standing Committees.

BACKGROUND

Under the *Local Government Act* and the CRD Board Procedures Bylaw, the CRD Board Chair has the authority to establish Standing Committees and appoint members to provide advice and recommendations to the Board. At the December 11, 2019 Board meeting, Chair Plant established the 2020 committee structure and appointments to those committees.

Terms of Reference (TOR) serve to clarify the mandate, responsibilities and procedures of standing committees and provide a point of reference and guidance for the committees and members. This year, the TOR for the following continuing standing committees, where no changes were made from 2019, will be sent to the committees for their information:

- Core Area Liquid Waste Management Committee
- Electoral Areas Committee
- First Nations Relations Committee
- Governance & Finance Committee
- Hospitals & Housing Committee

The only changes made to the continuing standing committees' TOR are to reference 2020, rather than 2019. Any revisions by the committee to its TOR will require ratification by the Board.

For committees where changes to structure were made, the TOR will be received by the standing committee and referred to the Board for approval. They are:

- The Regional Parks Committee and the Environmental Services Committee (previously the Parks and Environment Committee), and
- The Planning, Transportation and Protective Services Committee (previously the Transportation Committee and the Planning and Protective Services Committee).

ALTERNATIVES

Alternative 1

The Committee receives the attached 2020 Terms of Reference for information.

Alternative 2

The Committee recommends to the Capital Regional District Board:
That the Terms of Reference be approved, as amended.

CONCLUSION

Terms of Reference (TOR) serve to clarify the mandate, responsibilities and procedures of governing committees and provide a point of reference and guidance for the committees and their members. The 2020 TOR are provided for the information of continuing standing committees, and for approval of the Board to confirm the mandate of restructured standing committees.

RECOMMENDATION

The Core Area Liquid Waste Management Committee receives the attached 2020 Terms of Reference for information.

Submitted by:	Emilie Gorman, MPA, Manager, Legislative Services & Deputy Corporate Officer
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: 2020 Core Area Liquid Waste Management Committee – Terms of Reference

Terms of Reference



CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE

PREAMBLE

The Capital Regional District (CRD) Core Area Liquid Waste Management Committee (CALWMC) is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding the Core Area Liquid Waste Management Plan and certain aspects of the Core Area Wastewater Treatment Project (CAWTP).

The Committee's official name is to be:

Core Area Liquid Waste Management Committee

1.0 PURPOSE

The mandate of the committee is to oversee and make recommendations to the Board regarding the:

- a) Administration and regulatory reporting for the Core Area Liquid Waste Management Plan
- b) Core area trunk sewers and sewage disposal systems
- c) Receipt of monthly updates from the Project Board and to monitor ongoing budget and risks.

The administration of the CAWTP has been delegated to the Core Area Wastewater Treatment Project Board (the "Project Board").

The committee will act as the steering committee of the Technical and Community Advisory Committee, as outlined in Appendix A.

2.0 ESTABLISHMENT AND AUTHORITY

- a) The committee will make recommendations to the Board for consideration
- b) The Board Chair will appoint the Committee Chair, Vice Chair and committee members

3.0 COMPOSITION

The membership is comprised of all directors on the CRD Board from the following municipalities that are participants in the Core Area Liquid Waste Management Plan:

- Colwood
- Esquimalt
- Langford
- Oak Bay

- Saanich
- Victoria
- View Royal
- An elected representative and alternate from each of the Songhees Nation and Esquimalt Nation Councils (Board Procedures Bylaw No. 3828)

All Board members are permitted to participate in standing committee meetings, but not vote, where an item of local significance is on the agenda (Board resolution Nov. 12, 2014).

4.0 PROCEDURES

- a) The committee shall meet quarterly and have special meetings as required at the call of the Committee Chair
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any committee member may make a request to the Chair to place a matter on the agenda
- c) With the approval of the Committee Chair and Board Chair, committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration
- d) A quorum is a majority of the committee membership and is required to conduct committee business

5.0 RESOURCES AND SUPPORT

- a) The General Manager Integrated Water Services and General Manager Parks & Environmental Services will act as a liaison to the committee with support from other departments, as required
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department

Approved by CRD Board on _____, 2020

APPENDIX A

STEERING THE TECHNICAL AND COMMUNITY ADVISORY COMMITTEE CORE AREA AND WEST SHORE SEWAGE TREATMENT

In accordance with the [Terms of Reference of the Technical and Community Advisory Committee Core Area and West Shore Sewage Treatment](#) (TCAC) approved by the Capital Regional District Board (CRD), August 14, 2013, the Core Area Liquid Waste Management Committee (CALWMC) will steer the TCAC as follows:

- Make recommendations to the CRD Board to appoint TCAC members
- Make requests to TCAC for appropriate technical and community consultation advice and input in order to facilitate informed decision-making in a variety of CAWTP matters that have not been delegated to the CAWT Project Board. :
- Dissolve the TCAC at the end of the planning stage of the Core Area and West Shore sewage treatment project or at a time determined by the CALWMC



**REPORT TO CORE AREA WASTEWATER TREATMENT PROJECT BOARD
MEETING OF THURSDAY, OCTOBER 31, 2019**

SUBJECT Wastewater Treatment Project Q3 2019 Quarterly Report

ISSUE

To provide the Core Area Wastewater Treatment Project Board with the Wastewater Treatment Project Q3 2019 Quarterly 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 Quarterly report for the period of July- September 2019 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 Q3 2019 Quarterly Report, be received for information and forwarded to the Core Area Liquid Waste Management Committee and CRD Board for information.



Elizabeth Scott, Deputy Project Director
Wastewater Treatment Project



Dave Clancy, Project Director
Wastewater Treatment Project
Concurrence

Attachments: 1

Appendix A: Wastewater Treatment Project Q3 2019 Quarterly Report

ES:er



Wastewater Treatment Project

Treated for a cleaner future

CRD Wastewater Treatment Project

Quarterly Report

Reporting Period: July-September 2019

TABLE OF CONTENTS

1	<i>Executive Summary.....</i>	<i>1</i>
1.1	Introduction	1
1.2	Dashboard	2
2	<i>Wastewater Treatment Project Progress</i>	<i>4</i>
2.1	Safety	4
2.2	Environment and Regulatory Management.....	11
2.2.1	Environment	11
2.2.2	Regulatory Management	12
2.3	First Nations	13
2.4	Stakeholder Engagement	14
2.5	Resolutions from Other Governments	17
2.6	Schedule	17
2.6.1	30 day look ahead	19
2.6.2	60 day look ahead	22
2.7	Cost Management and Forecast	24
2.7.1	Commitments	25
2.7.2	Expenses and Invoicing	25
2.7.3	Contingency and Program Reserves	25
2.7.4	Project Funding.....	26
2.8	Key Risks and issues	27
2.9	Status (Engineering, Procurement and Construction)	32
2.9.1	Wastewater Treatment Plant (McLoughlin Point WWTP)	32
2.9.2	Residuals Treatment Facility	36
2.9.3	Conveyance System	40
	<i>Appendix A- Construction Notice – Residual Solids Conveyance Line: Esquimalt Update (July 4, 2019) 56</i>	
	<i>Appendix B- Construction Notice - Clover Forcemain: Dallas Road Temporary Closure (July 9, 2019) ...57</i>	
	<i>Appendix C- Construction Notice – Trent Forcemain: Utility Locating (July 31, 2019).....58</i>	
	<i>Appendix D- Information Sheet: Esquimalt Summer Truck Route</i>	<i>59</i>
	<i>Appendix E- Project Update #7</i>	<i>60</i>
	<i>Appendix F- Clover Forcemain Progress Map (July 26, 2019)</i>	<i>61</i>
	<i>Appendix G- Residual Solids Conveyance Line Progress Map (July 26, 2019)</i>	<i>62</i>
	<i>Appendix H- Construction Notice- Residual Solids Conveyance Line: Interurban Road Pump Station (Aug 9, 2019)</i>	<i>63</i>
	<i>Appendix I- Construction Notice- Macaulay Forcemain Installation: Bewdley Avenue Update (August 12, 2019)</i>	<i>64</i>
	<i>Appendix J- Construction Notice- Residual Solids Conveyance Line: Marigold Road (August 16, 2019).65</i>	

<i>Appendix K- Clover Forcemain Progress Map (August 14, 2019).....</i>	<i>66</i>
<i>Appendix L- Residual Solids Conveyance Line Progress Map (August 23, 2019).....</i>	<i>67</i>
<i>Appendix M- Clover Point Pump Station: Temporary Closures (September 6, 2019)</i>	<i>68</i>
<i>Appendix N- Residual Solids Conveyance Line: Temporary Overnight Work (September 9, 2019)</i>	<i>69</i>
<i>Appendix O- Dallas Road Update (September 5, 2019)</i>	<i>70</i>
<i>Appendix P- Dallas Road Amenities Map</i>	<i>71</i>
<i>Appendix Q- Residual Solids Conveyance Line Progress Map (September 27, 2019)</i>	<i>72</i>
<i>Appendix R- Monthly Cost Report (September)</i>	<i>73</i>
<i>Appendix S- Quarterly Cost Report.....</i>	<i>74</i>

1 Executive Summary

1.1 Introduction

This Quarterly report covers the reporting period of July through September 2019 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 engineering and construction at McLoughlin Point, including: installation of electrical panels and cabling in BAF gallery; Biological Aerated Filters (BAF) topping pours; forcemain pipe in Patricia Way; completion of placement of the marine outfall and commencement of the anchor protection and rock reefs; electrical HVAC and piping installation in the Process building and the Operations and Maintenance building; and completion of the Biological Aerated Filter (BAF) influent and effluent channels; permanent placement of generators.

The RTF Project Component is continuing with Hartland Resource Management Group (“HRMG” as the Design-Build-Finance-Operate Maintain contractor for the RTF) completing the Issued for Construction (IFC) drawings; meeting with the independent certifier; and progressing construction activities including: completed construction of the Digested Solids Storage Tank; continued equipment installation, erection of structural and exterior steel at the Residuals Handling Building; slabs poured and curing for the water storage tank, water pump house, and foundation work for the Residuals Effluent Storage Tank and Equalization Building; and commenced tank erection Residuals Solids Tanks 1 & 2.

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 design and construction activities over the reporting period including: continued to assess outstanding design comments before submitting the final Issued for Construction (IFC) package; shop drawing reviews in advance of equipment deliveries; process piping and electrical installations; and installation of the roofing membrane; sanitary pump installation in the lower pump room; large diameter process piping installation from the new to existing pump rooms; and completion of public washroom underground utilities and foundation.
- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed design and construction activities over the

reporting period including: forming and pouring of exterior walls and interior slabs; vortex slab and walls poured; generator suspended slab formwork completed; all pump pedestals have been formed and poured; interior and exterior concrete walls continued with the final exterior wall completed installation of approximately 470m during the period for a total of 650m of forcemain installed to September 30, 2019.

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 completion of installation of the forcemain; completion of watermain connections; and ongoing road restoration, landscaping, cycle track base and paving.
- 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 the Residual Solids Pipes) continued construction activities including installation of approximately 5.2 km of pipes.
 - RSCL 200 Residual Solids Pump Stations: Knappett Projects Inc. (“Knappett” as the Construction Contractor for the Residual Solids Pump Stations) continued construction activities including installation of approximately 2.7km of pipes and progressed construction activities at all three pump stations
- Arbutus Attenuation Tank (“AAT”): NAC Constructors Ltd. (as the Construction Contractor for the Arbutus Attenuation Tank) has continued construction activities including: utility locates and confirmation of existing site services, dewatering wells drilled and testing, commenced and continued drilling, reinforcing and concreting secant piles, coordination and planning for decommissioning of existing overflow system located within the tank footprint; and design and procurement of temporary bypass and overflow routing system.
- Trent Forcemain: Stantec (as the design consultant for the Trent Forcemain) progressed the design by implementing CRD and City of Victoria comments; developing the Issued for Tender documents; issuing the designs for tender and reviewing and responding to tender inquiries and issuing addenda.





























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 KPI’s over the reporting period. The safety KPI for the Project and the conveyance system remains yellow. Over the reporting period 1 reportable safety incident occurred and the total recordable incident frequency decreased from 1.5 at the end of the last reporting period (June 2019) to 1.3. 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. 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 Projects budget by \$10M to \$775 M.

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*.					One recordable incident 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.					Four environmental incidents occurred over the period: three were low-volume fluid leaks, (fluid was contained and none entered the environment). The fourth was associated with sediment releases during installation of the RSCL under the Colquitz Creek. The releases led to short-term increases in turbidity downstream of the work site, however water quality remained within BC Water Quality Guidelines.
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. The CRD Board have approved an increase in the Project's budget by \$10M, to \$775M.
<small>* 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</small>						
Status	Description					
	KPI unlikely to be met					
	KPI at risk unless correction action is taken					
	KPI at risk but corrective action has been identified/is being implemented					
	Good progress against KPI					

2 Wastewater Treatment Project Progress

2.1 Safety

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

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

Over the reporting period (July to September) 53 safety incidents occurred in total: nineteen in July, eighteen in August and sixteen in September, comprising seven near-miss, one high potential near miss, five first-aid, and thirty-nine report-only, one of which was recordable. The incidents are summarized in Table 2.

Table 2: Safety Incidents over the Reporting Period

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
July 2, 2019	Clover Point PS	First Aid	Worker using a hand blower with a damaged safety guard and sustained hand injury	Worker's finger was bandaged and returned to work	Hand blower was immediately removed from service. Tool-box meeting to discuss proper inspection of tools and equipment prior to use
July 3, 2019	McLoughlin Pt WWTP	Report Only	Operator jarred their back while operating a boom forklift on uneven ground	Report-only as no First Aid treatment was provided.	Tool-box discussion: importance of awareness of surroundings when moving equipment on uneven ground
July 8, 2019	McLoughlin Pt WWTP	First Aid	Worker pinched finger between impact hammer handle and scissor lift rail	Workers finger was bandaged and returned to work.	Tool-box talk on safe work practice when using power tools and attention to task at hand
July 8, 2019	McLoughlin Pt WWTP	Report Only	Worker stepped on a boat and felt aggravation in their ankle.	Ankle was assessed, iced and worker returned to work	Worker reminded to be aware when accessing or egressing a boat
July 9, 2019	Clover Point PS	Medical Aid Recordable	A 4th year apprentice was drilling through wood when the drill bit caught and swung the tool bending two fingers backwards	Worker required Medical Aid. An X-Ray showed a break of the ring finger. Surgery was required to stabilize the bone. Worker returned on a Modified Work Program.	CRD Safety Notice issued to all Prime Contractor regarding the incident and an increase in hand injuries on project sites. Tool-box talk re: proper control and use of power tools. Worker mentoring was also performed
July 15, 2019	RSCL200	Near Miss	Excavator operator accidentally knocked a rock which entered the trench striking formwork approximately 6 feet away from one of the workers.	Excavator operator was reminded not to work while any workers are beneath them	Tool-box with crew re: working in close proximity to heavy equipment.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
July 15, 2019	RSCL100	Report Only	An operator was observed placing gravel into a trench contacting a worker.	There were no injuries as a result of this contact.	Excavator operator was reminded not to work while any workers are beneath them Employees to follow the instructions of the toolbox talk of no workers working below excavator
July 16, 2019	RSCL100	Report Only	A Traffic Control Person (TCP) was observed riding inside the cab of a backhoe seated next to the driver with the door closed.	Passengers are not permitted to ride in heavy equipment as per WorkSafeBC Regulations.	Tool-box talk to bring awareness to crew in regards to transportation of passengers
July 17, 2019	RSCL 200	Report Only	A member of the public disobeyed Traffic Control Person and attempted to enter a closed lane in oncoming traffic at excessive speed.	TCP along with Sub Contractor deescalated situation by talking to the member of the public	Tool-Box talk reviewed protocol in dealing with aggressive/dangerous members of the public.
July 19, 2019	RTF	Report Only	Telehandler struck a pipe stub, high visibility marking had worn off making pipe difficult to see.	Pipe stub was repaired Pipe was marked for better visibility	Tool-box talk in regards to using spotter when backing equipment and the proper marking of utilities
July 22, 2019	McLoughlin Pt WWTP	Report Only	Worker sustained a hand injury while trying to remove a wooden brace from a concrete slab.	Injured finger was bandaged and they returned to work.	Tool-box talk on correct hand positioning while using tools
July 23, 2019	AAT	Report Only	Excavator was clearing and grubbing the site and inadvertently struck an existing asbestos manhole.	Manhole had been flagged but operator missed the marking.	Scope of work reviewed with Sub-Contractor to ensure warning signs and directions are followed Area was secured with asbestos warning tape Asbestos material was bagged for disposal Material taken to approved disposal facility
July 24, 2019	RSCL100	Report Only	Worker in a trench on a hot day felt dizzy and sick while climbing out of the trench at the end of the day	First Aid Attendant provided icepacks and water to cool worker and sat worker in the shade. Possible Heat Stress	Tool-box talk with crew re: working in the heat and the signs and symptoms of heat stress
July 24, 2019	McLoughlin Pt WWTP	Report Only	Worker was leaving lunch trailer, top step detached from fasteners when worker stepped on it	Worker slipped, but did not fall	Stair was fixed immediately, all other stairs on staircase checked and refastened Inspection of all other stairs and handrail on site was performed
July 25, 2019	RSCL100	Report Only	Operator driving a water truck struck a hydro pole while reversing	Hydro lines contacted tree branches, creating a fire hazard. Fire Department and Hydro were called as a precaution.	Tool-box talk held and emphasis placed on using a spotter when backing

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
July 25, 2019	RSCL100	First Aid	A Traffic Control Person tripped over asphalt lip of a trench cut and fell forward	Worker felt pain in ribs and knee was bruised; injuries were assessed by the First Aid Attendant, no first aid was rendered. Worker went to Medical Aid for a further assessment but no further treatment was required	Tool-box talk held to remind workers to access the work area and always be mindful of uneven ground conditions.
July 25, 2019	RSCL100	Report Only	Resident reversed their car into a stationary excavator.	There was minor damage to the car but no injuries.	Tool-box talk held to remind the crew to park in an area as visible as possible.
July 25, 2019	McLoughlin Pt WWTP	Report Only	A tug fouled on a log while avoiding a crab trap. This resulted in damage to the tug's stabilizing system.	The towline placed extra stress on a control valve causing an air leak	Air valve was replaced Extra caution to be used on the water when towing loads for hidden obstacles that may be encountered
July 29, 2019	RSCL100	Report Only	Water service on Grange Road was struck by an excavator causing a water leak.	Saanich water services called to repair	Locates were in place, water service was not marked
August 2, 2019	McLoughlin Pt WWTP	Near Miss	Kevlar sling failed during one of the test lifts conducted prior to lifting/lowering pipe section into the trench with an excavator on Peter Street.	The sling was new and within the load rating for the lift. Rigging re-configured to remove interaction between Kevlar slings and any bucket edges.	Additional test lifts performed prior to final lift/lower. Review of proper rigging with Kevlar slings was undertaken with the crew.
August 6, 2019	McLoughlin Pt WWTP	Near Miss	Worker dropped nail puller from pouch when coming down a ladder.	The tool dropped approximately 25 feet into lower BAF gallery and approximately 4 feet from the worker below.	Tool-box discussion re: the importance of the proper securing of tools when carrying them up/down ladders.
August 11, 2019	McLoughlin Pt WWTP	Report Only	Worker felt pain in left arm but did not report pain until the following day.	No First Aid treatment rendered.	Tool-box talk on reporting injuries the day of incident.
August 12, 2019	McLoughlin Pt WWTP	First Aid	Worker received a hand injury while cutting a piece of Deck	Leather gloves were cut which caused a small laceration to right index finger. First Aid was rendered and bandage was applied.	Tool-box talk to discuss assessing hazards in close proximity when working around sharp edges.
August 13, 2019	McLoughlin Pt WWTP	Report Only	Worker struck hand while installing rebar.	Hand became swollen. Worker was wearing gloves at time of incident.	Workers reminded to be aware of where their hands are in proximity to fixed objects or pinch points.
August 13, 2019	RSCL 200	Report Only	An excavator came into contact with a communications line.	There was no observable damage to the lines and no repair was required.	Tool-box talk with crew in regards to working in close proximity to Utility lines and the need to have a spotter.
August 14, 2019	RSCL 100	Report Only	Crew hit a communication line that was not shown on the utility locates plan.	Communications line and conduit repaired by Utility Company.	Communication line location was added to the utility locates plan.
August 14, 2019	Macaulay Point Pump Station	Report Only	A laborer from a temporary labor company became aggressive with the site superintendent.	The worker was removed from site and proceeded to damage the sub-contractors property. Police were called to prevent any further incident or property damage by individual.	Labor company was notified and worker permanently removed from the project site and from their employment.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
August 15, 2019	McLoughlin Pt WWTP	Report Only	A subcontracted worker fell forward approximately 3 feet off of a small concrete wall into a handrail.	Worker struck the back of their head on the concrete wall edge resulting in laceration that needed medical attention.	Worker was requested to perform a Drug and Alcohol test. No results were provided by the sub-contractor. The worker did not return to the McLoughlin site. Tool-box talk to bring awareness to the incident and to ensure workers remain aware of their surroundings was held.
August 19, 2019	RSCL100	Report Only	While installing the RSCL two workers were exposed to a small amount of material which sloughed into the excavation which was less than one meter deep.	No one was injured and the workers were able to safely remove the material. A Geotechnical report had been completed prior to work commencing. There was no requirement for a shoring cage to be used.	Sloughed material was removed from excavation A secondary Geotechnical Assessment performed and work was approved to continue.
August 19, 2019	McLoughlin Pt WWTP	Report Only	Top of excavator boom made contact with overhead cable line while moving.	The boom caught the low hanging line. Line was immediately repaired.	Tool-box talk discussing the need for spotters when moving equipment.
August 21, 2019	RSCL200	Report Only	An equipment operator was stung by a wasp and had an allergic reaction to the sting.	Ambulance was called to check on the operators well being.	Tool-box talk to discuss what to do in the event of an allergic reaction.
August 21, 2019	McLoughlin Pt WWTP	Report Only	Worker dropped a bolt from approximately 20 feet up a wall panel to a catwalk below.	The bolt fell to a lower elevation making contact with another worker's arm on the way down. No injuries were sustained.	Verbal warning issued to worker for not controlling overhead hazard Control zone established on catwalk in the event anything was to fall Tool-Box talk to discuss the hazards of objects falling from overhead.
August 21, 2019	RTF	Report Only	A waterline was being filled to prepare for a line test when water began flowing out of the end cap on a valve.	Cap was re-secured correctly to prevent a release of water during test.	Tool-Box talk outlining importance of following test procedures was held.
August 22, 2019	RSCL100	Report Only	Gas line was struck during excavating.	Inaccurate Utility Locates Plan had been provided to the Contractor by the locate company. Fire Department and Police attended to secure the area. Fortis immediately called to fix damaged gas line	Fortis performed a secondary Utility Locates for Prime Contractor to ensure the correct location of other lines had been established
August 26, 2019	RSCL 200	Near Miss	Traffic Control Person did not have proper control of the traffic in the area of the worksite. A near miss occurred when a vehicle travelling east on Willis Point Road changed lanes to avoid an excavation and moved into the oncoming traffic lane.	The Traffic Control Person was wearing a hoodie that blocked their peripheral vision, and was holding their sign incorrectly confusing traffic.	The incident was reported to Prime Contractor Situation was discussed with the Traffic Control Supervisor and the employee. A senior Traffic Control Person was assigned to manage the area.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
August 26, 2019	McLoughlin Pt WWTP	Report Only	Worker felt pain in knee after climbing formwork and reported to First Aid.	Knee was assessed with no treatment provided, the worker returned to work.	Tool-box talk with crew in regards to micro-stretching before climbing or performing awkward tasks
August 27, 2019	RSCL 100	Report Only	Backhoe reversed onto uneven ground near a trench. The right rear wheel slid into the trench causing the backhoe to tip.	Worker was wearing their seatbelt and was able to exit the cab. Worker received a medical assessment, no further treatment was required.	Backing procedure updated to emphasize the hazards of operating equipment near an open excavation. Tool-box talk with crews on the importance of wearing seatbelts.
Sept 3, 2019	McLoughlin Pt WWTP	Report Only	Worker stripping false work used a hammer to pry boards.	The hammer slipped and the handle made contact with workers top lip. No medical aid was required.	Tool-box talk held with crew to review the safe use of hand tools.
Sept 4, 2019	McLoughlin Pt WWTP	Report Only	While handling structural steel for pipe supports a workers finger was pinched.	No injury to the workers finger occurred. No first aid was required.	Tool-box talk on body part awareness and to "stay out of the bite".
Sept 10, 2019	McLoughlin Pt WWTP	Report Only	Worker hit their head on a concrete beam.	Worker was wearing their hard hat, no injuries sustained.	Tool-box talk to discuss overhead hazards and to be aware of any new conditions in work areas.
Sept 11, 2019	McLoughlin Pt WWTP	Report Only	Small piece of rebar fell from an elevated striking a workers hard hat.	The worker was not injured however work was stopped and a larger control zone was established to prevent reoccurrence.	Tool-box talk in regards to overhead work and workers below with proper control zones and communication amongst crews.
Sept 13, 2019	RTF	Near Miss	While backfilling a trench the front wheel of a backhoe went over the edge with the machine coming to rest on the under-carriage.	The Supervisor assumed control of the backhoe and backed it out onto level ground. The operator had received mobile equipment training but was new to the task.	Further training was provided to operator and a competency test conducted.
Sept 16, 2019	McLoughlin Pt WWTP	Report Only	Scissor lift handrail made contact with a permanent ladder.	Damage to the ladder occurred. No workers were in or around the ladder.	Worker completed a Drug and Alcohol Test Tool-box talk to ensure that any movement of equipment in small spaces has a spotter.
Sept 18, 2019	McLoughlin Pt WWTP	Report Only	Worker on rebar wall slipped and fell approximately 6 inches	Worker was wearing a harness and tied off correctly and was not injured. Worker reported incident as required	Fall protection equipment was inspected. Tool-box talk to discuss the benefit of the proper use of fall protection.
Sept 20, 2019	McLoughlin Pt WWTP	Report Only	Scaffold clamp fell while worker was lowering materials through an opening.	No workers were injured but there were workers standing in the area.	Tool-box talk about proper method of raising/lowering equipment/materials.
Sept 20, 2019	Macaulay Point PS	Report Only	A City of Victoria watermain was damaged when blasting.	City was called and line was repaired.	Incident reported since watermain repair required.
Sept 20, 2019	RTF	Near Miss	A section of pipe while being lifted by a chain hoist had an uncontrolled drop due to poor rigging and control of the hoist.	A worker immediately grabbed the chain preventing the pipe from causing any damage. The supervisor stopped work and immediately removed the chain hoist from service.	Manufacturer of the chain hoist undertook an inspection of the equipment and a review of the rigging arrangements. A tool box talk to review the recommendations from the manufacturer was held.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
Sept 21, 2019	RTF	Near Miss	A conveyer being installed on the fourth floor of the dryer with a chain hoist had an uncontrolled drop.	The lift was stopped and the chain hoist was removed from service.	Manufacturer of the chain hoist undertook an inspection of all the chain hoists on the site prior to any of them being placed back in service.
Sept 24, 2019	McLoughlin Pt WWTP	Report Only	A vehicle was parked adjacent to the edge of a ditch.	The edge of the ditch sluffed causing the vehicles front to settle.	Truck was pulled out of soft spot with a Tow Truck Cones were placed to delineate edge of ditch.
Sept 24, 2019	RSCL 200	Report Only	Loss of communication between two traffic control operators caused traffic to be released into the work zone bypass while it was occupied by contractor personnel/equipment.	The lead driver came to a stop once they realized they couldn't proceed. TCP personnel cleared the zone once it was safe to do so.	Tool-box talk on ensuring radio batteries are charged before starting shift and the use of non-audible signaling was held.
Sept 27, 2019	RTF	Report Only	While installing a column on the dryer building one of the slings was damaged when it came in contact with a sharp edge.	The load was secured and did not move so no injuries or damage occurred	All columns will be checked prior to lifting for any sharp areas to avoid damage to rigging.
Sept 30, 2019	Clover Forcemain	First Aid	A traffic control person slipped on a curb landing on their side.	Worker was assessed by First Aid, no treatment required and returned to their regular duties.	Tool-box talk to discuss awareness of their work area and tripping.
Sept 30, 2019	McLoughlin Pt WWTP	High Potential For Harm	While working at the north end of the BAF an excavator contacted the 600v/200amp cable that provides power to the tower crane, damaging the cable and causing the breaker to trip.	No workers were injured in this incident. Job area immediately shutdown Electrical source inspected. WorkSafeBC notified of the utility strike Workers sent for Drug and Alcohol Testing.	Root Cause analysis undertaken. Prior to work recommencing a tool-box talk was completed reviewing the Excavation Permit requirements and hand digging distance required near electrical utilities.

Key safety activities conducted during July included:

- CRD prime contractor safety quality assurance audit with HRMG at the Residuals Treatment Facility;
- safety quality assurance audit with Windley on the Clover Forcemain;
- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, Don Mann, HRP, Knappett and NAC;
- weekly project update meetings with prime contractor HRMG;
- incident investigations review;
- sent out a "Hand Safety" and a "Safety Recall" notice;
- reviewed site specific safety plans and high risk tasks; and
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites.

Key safety activities conducted during August included:

- closed out quality assurance audit with Windley on the Clover Forcemain
- hosted CRD WWTP Prime Contractors Safety Meeting
- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, Don Mann, HRP and Knappett and NAC
- weekly project update meetings with prime contractors: HRMG;
- incident investigations review;

- sent out a “Safety Recall” Notice;
- reviewed site specific safety plans and high risk tasks; and
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites.

Key safety activities conducted during September included:

- closed out quality assurance audit with HRMG on the Residuals Treatment Facility
- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, Don Mann, HRP and Knappett and NAC;
- weekly project update meetings with prime contractors: HRMG;
- incident investigations review;
- attend CRD corporate occupational health and safety coordination committee meeting;
- sent out a “Personal Protective Equipment Non-Compliance” Notice to all Prime Contractors
- reviewed site specific safety plans and high risk tasks;
- daily site safety audits during work at Colquitz; and
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites.

Table 3: WTP Safety Information

	Reporting Period (July-September 2019)	Project Totals
Person Hours		
PMO	10 970	117 354
Project Contractor	279 259	1 070 069
Total Person Hours	290 229	1 187 423
Employees		
PMO	32	
Project Contractors (& Project Consultants) working on Project Sites	529	
Total Number of Employees	561	
Incidents		
Near Miss Reports	7	33
High Potential Near Miss Reports	1	5
Report Only	39	95
First Aid	5	31
Medical Aid	1	3
Medical Aid (Modified Duty)	0	2
Lost Time	0	3
Total Recordable Incidents	1	8
		Project Frequency (from January 1, 2017)
First Aid Frequency		5.2
Medical Aid Frequency		0.8
Lost time Frequency		0.5
Total Recordable Incident Rate		1.3

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 July included:

- McElhanney Consulting Services (as the qualified environmental professional for Don Mann, the Construction Contractor for Residual Solids Pipes) completed reporting on potentially contaminated soils along the RSCL alignment; and
- Lorax Environmental Services (the CRD's dispersion modelling consultant) completed modelling of the predicted effluent plumes from the outfalls at McLoughlin, Clover and Macaulay points. The modelling built on previous work and is being used by HRP (the Design-Build Contractor for the McLoughlin Point WWTP) and Stantec in the Outfall Environmental Impact Study and Overflow Environmental Impact Study that will form the bulk of the MWR Registration.

Key environmental management activities completed in August included:

- Stantec completed an Overflow Environmental Impact Study (EIS) for submission as part of the Project's application for registration under the Municipal Wastewater Regulation. The Overflow EIS evaluates the environmental impact of overflows from the CRD's conveyance system following completion of the WTP. Through the construction and operation of the Project components the CRD will reduce the number of overflow locations and the frequency of overflow events. When overflows do occur they are not expected to result in significant effects; and
- McElhanney Consulting Services (as the qualified environmental professional for Knappett, the Construction Contractor for Residual Solids Pump Stations) completed fish salvage from the Colquitz Creek prior to construction of the crossing.

Key environmental management activity completed in September included:

- HRP (the Design-Build Contractor for the McLoughlin Point WWTP) completed an Outfall EIS evaluating the environmental effects of discharges from the McLoughlin Point WWTP outfall. The Outfall EIS is part of the Project's application for registration under the Municipal Wastewater Regulation, and evaluates the environmental impact of effluent discharges from the WWTP outfall during operations. As expected, the Outfall EIS shows a significant improvement in the receiving environment from current practice.
- Review of new work plan for RSCL crossings of Colquitz Creek.

Over the reporting period there were 4 environmental incidents.

- On July 17, Don Mann (as the Construction Contractor for the Residual Solids Pipes) had an unsecured jerry can of diesel fuel tip over in the back of a pick-up truck, with some of the fuel leaking out the tail gate. The volume released was less than 5 litres, and was therefore not reportable to authorities. The spill was contained to the gravel surface of Interurban Trail, and spill pads were used to absorb the fuel. The spill pads

were disposed of at an appropriate facility. No fuel entered the environment.

- Also on July 17, Windley Contracting (the Construction Contractor for the Clover Forcemain) had hydraulic fluid leak from a dump truck. The volume released was approximately 10 litres, and was therefore not reportable to authorities. The hydraulic fluid was contained to the gravel on the cycle track and was immediately contained and removed from site for disposal at an approved facility. No hydraulic fluid entered the sewer system or environment.
- On July 23, Don Mann had a hydraulic leak from an excavator. The volume released was less than 5 litres, and was therefore not reportable to authorities. The spill was contained to the gravel surface of Interurban Trail, and spill pads and were used to absorb the hydraulic fluid. The spill pads were disposed of at an appropriate facility. No hydraulic fluid entered the environment.
- In August Knappett (the Construction Contractor for Residual Solids Pump Stations), was preparing to install the RSCL under the Colquitz Creek and experienced challenges with dewatering and isolation of the work area, leading to sediment releases that resulted in short-term increases in turbidity. The sediment releases were reported to federal and provincial authorities and instream work was temporarily-suspended while the construction plan was revised. The water quality remained within BC Water Quality Guidelines, and due to the short duration of the turbidity increases, it is unlikely that there were any adverse effects on fish or fish habitat. In September once the new plan was implemented, work resumed and a different isolation methodology was employed, allowing the RSCL to be installed successfully. Prior to placement of spawning gravel and completion of backfilling, a large rain event resulted in the isolated work area being inundated. In response, Knappett removed the isolation dams, as they were no longer required to finish the work. The inundation and dam removal also led to sediment releases that created short-term turbidity increases, but again, water quality remained within BC Water Quality Guidelines, and due to the short duration of the turbidity increases, it is unlikely that there were any adverse effects on fish or fish habitat. The in-stream work is now complete, and restoration and stream enhancement have taken place. This included placement of spawning gravel, removal of invasive plant species and planting of native riparian vegetation.

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 July included:

- McElhanney Consulting Services (as the qualified environmental professional for Knappett, the Construction Contractor for Residual Solids Pump Stations) applied for fish salvage permits to allow for the salvage of fish from the Colquitz Creek prior to construction of the crossing.

Key permitting activities for August included:

- Kenaidan (the Design-Build Contractor of the Macaulay pump station) submitted an Environmental Effects Determination (EED) Amendment to the Department of National

Defence for tree removals and construction of a temporary road to facilitate Macaulay forcemain construction. The EED Amendment demonstrated that following application of mitigation measures, the proposed work would not have significant environmental impacts).

Key permitting activities for September included:

- The CRD submitted the MWR Registration application to the BC Ministry of Environment and Climate Change Strategy (ENV). The MWR Registration will allow the CRD to discharge treated effluent from the new McLoughlin Point WWTP to the waters of the Strait of Juan de Fuca.

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. Updates made to the table since the Q2 2019 Quarterly Report include the submission of the Municipal Wastewater Regulation (MWR) registration that was submitted in September 2019.

Table 4- Key Permits Status

<i>Permit/Licence</i>	<i>Anticipated Date</i>	<i>Status</i>	<i>Party Responsible for Obtaining Perming</i>
<i>McLoughlin Point WWTP</i>			
Municipal Wastewater Regulation ("MWR") Registration	Q1 2020	Submitted September 2019	CRD
<i>McLoughlin Point Harbour Crossing</i>			
Transport Canada Lease	Following completion of construction	On Track	HRP
<i>McLoughlin Point Outfall</i>			
Transport Canada Lease	Following completion of construction	On Track	HRP
<i>Residuals Treatment Facility</i>			
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, Macaulay Point and McLoughlin Point.

Millennia Research (as the Project's archaeological advisor) continued archaeological monitoring of excavations along the Clover forcemain route and RSCL route with members of local First Nations.

In June the CRD shared a Technical Assessment Report that was prepared by Hartland Resource Management Group (the Design-Build-Finance-Operate-Maintain Contractor for the RTF) with each of the Esquimalt, Malahat, Pauquachin, Songhees, Tsartlip, Tseycum and Tsawout Nations, and offered to meet to review: the report findings, any other aspects of the construction and operation of the RTF, or the plan for the beneficial use of the biosolids that will be produced. In July the WSÁNEĆ Leadership Council accepted the CRD's offer and asked that the CRD present to the WSÁNEĆ Technical Advisory Committee, and a meeting has been scheduled for October.

Additionally, in July, the WSÁNEĆ Leadership Council requested a meeting with the CRD to discuss cultural monitoring during construction of the RSCL, and on August 13th the Tsartlip Nation demonstrated at the Hartland Landfill to highlight WSÁNEĆ Nations concerns regarding cultural monitoring during construction of the RSCL. A meeting with the WSÁNEĆ Leadership Council to discuss cultural monitoring during construction of the RSCL took place on September 30th.

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.

July Overview

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

- Residual Solids Conveyance Line: Esquimalt Update (July 4, 2019) (Appendix A);
- Clover Forcemain: Dallas Road Temporary Closure (July 9, 2019) (Appendix B); and
- Trent Forcemain: Utility Locating (July 31, 2019) (Appendix C).

The Project Team hand delivered these construction notices in the community: Residual Solids Conveyance Line (250 residences in Esquimalt); Clover Forcemain (172 residences and multiple apartment buildings in James Bay); and Trent Forcemain (168 residences and businesses in the Fairfield community). A letter regarding parking in James Bay was also delivered to 126 local residents in advance of construction work in their neighbourhood.

In addition, one information sheet was posted to the Project's website:

- Esquimalt Summer Truck Route (Appendix D)

As well, Project Update #7 was distributed (Appendix E) in the month of July. This update summarised Project progress and included a description of public amenities to be completed along Dallas Road. The update was posted to the Project website, CRD Twitter account, and distributed by email to more than 730 residents and stakeholders who have signed up to receive Project updates.

Over the month of July, the Project website, wastewaterproject.ca, was updated with information about the Project. Three construction notices and updates, one information sheet and Project Update #7 were posted. The photo gallery section was updated with additional photos. Maps showing the progress of construction along the Clover Forcemain (Appendix F) and the Residual Solids Conveyance Line (Appendix G) were updated regularly.

The CRD's Twitter and Facebook accounts were used to provide Project updates on construction activities.

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

- City of Victoria Technical Working Group;
- District of Saanich Staff;
- District of Saanich Technical Working Group;
- Greater Victoria Harbour Authority;
- James Bay Neighbourhood Association;
- Tourism Victoria;
- Township of Esquimalt Liaison Committee; and
- Township of Esquimalt Staff.

August Overview

Three construction notices were issued to stakeholders in August:

- Residual Solids Conveyance Line: Interurban Road Pump Station (August 9, 2019) (Appendix H);
- Macaulay Forcemain Installation: Bewdley Avenue Update (August 12, 2019) (Appendix I); and
- Residual Solids Conveyance Line: Marigold Road (August 16, 2019) (Appendix J).

The Project Team hand delivered the three construction notices to residents in close proximity to the work for these segments of the Project. A letter regarding a temporary truck traffic route change was also delivered to 52 residences in Esquimalt near the Macaulay Point and McLoughlin Point construction sites.

Over the month of August, the Project website, wastewaterproject.ca, was updated with information about the Project. Three construction notices were posted. The photo gallery section was updated with additional photos. Maps showing the progress of construction along the Clover Forcemain (Appendix K) and the Residual Solids Conveyance Line (Appendix L) were updated regularly, noting the Clover Forcemain installation was completed mid-August.

The CRD's Twitter account was used to provide Project updates on construction activities.

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; and
- Greater Victoria Harbour Authority.

September Overview

Two construction notices were issued to stakeholders in the September:

- Clover Point Pump Station: Temporary Closures (September 6, 2019) (Appendix M); and
- Residual Solids Conveyance Line: Temporary Overnight Work (September 9, 2019) (Appendix N).

As well, an update on construction on Dallas Road (September 5, 2019) (Appendix O) was distributed to more than 400 recipients and stakeholders who have signed up to receive Project updates. This email highlighted the completion of pipe installation of the Clover Forcemain and included a map (Appendix P) featuring the public amenities along the route.

The Project Team hand delivered the Clover Point Pump Station: Temporary Closures notice to 144 residents in close proximity to the construction site. In addition, the Team hand delivered notices regarding construction at the Colquitz Creek on Marigold Road to 30 nearby residences.

Over the month of September, the Project website, wastewaterproject.ca, was updated with information about the Project. Two construction notices were posted. The photo gallery section was updated with additional photos. A map showing the progress of construction along the Residual Solids Conveyance Line (Appendix Q) was updated weekly and a map of amenities along Dallas Road was added.

The CRD's Twitter account was used to provide Project information to the public, including alerts about anticipated traffic delays, upcoming pathway closures, links to the amenities map and a video highlighting the recent outfall pipe installation at McLoughlin Point.

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;
- Township of Esquimalt Liaison Committee; and
- Township of Esquimalt Staff.

Public Inquiries

Table 5 – Project Inquiries- August 2019

Inquiry Source	Contacts for Q3
Information phone line inquiries	88
Email inquiries responded to	50

Key themes of the public inquiries were as follows:

- Increased traffic on side streets due to Project construction;
- Questions about truck traffic and the Traffic Management Plan in Esquimalt;
- Questions about final restoration and paving;
- Inquiries about parking options in James Bay;
- Concerns about noise from traffic travelling over the temporary road surface (steel plates and gravel) on Grange Road;
- Questions about timeline for restoration along the RSCL and Clover Forcemain; and
- Questions about Willis Point Road traffic wait times.
- Concerns regarding traffic impacts;
- Interest in the restoration and public realm improvements along Dallas Road; and
- Questions regarding the timing of construction

2.5 Resolutions from Other Governments

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

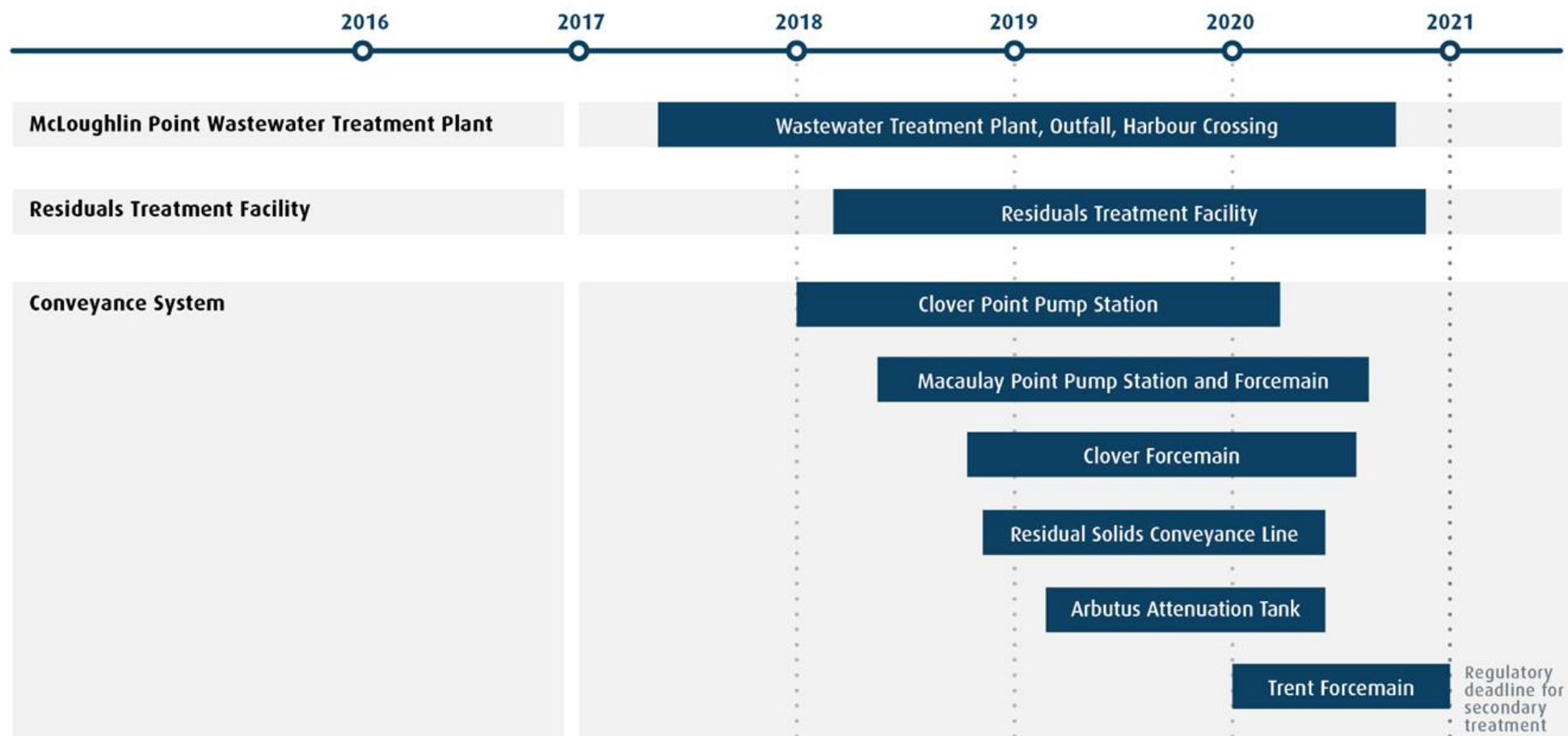
2.6 Schedule

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 summarised in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule remains the same as that shown in the Q2 2019 Quarterly Report, however the schedule 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 (October) are outlined below by function

Safety

- preparing for Great Shake-out annual event;
- TCP Traffic Plan inspections during site tours;
- attend CRD corporate occupational health and safety coordination committee meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- office/site inspections with contractors and CRD corporate at all active sites;
- prime contractor project safety meeting with Project safety representatives;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

Environment and Regulatory Management

- CRD to continue engaging with ENV to discuss the MWR Registration application and the RTF Operational Certificate application and determine if ENV requires any additional information or clarifications.

First Nations

- CRD and HRMG to meet with the W̱SÁNEĆ Technical Advisory Committee to discuss the Technical Assessment Report and construction and operation of the RTF and the CRD's plan for the beneficial use of the biosolids to be produced.

Stakeholder Engagement

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

Cost Management and Forecast

- prepare cost reports;
- monitor schedule;
- prepare Q3 financial close reporting;
- prepare for interim audit; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

- install raw sewage influent piping;
- install pig receiver upstream piping and harbour crossing connection;
- install planter wall #1 and #2 and tsunami wall #5;
- install odour control walls, roof slab and stairs;
- hydro test Densadeg 2 and 3;
- install supports for Suez walkways and equipment;
- install influent slide gates;

- continue with secondary area walls and slabs;
- install unit heaters and air handling units in secondary treatment;
- install miscellaneous metals and structural steel decking in blower room;
- install cable trays in heat recovery room;
- continue construction of tertiary walls and slabs;
- install motor control centres, uninterrupted power supply and programmable logic controllers in electrical room;
- install doors and glazing in electrical room;
- continue with Operations and Maintenance(O&M) building walls, columns and slabs;
- install O&M exterior doors, steel stud framing, exterior sheathing and masonry block walls;
- install insulation, drywall, suspended ceilings, and flooring in O&M building north; and
- install anchor protection and rock reefs for the outfall.

Clover Point Pump Station

- continue installation of 1200mm forcemain;
- install pig launching chamber;
- commence installation of 1500mm gravity inlet sewer;
- install building envelope and exterior finishes to washroom;
- install exterior north retaining wall;
- install concrete pipe supports in pump room;
- install doors in new pump station;
- install knife gates valves and check valves in pump room;
- place storm pumps;
- install air handling unit;
- install backwash and surge piping;
- install discharge piping to header; and
- install electrical and controls for storm pumps.

Macauley Point Pump Station

- backfill structure to elevation -1.0m;
- continue construction of walls and slabs;
- install double T precast roof;
- install miscellaneous metal stairs, grating and walkways;
- install exterior cross laminated timber (CLT) walls and partitions;
- install discharge header;
- install slide gates in influent channels;
- install monorail and cranes in pump room, bin room and odour control room; and
- install forcemain to Peter Street including the tie in and connection.

Residuals Treatment Facility

- piping installation in Digesters 1 and 2;
- commence foundation construction of Operations Building;
- piping installation at Other Municipal Solids Receiving Facility;
- cladding installation and building systems installations at the Residuals Handling Building;
- erect pre-engineered building structural steel at the Dryer Building;
- continue equipment installation at Dryer Building;
- commence foundation of Digester 3;

- continue erection of Residuals Solids Tanks 1 and 2;
- continue erection of Residual Effluent Holding Tank; and
- commence erection of Water Storage Tank.

Clover Forcemain

- Dallas Road reconstruction between Ogden Point to Douglas Street;
- cycle track construction in Areas 3 and 4;
- complete installation of transition chamber at harbour crossing; and
- complete City of Victoria watermain lining.

Residual Solids Conveyance Line (RSCL)

- install line valves and low point drain valves;
- complete installation of RSCL from Arm Street to Selkirk Avenue;
- continue installation of RSCL on Interurban Road (from Grange Road working north to Roy Road); and
- continue installation of RSCL on Interurban Road (from Hector Road working south to Alan Road).

Residual Solids Pump Stations and Bridge Crossings (RSCL 200)

- complete installation of RSCL at pump station #2 and pump station #3;
- pump station #3 final backfill, site grading and road construction;
- pump station #3 electrical installation;
- construct pump station #2 retaining wall;
- install pump station #2 underground electrical;
- install process mechanical and water service at pump station #2;
- continue with substructure construction at pump station #1;
- Marigold Control Valve Chamber complete cast in place foundation;
- Marigold control valve Chamber install suspended slab; and
- commence installation of support and piping under the Tillicum Bridge.

Arbutus Attenuation Tank (AAT)

- commence installation of permanent sanitary piping and manholes to facilitate bypass pumping and overflow routing;
- installation of temporary piping and overflow chamber and metering system to manage flows during construction;
- continue ongoing drilling operation for secant piles; and
- continue ongoing concrete pour operations for reinforced and plain secant piles.

Procurement

Trent Forcemain

- review and respond to tender inquiries, and issue addenda; and
- receive tender submissions and commence tender evaluation.

2.6.2 60 day look ahead

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

Safety

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

Environment and Regulatory Management

- CRD, Stantec, HRP and Lorax to meet with ENV to present results of McLoughlin Point WWTP outfall dispersion modelling and discuss ENV review of Outfall EIS and Overflow EIS.

First Nations

- ongoing engaging with First Nations
-

Stakeholder Engagement

- ongoing construction communications with stakeholders;
- development of content for Project Update #8; and
- ongoing community liaison meetings.

Cost Management and Forecast

- prepare cost reports;
- monitor schedule;
- interim audit, auditors on site; and
- submit funding claims to Infrastructure Canada (under the Building Canada Fund and Green Infrastructure Fund).

Construction

McLoughlin Point

- install perimeter water line for hydrants;
- install pig receiver piping and harbour crossing connection;
- install raw sewage influent piping;
- complete construction of tsunami wall 5;
- construct odour control envelope wall and roof slab;
- install stairs in odour control;
- install carbon filters 1&2 and carbon filter tank 1;
- continue construction of walls and slabs in the primary area envelope;
- install supports for Suez walkways;
- install process mechanical equipment in Densadeg 1 and 2;
- continue MBBR channel walls and slabs;

- install ducting, exhaust fans and air handling units in secondary treatment;
- continue installation of electrical cable trays, and power and control cables;
- install switchgear, harmonic filters, Programmable Logic Control and transformers in Blower room;
- install process mechanical in Heat Recovery Room;
- continue Tertiary Area walls and slabs;
- install process mechanical equipment in Pump Rooms level 1 and 2;
- install process electrical equipment in the electrical room;
- install Operations & Maintenance (O&M) building elevator;
- install O&M building green roofing;
- install O&M building envelope and interior finishes; and
- complete marine outfall.

Clover Point Pump Station

- install 1200mm sanitary forcemain;
- commence installation of Pig launching chamber;
- install 1500mm gravity sewer;
- install pipe supports in pump room;
- install doors and hardware on new pump station;
- continue installation of process mechanical equipment in pump room;
- install discharge, backwash and surge piping;
- install HVAC equipment and ducting; and
- commence functional testing of storm and sewage pumps.

Macaulay Point Pump Station

- install transformer and fuel tank pad;
- commence construction of Cross Laminated Timber (CLT) walls and roof;
- install sanitary pumps and piping;
- install vortex grit removal equipment;
- install odour control unit and associated ducting and fans;
- install cranes in Odour Control, Bin and Pump rooms;
- install cable trays in pump, generator and electrical rooms;
- install tie-in of Macaulay forcemain at Peter Street; and
- continue restoration of Anson and Bewdley Streets.

Residuals Treatment Facility

- continue piping installation in Digesters 1 and 2;
- continue construction of Operations Building;
- piping installation at Other Municipal Solids Receiving Facility;
- roofing installation and building systems installations at the Residuals Handling Building;
- complete pre-engineered building structural steel at the Dryer Building;
- continue equipment installation at Dryer Building;
- commence erection of Digester 3;
- complete erection of Residuals Solids Tanks 1 and 2;
- complete erection of Residual Effluent Holding Tank; and
- continue erection of Water Storage Tank.

Clover Forcemain

- road reconstruction Ogden Point to Niagara St;
- road reconstruction Douglas St to Camas Circle;
- road/cycle track construction Paddon Ave to Olympia Ave;
- road/cycle track construction Olympia Ave to Douglas St;
- road/cycle track construction Montreal St to Cock St;
- road/cycle track construction Douglas St west to Douglas St east; and
- road/cycle track construction Government St to Paddon Ave.

Residual Solids Conveyance Line

- continue RSCL installation at Craigflower Rd to Arm St to Selkirk Ave to Tillicum Rd;
- continue RSCL installation at Tillicum Rd to Tillicum bridge;
- continue RSCL installation at Grange Rd from Highway 1 to Burnside Rd;
- continue installation of RSCL installation at Interurban Rd from Grange Rd to Wilkinson Rd;
- continue installation of RSCL installation at – Hector Rd to Wilkinson Rd;
- continue installation of line, drain and air valves; and
- continue restoration of roads and trails as required.

Residual Solids Pump Stations and Bridge Crossings (RSCL 200)

- installation of RSCL on Marigold Street from Colquitz Creek to Marigold Pump Station and from Colquitz Creek to Grange Road;
- install CRL on Interurban Rd from Grange Rd to Marigold Rd;
- Commence installation of RTF control valve chamber;
- Continue installation of Tillicum bridge supports and piping;
- Install pump station #4 process mechanical and electrical;
- Install pump station #3 substructure, retaining wall and water service; and
- Continue with the RTF watermain installation.

Arbutus Attenuation Tank (AAT)

- continue ongoing drilling operation for secant piles;
- continue ongoing concrete pour operations for reinforced and plain secant piles;
- decommission existing overflow system infrastructure within tank footprint; and
- excavate remainder of tank footprint to facilitate additional secant pile construction operations.

Procurement

Trent Forcemain

- commence tender evaluation

2.7 Cost Management and Forecast

The quarterly cost report for September is attached as Appendix R. The cost report summarizes Project expenditures and commitments by the three 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 over the reporting period (on August 14, 2019) the associated amendment to the 2019-2023 Financial Plan was approved. Appendix S includes the approved \$10M increase to the current budget.

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 \$5.2 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 of \$863k were made over the reporting period, as itemized 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
Contingency and Program Reserve (in Control Budget)		\$ 69,318,051
Contingency and Program Reserve Draws to June 30, 2019		\$ (55,974,491)
Contingency and Program Reserve addition (May 2019)		\$ 10,000,000
Contingency and Program Reserve balance as at June 30, 2019		\$ 23,343,560
McLoughlin WWTP - Cable and Wire Tagging Standard	Jul-19	\$ (19,844)
Security and IT Equipment	Sep-19	\$ (47,141)
McLoughlin Point Site Remediation: excavation and disposal of contaminated soil (chlorides)	Sep-19	\$ (96,393)
Personal Protective Equipment (PPE) free pathway	Sep-19	\$ (8,940)
WWTP Total Draw		\$ (172,318)
RTF Total Draw		\$ -
Macaulay Pump Station - Supply of Mount Transformer with DNP3 Communications	Jul-19	\$ (220,154)
Macaulay Pump Station - Replacement of Inlet Piping	Jul-19	\$ (391,153)
Macaulay Pump Station - Cable and Wire Tagging Standard	Jul-19	\$ (46,471)
Clover Pump Station - Cable and Wire Tagging Standard	Jul-19	\$ (33,842)
Conveyance Total Draw		\$ (691,620)
PMO Total Draw		\$ -
BC Hydro Total Draw		\$ -
WTP Program Reserve Draw		\$ -
Contingency and Program Reserve draws in the reporting period		\$ (863,938)
Contingency and Program Reserve balance as at Sept 30, 2019		\$ 22,479,622

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	\$5.6M	\$66.9M
Government of Canada (Green Infrastructure Fund)	\$50M	\$3.5M	\$25.5M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
Federation of Canadian Municipalities	\$346K	-	-
TOTAL	\$459.3M	\$9.1M	\$92.4M

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 Q2 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
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.	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.	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. A work plan 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
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
McLoughlin Point Wastewater Treatment Plant				
Unexpected contaminated soil conditions during excavation.	Site has more contaminated soils than initial assessment.	CRD and HRP (as the Design-Build Contractor for the McLoughlin Point WWTP) are working collaboratively to minimize the costs associated with remediating the McLoughlin Point site while ensuring that contaminated materials are removed and disposed of in accordance with all applicable legislation.	H	No change
Conveyance				
Unexpected geotechnical conditions results in higher procurement and/or construction costs.	Geotechnical conditions result in redesign and/or higher construction cost than budgeted.	Ensure adequate investigations to manage the risk of unexpected geotechnical conditions: comprehensive geotechnical investigations have been undertaken for the Clover Forcemain, Macaulay Point Pump Station and Forcemain, and RSCL. This geotechnical information has been provided to procurement participants. Geotechnical investigations have been undertaken for the Trent Forcemain as part of the detailed design process.	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
Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.	Cost of conveyance contracts higher than estimated and budgeted.	There is only one conveyance contract remaining to be procured (the Trent Forcemain). It will be competitively-procured, as has been done for all of the construction contracts. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money, and in order to identify any opportunities where savings could be realized to partially-offset escalation.	M	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).	There is only one conveyance contract remaining to be procured (the Trent Forcemain), for which the Project Team recently refreshed the cost estimate. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money.	M	No change

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

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 engineering and construction at McLoughlin Point, including: installation of electrical panels and cabling in BAF gallery; Biological Aerated Filters (BAF) topping pours; forcemain pipe in Patricia Way; completion of placement of the marine outfall and commencement of the anchor protection and rock reefs; electrical HVAC and piping installation in the Process building and the Operations and Maintenance building; and completion of the Biological Aerated Filter (BAF) influent and effluent channels; permanent placement of generators.

Engineering

HRP held monthly progress meetings with the Independent Certifier during the reporting period.

Construction

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

July:

- marine outfall pipe floated into position and submerged;
- heat recovery room slab pour;
- electrical room structural steel erection;
- Biological Aerated Filters (BAF) topping pours commenced;
- BAF Influent and Effluent Channels completed;
- recommenced concrete work in Tertiary;
- Operations and Maintenance building (O&M) 2nd story slab poured;
- electrical installation of panels and cabling in BAF gallery;
- fine screen slab poured;
- primary walls continued all slabs completed;
- bypass piping installed; and
- installation of forcemain pipe in Patricia Way is ongoing.

August:

- commenced marine outfall anchor protection and rock reefs;
- commenced structural steel erection in heat recovery room;
- commenced steel stud framing in electrical room;
- installed exterior sheathing on electrical room;
- installed masonry block walls in Operations & Maintenance building;
- Peter Street reopened to traffic;
- blower room slab poured;
- west entry slab poured;
- work commenced on fine screen channel walls;
- 30” BAF backwash water piping installed;
- benching in Densadeg 1 commenced;
- commence BAF cell toppings; and
- continued installation of forcemain pipe in Patricia Way.

September:

- continued marine outfall anchor protection and rock reefs;
- continued underground utility work along Patricia St and Victoria View Rd;
- installation of plant bypass line continued;
- continued construction of tertiary outfall perimeter walls;
- clean water tank construction ongoing;
- BAF concrete walls, weirs, slabs and monofloors are ongoing;
- primary treatment walls, west Densadeg, Lamella slab and dirty backwash tank coating ongoing;
- HVAC, plumbing and electrical continued in the O&M Building;
- cable tray and cable pulling ongoing in BAF gallery and O&M building;
- process mechanical piping, supports and housekeeping pad continued in Primary, Secondary and Tertiary treatment; and
- generators were set on permanent foundations.

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



Figure 2– McLoughlin Point Wastewater Treatment Plant- Installing 24 inch Biological Aerated Filter influent piping.



Figure 3– McLoughlin Point Wastewater Treatment Plant- Placement of Rip Rap on anchor protection zone.



Figure 4– McLoughlin Point Wastewater Treatment Plant- Heat exchangers in Heat Recovery Room.



Figure 5– McLoughlin Point Wastewater Treatment Plant- Ongoing placement of concrete block at Operations and Maintenance building.



Figure 6– McLoughlin Point Wastewater Treatment Plant- Primary influent drop pipes from Biological Aerated Filter influent channel completed.

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) completing the Issued for Construction (IFC) drawings; meeting with the independent certifier; and progressing construction activities including: completed construction of the Digested Solids Storage Tank; continued equipment installation, erection of structural and exterior steel at the Residuals Handling Building; slabs poured and curing for the water storage tank, water pump house, and foundation work for the Residuals Effluent Storage Tank and Equalization Building; and commenced tank erection Residuals Solids Tanks 1 & 2.

Engineering

HRMG progressed planning and design activities during the reporting period including:

July:

- completion of the final (100%) design submission;
- monthly progress meeting with independent certifier; and
- submitted amended building permit architectural drawings to the District of Saanich.

August:

- submission of the Issued for Construction (IFC) drawings;
- monthly progress meeting with independent certifier; and
- working on resolution of outstanding minor design items.

September:

- monthly progress meeting with independent certifier; and
- working on resolution of few remaining design items.

Construction

Key construction activities in progress or completed by HRMG during the reporting period included:

July:

- completion of Digester 1 erection;
- continued erection of Digester 2;
- continued erection of Digested Solids Storage Tank;
- completed formwork for the Digester Building base slab;
- continued installation of process mechanical piping in Other Municipal Solids Receiving Facility;
- completed structural steel erection at the Residuals Handling Building;
- commenced equipment installation at the Residuals Handling Building;
- continued equipment steel erection and equipment installation at the Residuals Drying Facility;
- poured concrete foundations for Residuals Effluent Storage Tank and Equalization Building;
- continued reinforcing steel installation for the foundation slab of the Water Storage Tank;
- continued base preparation for the Water Storage Tank; and
- commenced base preparation for the Odour Control Facility.

August

- commenced Digester 1 piping;
- completed erection of Digester 2 and Digested Solids Storage Tank;
- completed the Digester Building foundation;
- continued installation of process mechanical piping in Other Municipal Solids Receiving Facility;
- commenced masonry block walls at the Residuals Handling Building;
- continued equipment installation at the Residuals Handling Building;
- completed steel erection at the Residuals Drying Facility;
- poured concrete foundations for Residuals Effluent Storage Tank and Equalization Building;
- continued reinforcing steel installation for the foundation slab of the Water Storage Tank;
- base slab was poured for the Water Storage Tank; and
- Water Pump House base slab was poured.

September

- completed internal piping for Digester 1;
- pipe installation ongoing for Digester 2;
- completed tank erection Digested Solids Storage Tank;
- placed heat exchangers in Digester Building;
- commenced exterior cladding, continued masonry walls, and commenced electrical cable tray installation for the Residuals Handling Building;
- continued equipment installation, commenced exterior structural steel erection for the Dryer Building;
- curing concrete bases for Residuals Effluent Tank Water Storage Tank, and Water Pump House;
- commenced tank erection Residuals Solids Tank 1 & 2;
- foundation complete of Equalization Building; and
- forming foundation of Odour Control Facility.

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



Figure 7– Residuals Treatment Facility- Installing concrete block walls in Residuals Handling Building.



Figure 8– Residuals Treatment Facility- Installation of structural steel for Dryer Building exterior frame ongoing.



Figure 9– Residuals Treatment Facility- 3rd row of bolted steel tank panels being installed on Residual Solids Tank 1.



Figure 10– Residuals Treatment Facility- Installation of interior piping inside Digester 2 ongoing.

2.9.3 Conveyance System

2.9.3.1 Clover Point Pump Station

Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed design and construction activities over the reporting period including: continued to assess outstanding design comments before submitting the final Issued for Construction (IFC) package; shop drawing reviews in advance of equipment deliveries; process piping and electrical installations; and installation of the roofing membrane; sanitary pump installation in the lower pump room; large diameter process piping installation from the new to existing pump rooms; and completion of public washroom underground utilities and foundation.

More specifically, construction activities in progress or completed by Kenaidan over the reporting period were as follows:

July:

- received and placed variable frequency drives, automatic transition switches, motor control centres, and switchgear;
- received and placed the odour control unit on the equipment pad;
- electrical feeder cable conduit installed to the transformer;
- installation of pipe supports and platforms is ongoing;
- concrete finishing, crack injection and sandblasting of the wet wells and channel is ongoing;
- precast roof beams installed and the roof slab was poured;
- bridge crane was received and installed; and
- large bore process piping installation is ongoing in the pump room.

August:

- pump, odour control, and screening rooms electrical installation ongoing;
- commenced interconnecting cable installation for the motor control centres;
- installed lighting and control panels in the transformer and electrical rooms;
- installation of the storm and sanitary process piping and headers ongoing;
- commenced wet well sand blasting and waterproof coating;
- roof membrane installation is ongoing; and
- miscellaneous metal installation is ongoing throughout the pump station.

September:

- sanitary pumps installed in the lower pump room;
- suction spools were placed in the wet wells;
- large diameter process piping installed from the new to existing pump rooms;
- cable tray and cable installation continued;
- roofing membrane installed;
- new public washroom underground utilities and foundation is complete; and
- stairways and platforms were installed in the pump room.

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



Figure 11–Clover Point Pump Station- Setting storm suction spoils.



Figure 12–Clover Point Pump Station- Installing pump room pipe supports.



Figure 13-Clover Point Pump Station- Lower pump room concrete pipe supports.



Figure 14- Clover Pump Station - Installed Electrical Room Monorail.

2.9.3.2 Macaulay Point Pump Station and Forcemain

Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed design and construction activities over the reporting period including: forming and pouring of exterior walls and interior slabs; vortex slab and walls poured; generator suspended slab formwork completed; all pump pedestals have been formed and poured; interior and exterior concrete walls continued with the final exterior wall completed installation of approximately 470m during the period for a total of 650m of forcemain installed to September 30, 2019

Engineering:

- continued assessment of outstanding design comments before submitting the final IFC package; and
- shop drawing reviews in advance of equipment deliveries.

Construction:

Key construction activities in progress or completed by Kenaidan over the reporting period were as follows:

July:

- forming and pouring of exterior walls and interior slabs is ongoing;
- construction of pump room housekeeping pads is ongoing;
- the second lift of concrete for the Vortex Degritter was poured;
- washroom plumbing installed and tested; and
- forcemain progressed 165m on Anson Street from Munro Street to Bewdley Ave, providing for a total installed length to the end of July of 345m.

August:

- slide gates delivered to site;
- vortex slab and walls poured;
- generator suspended slab formwork completed;
- screen room slab poured; and
- forcemain progressed 155m on Bewdley Ave from Anson Street to Peter St. providing for a total installed length to the end of August of 500m.

September

- forcemain progress 150m on Bewdley Ave from Anson S to Peter St. providing for a total installed length to the end of September of 650m;
- Suspended slab for genset room complete;
- all pump pedestals have been formed and poured; and
- interior and exterior concrete walls continued with the final exterior wall completed.

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



Figure 15–Macaulay Point Pump Station- Macaulay forcemain progressing east on Bewdley St to Peter St.



Figure 16–Macaulay Point Pump Station- Installing formwork for genset room wall.

2.9.3.3 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including completion of installation of the forcemain; completion of watermain connections; and ongoing road restoration, landscaping, cycle track base and paving.

Key construction activities in progress or completed by Windley over the reporting period were as follows:

July

- advanced the forcemain 380m from South Turner Street to Olympia Ave;
- installed transition chamber at Ogden Point;
- completed final water main connection at Dallas Road and Paddon Avenue including residential service transfers;
- constructed cycle track base from Clover Point; and
- installed air relief chambers #2 and #3.

August

- advanced the forcemain 160m from Olympia Avenue to Douglas Street and completed the forcemain installation on August 15, 2019;
- filled and tested the Ogden Point section of the forcemain;
- completed final watermain connection at Dallas Road and Paddon Avenue including residential service transfers;
- cycle track preparation from Clover Point west; and
- completed all sanitary and storm sewer relocations.

September

- 42” transition flange coating complete;
- cycle track paving and landscaping is ongoing;
- road restoration is ongoing;
- clearing of area 3 cycle track is complete;
- electrical lighting installation ongoing; and
- watermain lining in progress.

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



Figure 17-Clover Forcemain-Ogden Point - Road restoration in progress.



Figure 18-Clover Forcemain- Flange coating complete on under harbour pipe.



Figure 19–Clover Forcemain–Cycle track paved and landscaping in progress.



Figure 20–Clover Forcemain–Victoria Drain performing sanitary and drain CCTV inspections

2.9.3.4 Residual Solids Conveyance Line

The RSCL is being delivered through three construction contracts:

- RSCL 100 Residual Solids Pipes;
- RSCL 200 Residual Solids Pump Stations; and
- RSCL 300 Saanich Infrastructure Improvements.

RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities including:

July:

Installation of approx. 2.7 km of pipes at the following locations:

- Segment #1: Wollaston St. to Head St; and Head St. to Dunsmuir Rd;
- Segment #2: Grange Road from Lavender Ave to Violet Ave;
- Segment #3: Interurban Trail from Goward Road working North; and Quayle Road working North towards Goward Road; and
- Segment #4: Interurban trail from Wallace Drive to Hartland Ave.

August:

Installation of approx. 1.7 km of pipes at the following locations:

- Segment #1: Head St to Gore Street;
- Segment #2: Grange Road from Violet Ave to Gardenia Court;
- Segment #3: Interurban Road from Quayle Road to Goward Road;
- Segment #3: Interurban Trail from Goward Road working north; and
- Segment #4: Interurban Trail from Hartland Ave to Prospect Lake Drive.

September:

Installation of approx. 800m of pipes at the following locations:

- Segment #1: Gore Street to Peter Street;
- Segment #2: Grange Road from Gardenia Court to Interurban Road;
- Segment #3: Interurban Road south to Alan Road;
- Segment #3: Interurban Road from Quayle Road to Goward Road; and
- Segment #4: Interurban Trail restoration from the Red Barn Market to Prospect Lake Road.

Photographs of construction progress over the month of September on the Residual Solids Conveyance Line are shown in Figures 21-24.



Figure 21–Residual Solids Conveyance Line- Trench excavation and pipe installation at Gore Street.



Figure 22–Residual Solids Conveyance Line- Pressure testing of pipe underway on Interurban Trail south of the Red Barn Market.



Figure 23–Residual Solids Conveyance Line- Layout of pipe alignment on Interurban Road.



Figure 24–Residual Solids Conveyance Line- Lower course paving on Interurban Road.

RSCL 200 Residual Solids Pump Stations: Knappett Projects Inc. (“Knappett” as the Construction Contractor for the Residual Solids Pump Stations) continued construction activities including installation of approximately 2.7km of pipes and progressed construction activities at all three pump stations.

Key construction activities in progress or completed by Knappett over the reporting period were as follows:

July:

- wet well barrels were received at pump station #2 and #3;
- wet well barrel placed on concrete pad foundation and anchored and grouted; and
- crusher was mobilized to Hartland landfill site and crushed the blast rock from pump station #3.

August:

- continued installation of RSCL along Willis Point Road;
- installed pre-cast concrete wet well barrels at pump station #3;
- commenced construction of access road for pump station #3; and
- mobilised crews to Colquitz Creek and commenced RSCL crossing.

September:

- Colquitz Creek crossing was completed inclusive of spawning gravel placement and site restoration;
- Pump station #1 soils stripped from work site;
- Pump station #2 wet well slab and barrels were placed;
- Pump station #2 valve chamber slab was formed and poured;
- Pump station #3 lock block retaining wall was installed;
- Line valve and flow meter chambers at pump station #3 were placed; and
- installation 211m of RSCL pipes on Willis Point Road continued.

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



Figure 25–Residual Solids Pump Stations and Bridge Crossings – Excavation of trench to install Hartland water system improvements water main.



Figure 26 –Residual Solids Pump Stations and Bridge Crossings- Fusing of pipes on Willis Point Road.



Figure 27–Residual Solids Pump Stations and Bridge Crossings – Crane truck offload 1500mm wet well barrel at pump station 3.

2.9.3.5 Arbutus Attenuation Tank

NAC Constructors Ltd. (as the Construction Contractor for the Arbutus Attenuation Tank) has continued construction activities including: utility locates and confirmation of existing site services, dewatering wells drilled and testing, commenced and continued drilling, reinforcing and concreting secant piles, coordination and planning for decommissioning of existing overflow system located within the tank footprint; and design and procurement of temporary bypass and overflow routing system.

July

- removed trees in the site trailer compound area;
- set up site trailer compound;
- commenced excavation in tank area to prepare a working pad for the secant piling equipment;
- performed utility locates and confirmation of existing site services;
- mobilized secant drilling contractor to site;
- dewatering system mobilized to site and set up; and
- dewatering wells drilled and dewatering test conducted.

August

- excavated a portion of the tank area in order to facilitate construction and installation of secant piles;
- drawdown testing has been completed using four installed wells, these will then be used for the dewatering system;
- commenced drilling for secant pile installation;
- commenced installation of reinforcement for secant piles; and
- commenced concreting for plain and reinforced concrete piles.

September

- ongoing operation for drilling, reinforcing, and concreting secant piles;
- design and procurement of temporary bypass and overflow routing system; and
- coordination and planning for decommissioning of existing overflow system located within tank footprint.

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



Figure 28–Arbutus Attenuation Tank- Installation of Reinforcement for Secant Pile.



Figure 29– Arbutus Attenuation Tank –Video Inspection of Secant Pile.

2.9.3.6 Trent Forcemain

Stantec (as the design consultant for the Trent Forcemain) progressed the design process as follows:

July:

- submission of the 70% Design Report and Drawings;
- 70% Design Workshop with representatives of CRD's Integrated Water Services Department;
- 70% Design Workshop with City of Victoria (Underground, Transportation and Parks Departments);
- completion of a Geotechnical Report; and
- submission of draft Supplementary Specifications.

August:

- implemented CRD and City of Victoria review comments;
- continued developing the Issued for Tender documents; and
- updating geotechnical, arborist and environmental reports.

September:

- issued designs for tender; and
- review and respond to tender inquiries, and issue addenda.

Appendix A- Construction Notice – Residual Solids Conveyance Line: Esquimalt Update (July 4, 2019)



July 4, 2019

UPDATE

Residual Solids Conveyance Line: Esquimalt

Construction of the Residual Solids Conveyance Line has resumed in Esquimalt on the following streets during July and August: Head, Gore, Lyall, and the final section of Wollaston. This work is happening while the summer truck route is in effect (see map on reverse). There is also pipe installation on Anson Street and Bewdley Avenue for the Macaulay Forcemain.

Construction is progressing well with over 40% of the pipes installed. There are multiple crews working along the 19km alignment with pipes also currently being installed in Saanich on Grange Road, Interurban Road, and the Interurban Rail Trail. A regularly updated progress map can be found at wastewaterproject.ca.

What to Expect

- The pipe will be installed in segments.
- A trench will be excavated, the pipes will be installed and the trench will be backfilled. The surface will be temporarily restored at the end of each work day.
- Final restoration will take place after each section has been tested and completed.
- Rock encountered in the trench will be removed by blasting or mechanical means.
- Noise associated with this work includes excavation machinery and truck back-up beepers, and will not exceed the municipal noise bylaws.
- Pipes and equipment will be temporarily stored in the area while this work is completed.

Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Occasional Saturday work may be required and hours will fall within municipality bylaws.

Traffic Impacts

- There will be single lane alternating traffic in the work zones controlled by flaggers.
- There will be temporary parking impacts when work is being completed. Parking signs will be posted in advance.

Access

- Access to residents and businesses will be temporarily impacted when work is underway and will be reinstated at the end of each work day. Residents will be notified of temporary closures in advance.

Thank you for your patience as this work is completed.

(See maps on reverse)

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca



Summer Truck Route



RSCL Construction Progress Map



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix B- Construction Notice - Clover Forcemain: Dallas Road Temporary Closure (July 9, 2019)

July 9, 2019

Clover Forcemain: Dallas Road Temporary Closure

Dallas Road will be closed 24 hours/day from Monday to Friday for pipe installation during July and August in the narrow section between Government and Douglas streets. Due to the alignment of the pipe in the centre of the road, excavation, installation, and backfilling will require a full road closure. A detour along Government and Niagara streets will be in effect. Dallas Road will be open on the weekends.

Vehicle access to properties will be restricted during work hours and traffic control personnel will assist residents with access to their property outside work hours.

The Clover Forcemain is over 80% complete and this is the last section for pipe installation. Construction of the cycle path will begin this summer. All construction activities for the Clover Forcemain including road restoration and construction of public amenities are anticipated to be complete by summer 2020.

What to Expect

- “No parking” zones will be required to accommodate construction and detour traffic. These zones will be limited as much as possible.
- Emergency service vehicles will be given access at all times.
- Pedestrian access will be maintained on the north side of Dallas Road.

Work Hours

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

About 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.



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix C- Construction Notice – Trent Forcemain: Utility Locating (July 31, 2019)



July 31, 2019

Trent Forcemain: Utility Locating

The Wastewater Treatment Project includes construction of the Trent Forcemain, a 1.3km extension of an existing pipe from the intersection of Chandler Ave and St Charles Street 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.

What to Expect

Existing utilities will be located along the proposed alignment to inform the final design and alignment of the Trent Forcemain. This work involves using a mini excavator and hydrovac truck to expose the buried utility (sewer, storm drain, water, gas, etc.) and measure the depth of the pipe. The exposed area will then be backfilled and patched with asphalt. This work is anticipated to begin August 1 and take place during the first two weeks of August.

Work Hours

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

Traffic Impacts

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

Construction of the Trent Forcemain is anticipated to begin in early 2020 and take approximately one year to complete.

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.

Map on reverse

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



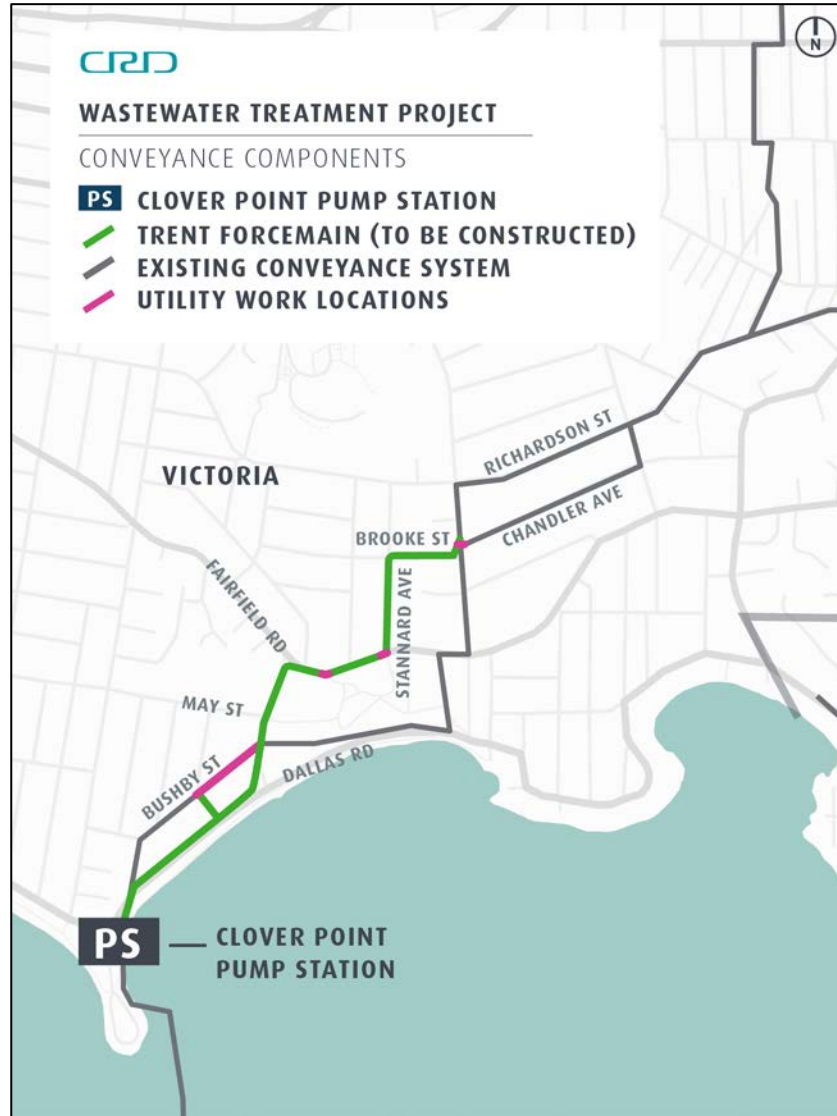
Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca



Preliminary design alignment and work locations for the Trent Forcemain



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix D- Information Sheet: Esquimalt Summer Truck Route



Esquimalt Summer Truck Route



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix E- Project Update #7

Wastewater Treatment Project

All major components of the Wastewater Treatment Project are under construction and significant progress has been made. With over 550 people working on 22 active construction sites, the Project remains on schedule to be complete by the end of 2020 to meet the federal and provincial regulations for wastewater treatment.

Construction Updates

MCLOUGHLIN POINT WASTEWATER TREATMENT PLANT

The site at McLoughlin Point remains busy with concrete work with about 70% of concrete placed for the structure. Progress is also being made on piping and structural steel. Drilling for the outfall was completed this spring with a micro-tunnel boring machine. The outfall pipe was assembled in Nanoose Bay and will be towed by barge in July and then submerged into the water and put in place. Utility and pipe installation in the roads near McLoughlin Point are also underway.

CLOVER POINT PUMP STATION

The Clover Point Pump Station is being upgraded and expanded. Concrete pouring continues as the foundation for the expansion to the pump station is built up. Equipment for the new section of the pump station is beginning to arrive on site.

RESIDUALS TREATMENT FACILITY

The Residuals Treatment Facility will treat the residual solids from the McLoughlin Point Wastewater Treatment Plant and turn them into Class A biosolids. The site has transformed from an empty gravel lot to a hub of activity. The digesters are beginning to take shape as the roof is raised and the walls built. Foundations are being poured and structural steel erected for the other buildings on site.

ARBUTUS ATTENUATION TANK

Located on CRD land in Haro Woods in Saanich, the Arbutus Attenuation Tank is a 5,000m³ underground tank that will store wastewater flows during storm events. The site was cleared in March and site preparation is currently underway to be followed by excavation. Once construction is complete, the site will be planted with vegetation appropriate for the local woodland setting.



Construction progress at the McLoughlin Point Wastewater Treatment Plant

RESIDUAL SOLIDS CONVEYANCE LINE (RSCL) & PUMP STATIONS

Three small pump stations are being built as part of the Residual Solids Conveyance Line to convey the residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility for treatment. They are located in the road right-of-way at Interurban and Courtland Ave near Camosun College, next to the Interurban Rail Trail near West Saanich Road and Observatory Road, and on Hartland Landfill property on Willis Point Road. Construction began on the RSCL in February and is expected to be complete by next spring.



Progress at the Residuals Treatment Facility

MACAULAY POINT PUMP STATION & FORCEMAIN

The Macaulay Point Pump Station continues to take shape as concrete pouring continues on site. Concrete is anticipated to be complete by the end of the summer and will be followed by construction of the wood structure above ground. Forcemain installation began in June and is progressing down Anson Street. The pipe is 1350mm in diameter and will convey wastewater from the Macaulay Point Pump Station to the McLoughlin Point Wastewater Treatment Plant for treatment.



Installation of the Macaulay Forcemain on Anson Street

CONSTRUCTION SUMMARY



22

active construction
sites



550

construction
workers



10,773m

pipes laid



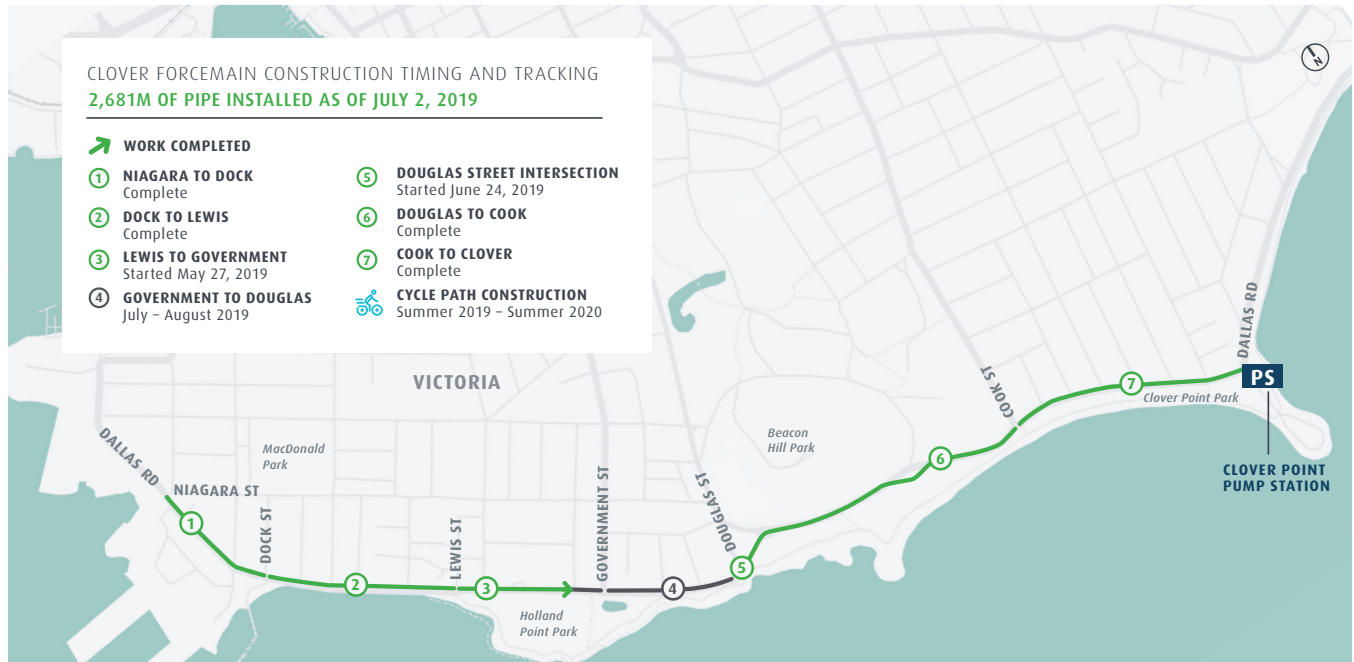
30,248m³

concrete poured

Progress Maps

CLOVER FORCEMAIN

On Dallas Road, installation of the Clover Forcemain is progressing ahead of schedule with over 80% of the pipes installed.



RESIDUAL SOLIDS CONVEYANCE LINE

Multiple crews are working on the Residual Solids Conveyance Line with over 40% of the pipes installed.



Dallas Road Amenities

As part of construction of the Clover Forcemain and Clover Point Pump Station, there are a number of public amenities that will be constructed. This includes a two-way protected cycle path from Dock Street to Clover Point. Construction of the cycle path is anticipated to begin over the summer and be complete by summer 2020.

OTHER AMENITIES INCLUDE:



A new crosswalk at Boyd Street, Government Street and Linden Avenue



Public benches



Wayfinding signage



Bike racks

AT CLOVER POINT, NEW AMENITIES INCLUDE:



Public washroom



Bike repair station



Bike racks



Two viewing plazas with benches, drinking fountain and litter receptacle



Artist rendering of the cycle path to be constructed

Summer Traffic Route: Esquimalt

As part of the Traffic Management Plan approved by the Township of Esquimalt, there is an alternate summer route for truck traffic. This is in effect from the first week of July to the last week of August.



For More Information

Website: wastewaterproject.ca

Email: wastewater@crd.bc.ca

24-7 Project Information Line: 1.844.815.6132

Appendix F- Clover Forcemain Progress Map (July 26, 2019)

CLOVER FORCEMAIN CONSTRUCTION TIMING AND TRACKING

3,013M OF PIPE INSTALLED AS OF JULY 26, 2019

➔ WORK COMPLETED

➊ NIAGARA TO DOCK
Complete

➋ DOCK TO LEWIS
Complete

➌ LEWIS TO GOVERNMENT
Complete

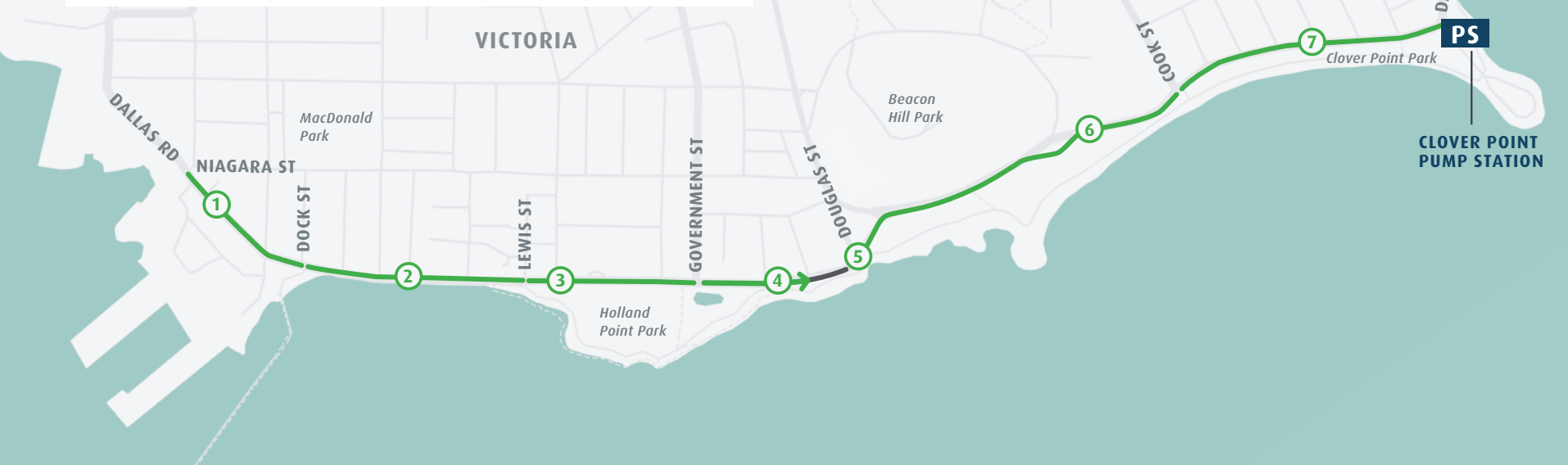
➍ GOVERNMENT TO DOUGLAS
Started July 8, 2019

➎ DOUGLAS STREET INTERSECTION
Complete

➏ DOUGLAS TO COOK
Complete

➐ COOK TO CLOVER
Complete

🚲 CYCLE PATH CONSTRUCTION
Summer 2019 – Summer 2020

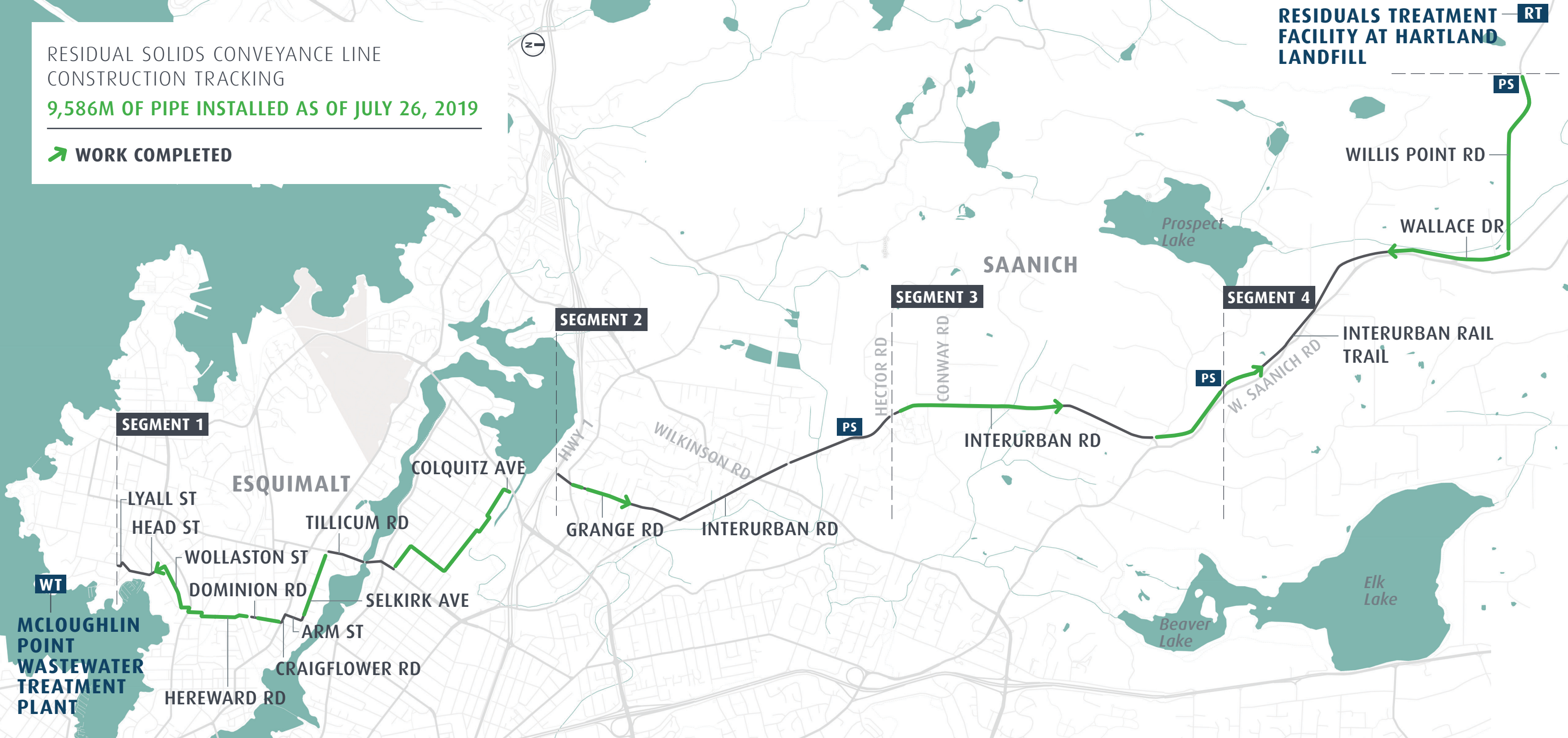


Appendix G- Residual Solids Conveyance Line Progress Map (July 26, 2019)

RESIDUAL SOLIDS CONVEYANCE LINE
CONSTRUCTION TRACKING

9,586M OF PIPE INSTALLED AS OF JULY 26, 2019

➔ WORK COMPLETED



Appendix H- Construction Notice- Residual Solids Conveyance Line: Interurban Road Pump Station (Aug 9, 2019)



August 9, 2019

Residual Solids Conveyance Line: Interurban Road Pump Station

Three small pump stations are being built along the route of the Residual Solids Conveyance Line for the Wastewater Treatment Project. These pump stations will move residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill for treatment. The contractor, Knappett Projects Inc., is beginning to mobilize and prepare for construction of the pump station located at Interurban Road and Courtland Avenue. This work is anticipated to be complete by spring 2020.

Pump Station Locations

- Interurban Road and Courtland Avenue
- Interurban Rail Trail near West Saanich Road and Observatory Road
- Willis Point Road within the footprint of the Hartland Landfill

What to Expect

- Locating existing utilities within the work area.
- Relocating the existing water main around the pump station site.
- Archaeological work by Millennia Research.
- Installing construction fencing and screening around the perimeter of the work area.
- Establishing a temporary laydown area.
- Site clearing and excavation.
- Rock encountered will be removed by blasting or mechanical means.
- Construction of below and above ground components.
- Site restoration and landscaping
- Noise associated with this work includes excavation, rock removal machinery and truck back-up beepers.

Traffic Impacts

- There will be single lane alternating traffic during work hours on Interurban Road near Courtland Avenue for water main relocation.
- During pump station construction there will be occasional single lane alternating traffic when required.
- Traffic control areas will be delineated by cones and signs and controlled by flaggers.

Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Occasional Saturday work may be required from 7:00 a.m. to 7:00 p.m.

Background

Construction of the Residual Solids Conveyance Line is progressing well with over 50% of the pipes installed (see map on reverse). There are multiple crews working along the 19km alignment. Construction of the conveyance line is anticipated to be complete in spring 2020. A regularly updated progress map can be found at wastewaterproject.ca.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



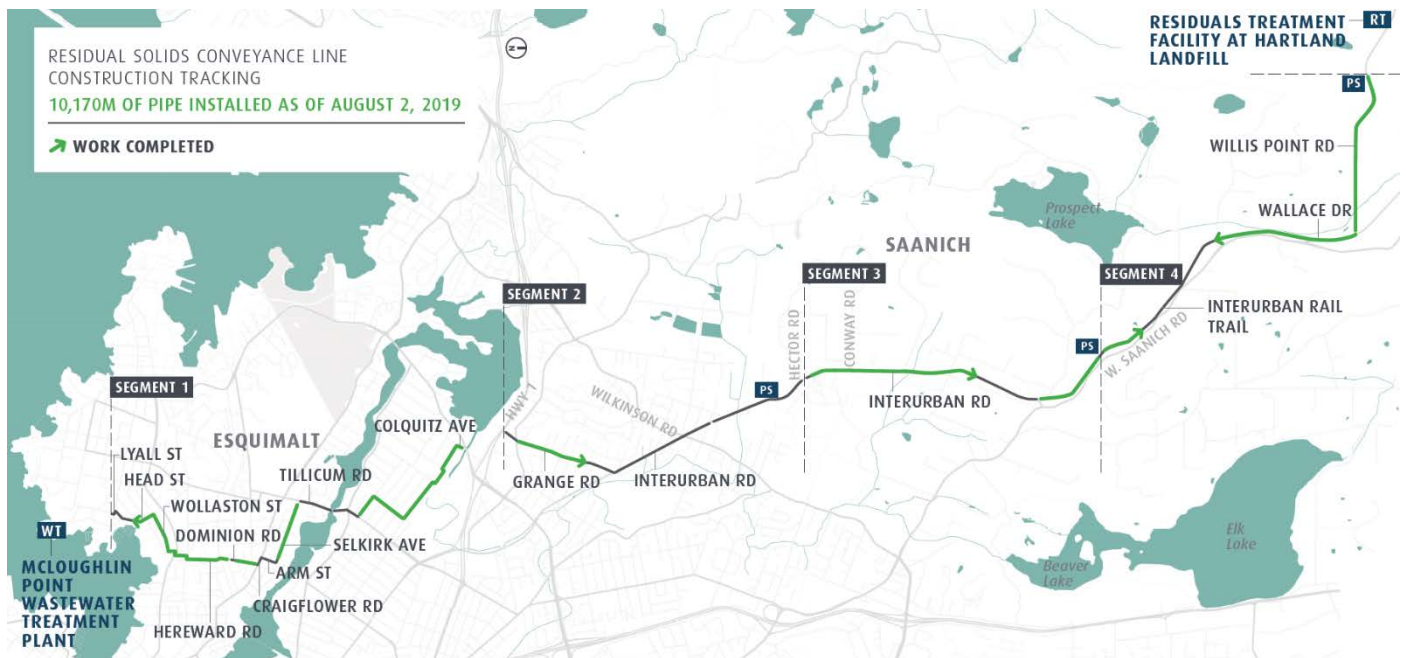
Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca



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



Progress map of 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 by the end of 2020.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix I- Construction Notice- Macaulay Forcemain Installation: Bewdley Avenue Update (August 12, 2019)

UPDATE

August 12, 2019

Macaulay Forcemain Installation: Bewdley Avenue

Construction of the Macaulay Forcemain is anticipated to progress onto Bewdley Avenue the week of August 19. Due to the alignment of the pipe near the centre of the road, the contractor, Kenaidan Contracting Ltd., will build a temporary road on the south side to provide driveway access for local residents only. Bewdley Avenue will be closed to all other traffic with a detour in place.

What to Expect

- Beginning August 14, gravel will be placed on the edge of properties next to the curb on the south side (odd-numbered addresses) to create a temporary road for residents to access their driveways.
- Steel plates will be used to provide access to homes on the north side (even-numbered addresses) when there is an open trench.
- Extra parking spaces will be available on Anson Street while this work is underway.
- Tree trimming and removal of one tree will be required to facilitate the temporary road.
- Light standards will be temporarily relocated.
- The area will be restored once the work is completed.

Work Hours

- 7:00 a.m. to 7:00 p.m. Monday to Friday
- 9:00 a.m. to 7:00 p.m. Saturday
- Occasional Sunday work may be required from 9:00 a.m. to 7:00 p.m.

Thank you for your patience as this work is completed.

Macaulay Forcemain Alignment

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix J- Construction Notice- Residual Solids Conveyance Line: Marigold Road (August 16, 2019)



August 16, 2019

Residual Solids Conveyance Line: Marigold Road

As part of the Wastewater Treatment Project, Knappett Projects Inc. will be installing a pipe along Interurban Road from the intersection at Grange Road, across the Colquitz River, to the Marigold Pump Station. This work is anticipated to start the week of August 19th and is expected to take approximately one month to complete. There will also be construction activities at the Marigold Pump Station to connect the new pipe to the facility.

What to Expect

- The pipe will be installed in segments.
- A trench will be excavated, the pipe will be installed, and the trench will be backfilled. The surface will be temporarily restored at the end of each work day.
- Final restoration will take place after each section has been tested and completed.
- Rock encountered in the trench will be removed by blasting or mechanical means.
- The Colquitz River crossing includes a fish salvage, installation of coffer dams and dewatering.
- Noise associated with this work includes excavation machinery and truck back-up beepers.
- Pipes and equipment will be temporarily stored in the area while this work is completed.

Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Occasional Saturday work may be required from 7:00 a.m. to 7:00 p.m.

Traffic Impacts

- There will be single lane alternating traffic in the work zones controlled by flaggers.
- Contractor will schedule work to try to minimize any traffic impact along the work site.
- There will be periodic closures of the Colquitz River Trail with a detour in place.

Access

- Vehicle access to residences will be temporarily restricted when work is underway and will be reinstated at the end of each work day. Residents will be notified of temporary closures in advance.

Thank you for your patience as this work is completed.

Background

Construction of the Residual Solids Conveyance Line includes two pipes and three small pump stations. The first pipe will convey residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill for treatment. The second pipe will return the liquid removed from the residual solids during the treatment process to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132

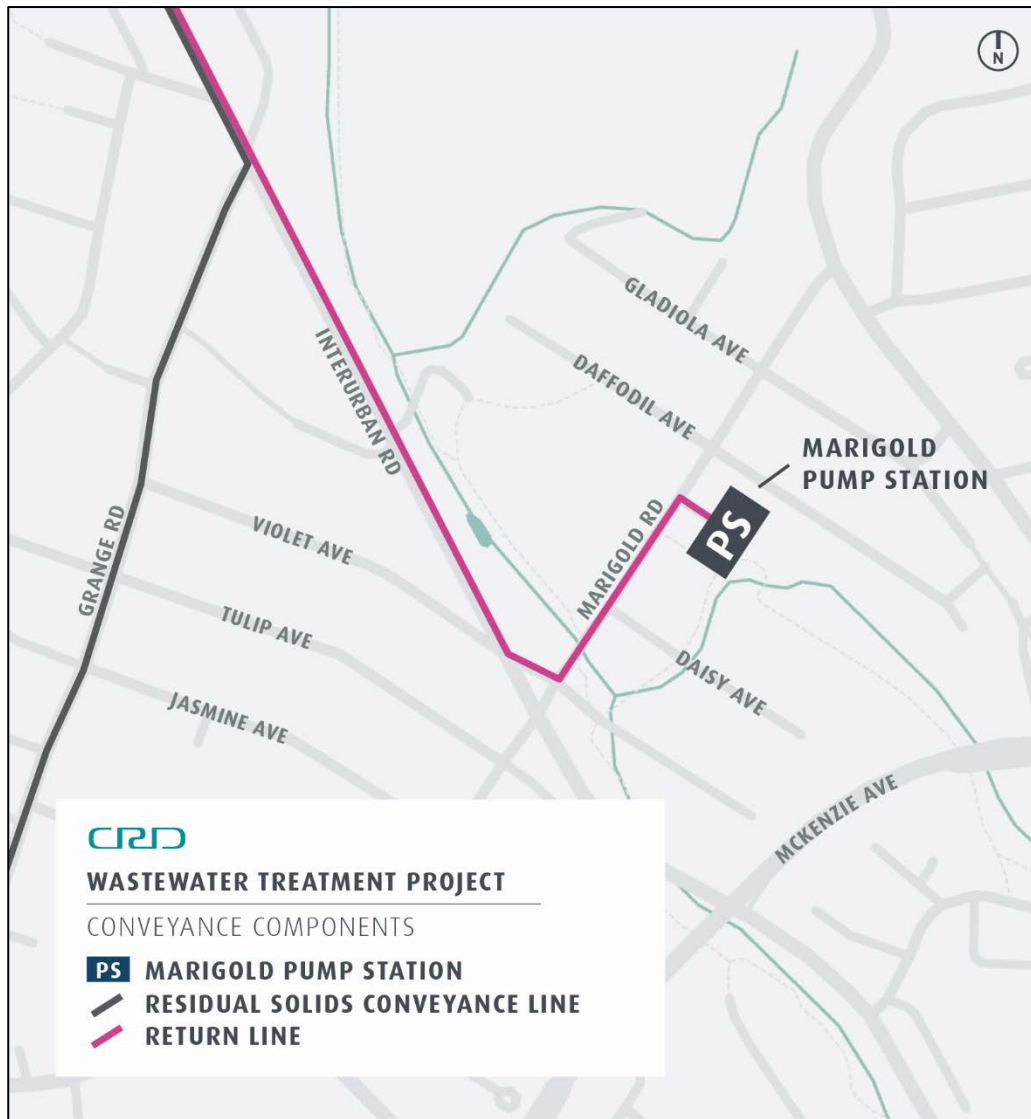


Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

RSCL Route



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.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

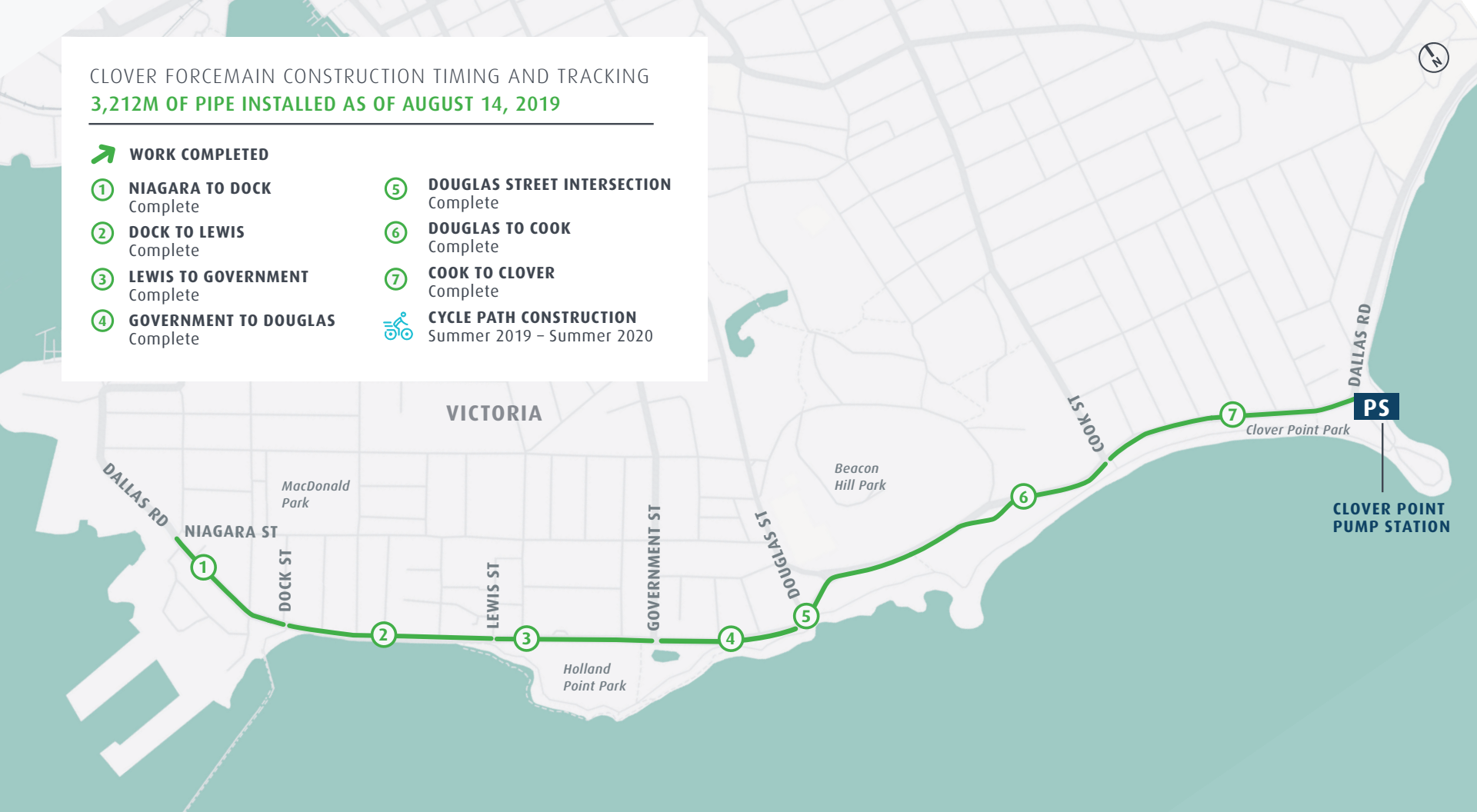
Appendix K- Clover Forcemain Progress Map (August 14, 2019)

CLOVER FORCEMAIN CONSTRUCTION TIMING AND TRACKING

3,212M OF PIPE INSTALLED AS OF AUGUST 14, 2019

➔ WORK COMPLETED

- | | |
|--|---|
| ➊ NIAGARA TO DOCK
Complete | ➅ DOUGLAS STREET INTERSECTION
Complete |
| ➋ DOCK TO LEWIS
Complete | ➆ DOUGLAS TO COOK
Complete |
| ➌ LEWIS TO GOVERNMENT
Complete | ➇ COOK TO CLOVER
Complete |
| ➍ GOVERNMENT TO DOUGLAS
Complete | 🚲 CYCLE PATH CONSTRUCTION
Summer 2019 – Summer 2020 |

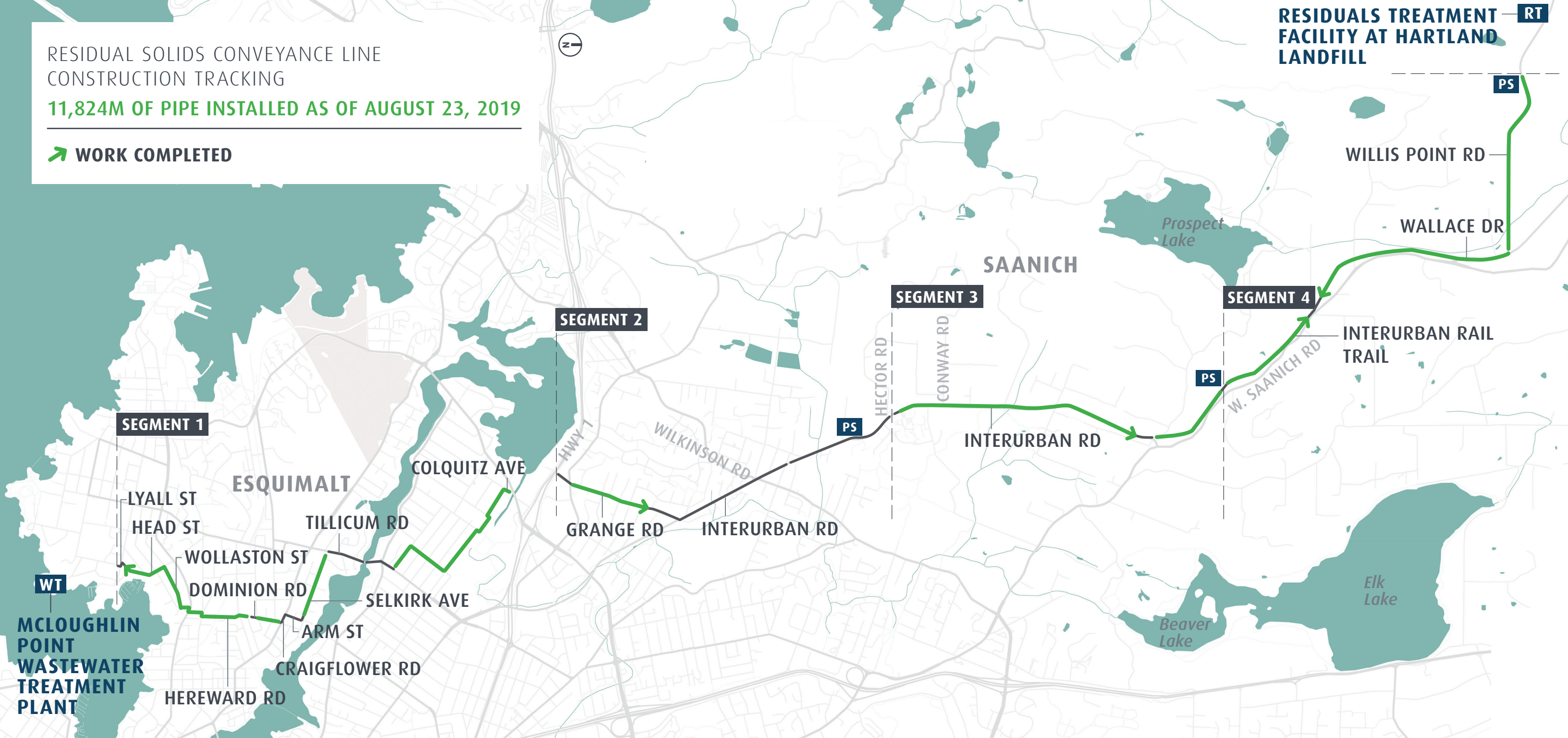


Appendix L- Residual Solids Conveyance Line Progress Map (August 23, 2019)

RESIDUAL SOLIDS CONVEYANCE LINE
CONSTRUCTION TRACKING

11,824M OF PIPE INSTALLED AS OF AUGUST 23, 2019

➔ WORK COMPLETED



Appendix M- Clover Point Pump Station: Temporary Closures (September 6, 2019)



September 6, 2019

Clover Point Pump Station: Temporary Closures

Construction of the Clover Point Pump Station will require temporary closures of the Dallas Road Waterfront Pathway and Clover Point Road this fall.

A 1.5m diameter pipe will be installed along a portion of the waterfront pathway between the Clover Point Pump Station and the crosswalk at Memorial Crescent. This work will require a closure of this section of the pathway and is anticipated to take place from September 2019 - January 2020. The next section of this pipe, known as the Trent Forcemain, is anticipated to be installed in 2020 and may require further closures of the pathway.

Clover Point Road will also be closed for approximately four weeks this fall to vehicle traffic and parking to facilitate the connection of the Clover Forcemain to the Clover Point Pump Station.

What to Expect

- The pathway will be closed to allow safe access for machines and equipment.
- Fencing will be set up around the perimeter of the construction area along the pathway.
- The pathway will be cut and removed to allow for excavation and installation of the pipe. The trench will be backfilled and the walkway restored.
- Pedestrians can access Clover Point Park by following a detour along Dallas Road.
- Beach access will remain available at Memorial Crescent.

Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Saturday from 10:00 a.m. to 7:00 p.m.

Traffic Impacts

- Clover Point Road will be closed to vehicle traffic and parking to facilitate construction activities. Fencing and signage will be posted.
- Dallas Road will remain open to vehicle and pedestrian traffic.

Construction at Clover Point is anticipated to be complete by mid-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.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix N- Residual Solids Conveyance Line: Temporary Overnight Work (September 9, 2019)



UPDATE

September 9, 2019

Residual Solids Conveyance Line: Temporary Overnight Work

As part of construction for the Residual Solids Conveyance Line a pipe will be installed across the Colquitz River. The contractor, Knappett Projects Inc., will isolate and dewater a section of the Colquitz River to allow this work to take place. This will require a pump to run continuously until completion. This work will start tomorrow and is anticipated to take up to four days. Overnight noise is to be expected during this time.

After the dewatering is complete a trench will be dug, the pipe will be installed, and the trench will be backfilled. At this point the Colquitz River will be restored to its original condition. All construction work is regularly monitored by a Qualified Environmental Professional with appropriate environmental protections in place.

We appreciate your patience while this work is completed.

Background

Construction of the Residual Solids Conveyance Line includes two pipes and three small pump stations. The first pipe will convey residual solids from the McLoughlin Point Wastewater Treatment Plant to the Residuals Treatment Facility at Hartland Landfill for treatment. The second pipe will return the liquid removed from the residual solids during the treatment process to the Marigold Pump Station, from where it will be returned to the McLoughlin Point Wastewater Treatment Plant through the existing conveyance system.

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.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix O- Dallas Road Update (September 5, 2019)



Wastewater Treatment Project

Treated for a cleaner future

September 2019



Dallas Road Construction Update

The Wastewater Treatment Project has reached another key milestone ahead of schedule with the completion of the pipe installation along Dallas Road. The last piece of pipe connecting Clover Point to Ogden Point was installed in mid-August. The Dallas Road work is now transitioning to construction of the cycle path and restoration work. This includes completing some utility relocations.

As part of construction of the Clover Forcemain and Clover Point Pump Station, there are a number of public amenities that will be installed. This map highlights where they will be located.



Construction on Dallas Road is anticipated to be complete in spring 2020. The construction at the Clover Point Pump Station remains on schedule to be complete mid-2020.

For more information about the Wastewater Treatment Project, please visit our website wastewaterproject.ca.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix P- Dallas Road Amenities Map



VICTORIA

Coast Guard

MacDonal Park

NIAGARA ST

Ogden Point

GVHA

DALLAS RD

Holland Point Park

Terry Fox Monument

Beacon Hill Park

Beacon Hill Park Story Pole

Clover Point Park

PS

EXISTING INFRASTRUCTURE

- CROSSWALK
- BUS STOP
- WASHROOM

PROJECT COMPONENTS

- CLOVER FORCE MAIN
- VICTORIA HARBOUR CROSSING
- CLOVER POINT PUMP STATION

INFRASTRUCTURE IMPROVEMENTS

- NEW CROSSWALK
- WASHROOM
- BENCHES
- BIKE RACKS
- CYCLE PATH
- TREE REPLANTING AREA
- SPLIT-RAIL FENCE

Appendix Q- Residual Solids Conveyance Line Progress Map (September 27, 2019)

RESIDUAL SOLIDS CONVEYANCE LINE
CONSTRUCTION TRACKING

13,611M OF PIPE INSTALLED AS OF SEPTEMBER 27, 2019

➔ WORK COMPLETED



Appendix R- Monthly Cost Report (September)

ASSET MANAGEMENT COST REPORT				
as at Sept. 30, 2019				
BUDGET	COST EXPENDED	COMMITMENTS	FORECAST	VARIANCE

Project Component	Control Budget	Allocated Budget	Expended to August 31, 2019	Expended over reporting period (September 2019)	Expended to Sept. 30, 2019	Expended to Sept. 30, 2019 as a % of Budget	Remaining (Unexpended) Budget at Sept. 30, 2019	Total Commitment at Sept. 30, 2019	Unexpended Commitment at Sept. 30, 2019	Uncommitted Budget at Sept. 30, 2019	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Allocated Budget
McLoughlin Point Wastewater Treatment Plant ^A	378.0	364.5	253.0	9.7	262.8	72%	101.7	343.6	80.8	20.9	101.7	364.5	-	0%
Residuals Treatment Facility ^A	195.0	157.8	18.7	0.1	18.8	12%	139.0	152.9	134.1	4.9	139.0	157.8	-	0%
Conveyance System ^A	192.0	252.7	126.5	4.5	131.0	52%	121.7	213.6	82.6	39.1	121.7	252.7	-	0%
Total Costs	765.0	775.0	398.2	14.3	412.6	53%	362.4	710.1	297.5	64.9	362.4	775.0	-	0%

A - Including PMO and Common Costs

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

** Cost report presents approved expenditures

Appendix S- Quarterly Cost Report

WTP QUARTERLY COST REPORT as at Sept. 30, 2019														
Project Component	Control Budget	Allocated Budget	COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
			Expended to June 30, 2018	Expended over reporting period (Q3 2019 July - Sept)	Expended to Sept. 30, 2019	Expended to Sept. 30, 2019 as a % of Budget	Remaining (Unexpended) Budget at Sept. 30, 2019	Total Commitment at Sept. 30, 2019	Unexpended Commitment at Sept. 30, 2019	Uncommitted Budget at Sept. 30, 2019	Forecast to Complete	Forecast at Completion	Variance at Completion \$	Variance at Completion as a % of Budget
McLoughlin Point Wastewater Treatment Plant ¹	316.6	319.2	209.2	33.5	242.7	76%	76.5	312.5	69.8	6.8	76.5	319.2	-	0%
Residuals Treatment Facility ¹	147.1	138.4	8.3	0.1	8.4	6%	130.0	137.6	129.2	0.8	130.0	138.4	-	0%
Conveyance System ¹	141.2	208.2	84.1	25.6	109.7	53%	98.5	185.1	75.4	23.1	98.5	208.2	-	0%
Project Management Office														
Project Management Office ("PMO")	71.1	75.6	42.2	4.3	46.5	61%	29.1	66.4	19.9	9.2	29.1	75.6	-	0%
Common Costs														
BC Hydro	11.6	3.0	1.9	0.1	2.0	68%	1.0	2.0	0.0	0.9	0.9	3.0	-	0%
Third Party Commitments	8.1	8.1	3.1	0.2	3.3	40%	4.9	6.5	3.2	1.6	4.9	8.1	-	0%
Program Reserve and contingencies	69.3	22.5	-	-	-	0%	22.5	-	-	22.5	22.5	22.5	-	0%
Total Costs	765.0	775.0	348.8	63.8	412.6	53%	362.4	710.1	297.5	64.9	362.4	775.0	-	0%

1 - Excluding PMO, Common Costs and

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

























** Cost report presents approved expenditures

Wastewater Treatment Project



WTP Project Update September- December 2019
January 22, 2020

Key Performance Indicators November 2019

Key Performance Indicators		Project Overall	WWTP	RTF	Conveyance System
Safety	Deliver the Project safely with zero fatalities and a total recordable incident frequency (TRIF) of no more than 1*.				
Environment	Protect the environment by meeting all legislated environmental requirements and optimizing opportunities for resource recovery and greenhouse gas reduction.				
Regulatory Requirements	Deliver the Project such that the Core Area complies with provincial and federal wastewater regulations.				
Stakeholders	Continue to build and maintain positive relationships with First Nations, local governments, communities, and other stakeholders.				
Schedule	Deliver the Project by December 31, 2020.				
Cost	Deliver the Project within the Control Budget (\$765 million).				

Safety is our top priority: all KPIs are central to decision-making process

W̱SÁNEĆ Memorandum Of Understanding



W̱SÁNEĆ Leadership Council

McLoughlin Point WWTP



Backfilling Harbour Crossing Pipe; installation of control and check valves; and installation of transformers in Operations & Maintenance Building.

Macaulay Point & Clover Point Pump Stations



Installation of Cross Laminated Timber roof panels ; Sanitary pumps; and force main looking toward the pump station

Residuals Treatment Facility



Product storage silo assembled, exterior insulated cladding panels on Equalization building; & Sixth row of panels on water tank

Residual Solids Conveyance Line & Clover Forcemain



Paving from Government to Douglas Streets; Placing concrete for secant piles; Installed pig receiver and line valve manhole at PS2



**REPORT TO CORE AREA WASTEWATER TREATMENT PROJECT BOARD
MEETING OF TUESDAY, NOVEMBER 26, 2019**

SUBJECT Wastewater Treatment Project October 2019 Monthly Report

ISSUE

To provide the Core Area Wastewater Treatment Project Board with the Wastewater Treatment Project October 2019 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 October 2019 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 October 2019 Monthly Report, be received for information and forwarded to the Core Area Liquid Waste Management Committee and CRD Board for information.



Elizabeth Scott, Deputy Project Director
Wastewater Treatment Project



Dave Clancy, Project Director
Wastewater Treatment Project
Concurrence

Attachments: 1

Appendix A: Wastewater Treatment Project October 2019 Monthly Report

ES:er



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

CRD Wastewater Treatment Project

Monthly Report

Reporting Period: October 2019

TABLE OF CONTENTS

1	<i>Executive Summary.....</i>	<i>2</i>
1.1	Introduction	2
1.2	Dashboard	3
2	<i>Wastewater Treatment Project Progress</i>	<i>5</i>
2.1	Safety	5
2.2	Environment and Regulatory Management.....	7
2.2.1	Environment	7
2.2.2	Regulatory Management	8
2.3	First Nations	8
2.4	Stakeholder Engagement	9
2.5	Resolutions from Other Governments	10
2.6	Schedule	10
2.6.1	30 day look ahead	12
2.6.2	60 day look ahead	15
2.7	Cost Management and Forecast	17
2.7.1	Commitments	18
2.7.2	Expenses and Invoicing	18
2.7.3	Contingency and Program Reserves	18
2.7.4	Project Funding.....	19
2.8	Key Risks and issues	19
2.9	Status (Engineering, Procurement and Construction)	24
2.9.1	Wastewater Treatment Plant (McLoughlin Point WWTP)	24
2.9.2	Residuals Treatment Facility	28
2.9.3	Conveyance System	31
	<i>Appendix A- Residuals Treatment Facility (Hartland): Blasting Notice (October 1, 2019).....</i>	<i>46</i>
	<i>Appendix B- Traffic Advisory: Interurban, Marigold and Grange Roads (October 9, 2019).....</i>	<i>47</i>
	<i>Appendix C- Residual Solids Conveyance Line: Tillicum Bridge Lane Closure (October 10, 2019)</i>	<i>48</i>
	<i>Appendix D- Clover Point Pump Station: Overnight Work (October 22, 2019)</i>	<i>49</i>
	<i>Appendix E- Residual Solids Conveyance Line Progress Map</i>	<i>50</i>
	<i>Appendix F- Monthly Cost Report (October)</i>	<i>51</i>

1 Executive Summary

1.1 Introduction

This monthly report covers the reporting period of October 2019 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 and the Projects Schedule has been updated to delineate 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: work on Biological Aerated Filter (BAF) Mono Floor, fire suppression work in Operations and Maintenance (O&M) building; commenced installation of Lamella plate settling equipment in Primary Clarifier No. 1; and progression of building envelope on Electrical, Blower and Heat Recovery buildings.

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: continuing pipe installation for Digester 2 and Other Municipal Solids receiving facility; continuing construction of the potable water storage tank; enclosing the Residuals Handling Building and Dryer Building, mechanical and equipment installation in the Residual Handling Building and Dryer Building; and completion of tank erection of the Residuals Solids Tanks 1 and 2.

The Conveyance System is being 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 construction activities over the reporting period including: pump and valve installation in the lower pump room; stairways and platforms installed in wet wells; backfill over new structure complete; and modified existing inlet channel to connect to the new storm channel.
- 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 process piping and lighting circuits in pump room; poured suspended slab and pump room topping; installed shoring for sanitary sewer in preparation for constructing the new diversion chamber and inlet piping; and completed installation of approximately 115m of forcemain (total of 690m installed to October 31, 2019).

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: successful completion of forcemain pressure testing; paving of the cycle track; road restoration; electrical lighting installation; and watermain lining.
- 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 the Residual Solids Pipes) continued construction activities including: installation of approximately 700m of pipe; valve chamber installation; and restoration.
 - RSCL 200 Residual Solids Pump Stations: Knappett Projects Inc. (“Knappett” as the Construction Contractor for the Residual Solids Pump Stations) continued construction activities including: underground civil work at all three pump stations; erection of scaffolding at the Tillicum Bridge; tree removal, blasting and rock removal for the Hartland reservoir; and ongoing installation of the RTF water supply main within the Hartland landfill.
- NAC Constructors Ltd. (as the Construction Contractor for the Arbutus Attenuation Tank) continued construction activities including: installation of secant piles and excavation; maintaining the dewatering system; developing a bypass pumping plan for temporary flows during construction; and coordination with third parties for site water and power.
- Trent Forcemain: the Project Team, with Stantec (as the design consultant for the Trent Forcemain) progressed work through the procurement phase, including responding to tender inquiries and issuing addenda, receiving tenders, and commencing the evaluation.

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 KPI’s 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 recordable incident frequency decreased from 1.3 at the end of the last reporting period to 1.2. 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. 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 minor environmental incident occurred over the period at McLoughlin Point WWTP. Sediment laden water was found to be entering the storm sewer system through a storm drain that was in proximity to some excavating activity. Additional sediment control measures were implemented and the discharge of sediment laden water ceased.
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. 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: Macaulay Point Pump Station, Clover Point Pump Station, McLoughlin Point WWTP, RTF, Clover Forcemain, Residuals Solids Pump Stations, Residuals Solids Pipes and Arbutus Attenuation Tank.

Over the reporting period 9 safety incidents occurred in total: comprising three near-miss, and six report-only, no recordable. The incidents are summarized in Table 2.

Table 2: Safety Incidents over the Reporting Period

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
October 5, 2019	McLoughlin Pt WWTP	Report Only	While moving a piece of equipment a worker lost their grip pinching their hand between the equipment and the stair railing.	Worker reported incident to First Aid but no treatment was rendered and worker returned to work.	Tool-box talk to discuss good communication methods when performing manual lifts with multiple people. Ensure everyone has a good grip on the load before proceeding.
October 5, 2019	McLoughlin Pt WWTP	Near Miss	Workers cutting the concrete on the second floor of the O&M building allowed a core to fall to the first floor. The control zone below the work area had been established but was deficient.	No one was injured in the incident.	Job area was immediately shutdown and control zone established in the correct location Tool-box talk held to coordinate activities and communication between crews on upper and lower slabs
October 14, 2019	RCSL200	Report Only	Police notified our contractor that a road plates had shifted creating a potential hazard.	Police controlled the area around the excavation until contractor arrived to reinstall road plate.	Plate was reinstalled with an increased overhang for better coverage and pinned in place to prevent the plates from shifting
October 23, 2019	RSCL100	Report Only	Altercation between an aggressive driver and a Traffic Control Person (TCP)	Police were called and a file number was opened with the Saanich Dept.	Monthly Prime Contractor meeting discussed the dangers of Flagging and the importance of not confronting dangerous drivers.
October 16, 2019	Macaulay Point Pump Station	Near Miss	Worker exposed to small electrical shock from a road plate while installing Macaulay forcemain.	It was determined that a broken wire from a street lights base came in contact with the steel plate.	Electrical line repaired and isolated from road plate.
October 18, 2019	RCSL200	Report Only	Altercation between an aggressive driver and a Traffic Control Person (TCP)	Police were contacted and a police file opened.	Monthly Prime Contractor meeting discussed the dangers of Flagging and the importance of not confronting dangerous drivers.
October 30, 2019	McLoughlin Pt WWTP	Report Only	Worker reported to first aid as they were experiencing pain and stiffness in their wrist from previous day activities.	Worker was referred to a medical clinic for an evaluation and no further treatment was provided.	Tool-box talk reminder to report all incidents

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
October 30, 2019	McLoughlin Pt WWTP	Report Only	Worker's hand struck a piece of reinforcing steel.	Worker reported incident, no first aid required and returned to work	Tool-box talk to discuss awareness of surroundings and to ensure that all hazards are identified on their Daily Field Level Risk Assessment cards
October 31, 2019	RSCL200	Near Miss	Watering truck backed into an open excavation.	Contractor utilized an excavator to move the water truck.	Tool-box talk on the use of spotters when backing any vehicles with limited line of site

Key safety activities conducted during October included:

- WWTP Project Office participation in the Great Shake Out and annual emergency response drill;
- bi-weekly project update meetings with prime contractors: Kenaidan, Windley, Don Mann, HRP, Knappett and NAC;
- hosted Prime Contractor Safety Coordination Meeting;
- weekly project update meetings with prime contractor: HRMG;
- monthly incident investigation reviews;
- reviewed site specific safety plans and high risk tasks;
- daily site safety audits during habitat restoration work at Colquitz Creek; and
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites.

Table 3: WTP Safety Information

	Reporting Period (October 2019)	Project Totals
Person Hours		
PMO	3 787	121 141
Project Contractor	92 940	1 163 009
Total Person Hours	96 727	1 284 150
PMO	32	
Project Contractors (& Project Consultants) working on Project Sites	514	
Total Number of Employees	546	
Near Miss Reports	3	36
High Potential Near Miss Reports	0	5
Report Only	6	101
First Aid	0	31
Medical Aid	0	3
Medical Aid (Modified Duty)	0	2
Lost Time	0	3
Total Recordable Incidents	0	8
		Project Frequency (from January 1, 2017)
First Aid Frequency		4.8
Medical Aid Frequency		0.8
Lost time Frequency		0.5
Total Recordable Incident Rate		1.2

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 October included:

- The CRD completed an Environmental Effects Determination (EED) Amendment for submission to the Department of National Defence. The EED Amendment was prepared to evaluate environmental effects from construction of a parking area near the McLoughlin Point WWTP.

Over the reporting period HRP experienced a minor environmental incident. During an environmental inspection that coincided with a heavy rainfall event, HRP's Environmental Manager observed sediment laden water discharging from a storm sewer outfall near their temporary office buildings at McLoughlin Point. The sediment laden water was entering the storm sewer system through a storm drain that was in proximity to some excavating activity. HRP implemented additional sediment control measures and the discharge of sediment laden

water ceased. Due to the short duration of the discharge, no adverse environmental effects were observed.

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 October included:

- The BC Ministry of Environment and Climate Change Strategy (ENV) authorized the temporary bypass of some parts of the Clover Point pump station to allow Kenaidan (as the Design-Build Contractor) to complete critical tie-in work.

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 Q3 2019 Quarterly Report.

Table 4- Key Permits Status

<i>Permit/Licence</i>	<i>Anticipated Date</i>	<i>Status</i>	<i>Party Responsible for Obtaining Permitting</i>
McLoughlin Point WWTP			
Municipal Wastewater Regulation ("MWR") Registration	Q1 2020	Submitted September 2019	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
Residuals Treatment Facility			
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, Macaulay Point and McLoughlin Point.

Millennia Research (as the Project's archaeological advisor) continued archaeological monitoring of excavations at Clover Point and along the RSCL route with members of local First Nations.

In June the CRD shared a Technical Assessment Report that was prepared by Hartland Resource Management Group (the Design-Build-Finance-Operate-Maintain Contractor for the RTF) with each of the Esquimalt, Malahat, Pauquachin, Songhees, Tsartlip, Tseyicum and Tsawout Nations, and offered to meet to review: the report findings, any other aspects of the construction and operation of the RTF, or the plan for the beneficial use of the biosolids that will be produced. In July the WSÁNEĆ Leadership Council accepted the CRD's offer and asked that the CRD present to the WSÁNEĆ Technical Advisory Committee. In October CRD and HRMG met with the WSÁNEĆ Technical Advisory Committee and presented the Technical Assessment

Report and the CRD's Biosolids Beneficial Use Strategy. The Environmental Impact Study and Environmental Protection Plan prepared for the RTF were also discussed.

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

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

- Residuals Treatment Facility (Hartland): Blasting Notice (October 1, 2019) (Appendix A);
- Traffic Advisory: Interurban, Marigold and Grange Roads (October 9, 2019) (Appendix B);
- Residual Solids Conveyance Line: Tillicum Bridge Lane Closure (October 10, 2019) (Appendix C); and
- Clover Point Pump Station: Overnight Work (October 22, 2019) (Appendix D).

The Project Team hand delivered three of these construction notices in the community: Residuals Treatment Facility: Blasting Notice (33 residences near Hartland Landfill); Residual Solids Conveyance Line Tillicum Bridge Lane Closure (24 residences and businesses near the Tillicum Bridge); and Clover Point Pump Station: Overnight Work (92 residences along Dallas Road and Hollywood Crescent). The construction notice for Interurban, Marigold and Grange Roads was issued as a Traffic Advisory to local schools and media outlets in the region.

Project Website

Over the reporting period, the Project website, wastewaterproject.ca, was updated with information about the Project. Four construction notices were posted. The photo gallery section was updated with additional photos. A map showing the progress of construction along the Residual Solids Conveyance Line (Appendix E) was updated.

The CRD's Twitter account was used to provide Project information to the public, including notifications about anticipated delays and single lane alternating traffic along construction corridors.

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;
- School District #61 Staff; and

- Township of Esquimalt Liaison Committee;

Public Inquiries

Table 5 – Project Inquiries- October 2019

Inquiry Source	Contacts for October
Information phone line inquiries	23
Email inquiries responded to	22

Key themes of the public inquiries were as follows:

- questions about traffic management and timelines on Interurban Road;
- interest regarding construction schedule and school drop-off time considerations for work around Burnside and Grange roads; and
- inquiries about timing and extent of restoration along the Residual Solids Conveyance Line and Clover Forcemain.

2.5 Resolutions from Other Governments

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

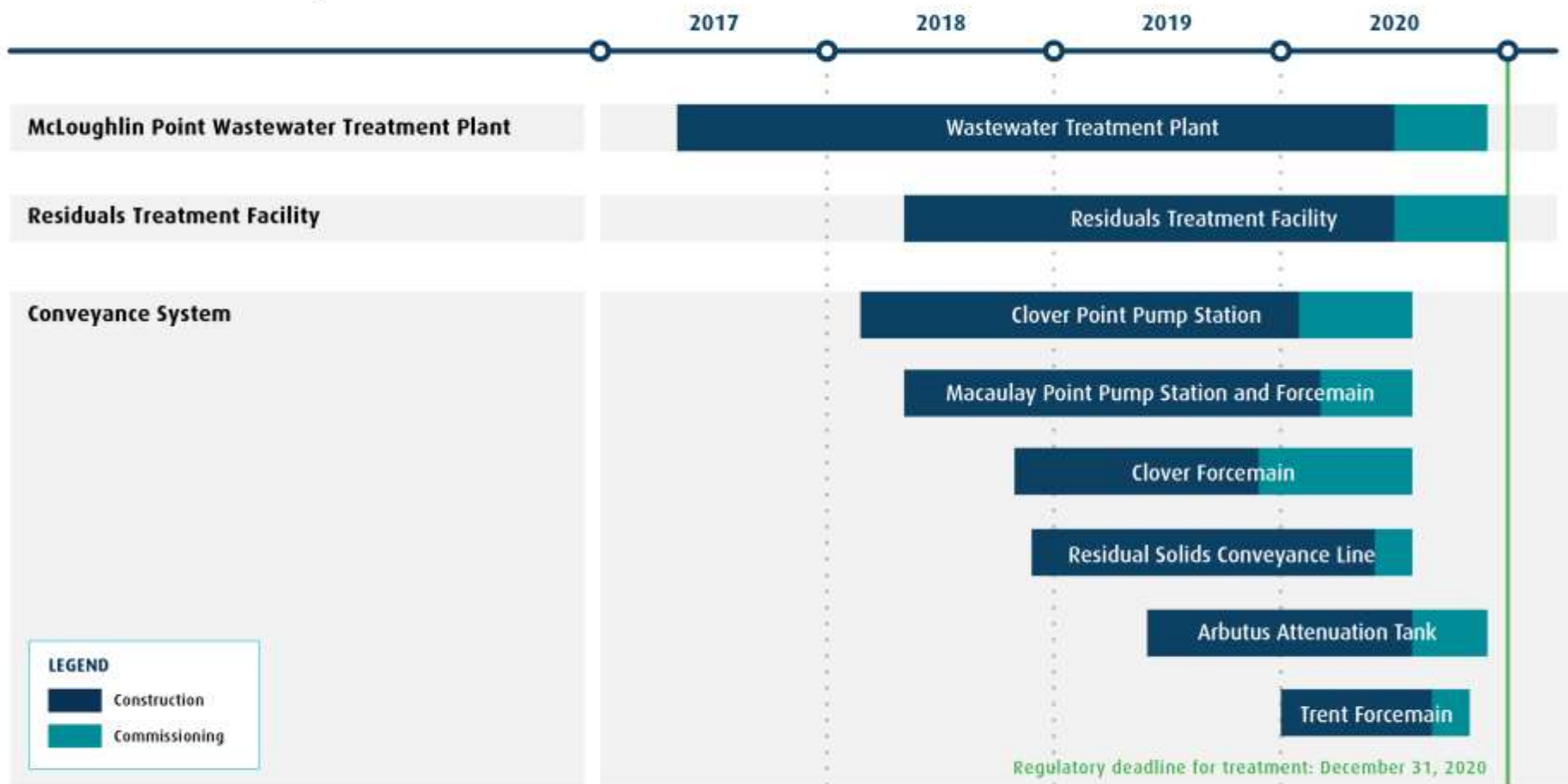
2.6 Schedule

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 summarised in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule has been updated from that shown in the Project's Q3 2019 Quarterly Report to delineate between construction and commissioning activities. The schedule 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 (November) are outlined below by function

Safety

- “Shift into Winter” program for the Project team;
- attend CRD corporate occupational health and safety coordination committee meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- office/site inspections with contractors and CRD corporate at all active sites;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

Environment and Regulatory Management

- CRD, Stantec, HRP and Lorax to meet with ENV to present results of McLoughlin Point WWTP outfall dispersion modelling and discuss ENV review of Outfall EIS and Overflow EIS.

First Nations

- ongoing engagement with First Nations; and
- distribute Call to Artists for design of architectural shroud for Clover Point pump station exhaust stack.

Stakeholder Engagement

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

Cost Management and Forecast

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

Construction

McLoughlin Point

- install perimeter water line for hydrants;
- install pig receiver piping and harbour crossing connection;
- install sewage influent piping;
- complete construction of tsunami wall 5;
- construct odour control envelope wall and roof slab;
- install stairs in odour control;
- install carbon filters 1 and 2 and carbon filter tank 1;
- continue construction of walls and slabs in the primary area envelope;
- install supports for Suez walkways;
- install process mechanical equipment in Densadeg 1 and 2;
- continue MBBR channel walls and slabs;

- install ducting, exhaust fans and air handling units in secondary treatment;
- continue installation of electrical cable trays, and power and control cables;
- install switchgear, harmonic filters, PLC and transformers in Blower room;
- install process mechanical in Heat Recovery Room;
- continue tertiary area walls and slabs;
- install process mechanical equipment in Pump Rooms level 1 and 2;
- install process electrical equipment in the electrical room;
- install Operations & Maintenance (O&M) building elevator;
- install O&M building green roofing;
- install O&M building envelope and interior finishes; and
- complete marine outfall.

Clover Point Pump Station

- install 1200mm sanitary forcemain;
- commence installation of Pig launching chamber;
- install 1500mm gravity sewer;
- modify overflow and inlet channels for connection of new 1500mm gravity sewer;
- install pipe supports in pump room;
- install doors and hardware on new pump station;
- continue installation of process mechanical equipment in pump room;
- install discharge, backwash and surge piping; and
- install HVAC equipment and ducting.

Macaulay Point Pump Station

- install transformer and fuel tank pad;
- commence construction of walls and roof;
- install sanitary pumps and piping;
- install vortex grit removal equipment;
- install odour control unit and associated ducting and fans;
- install cranes in Odour Control, Bin and Pump rooms;
- install cable trays in pump, generator and electrical rooms;
- install tie-in of Macaulay forcemain at Peter Street; and
- continue restoration of Anson and Bewdley Streets.

Residuals Treatment Facility

- complete piping installation in Digester 1;
- continue piping installation in Digester 2;
- commence concrete foundation for Digester 3;
- commence structural steel erection at Digester Building;
- continue foundation construction of Operations Building;
- continue piping installation at Other Municipal Solids Receiving Facility;
- roofing installation, and cladding installation for the Residuals Handling Building;
- commence masonry and cladding at the Dryer Building;
- continue mechanical and building system installations for Residuals Handling Building;
- continue equipment installation in Dryer Building;
- continue building construction of Equalization Building;
- commence construction of Water Pump House;
- complete erection of Residual Effluent Holding Tank; and
- continue erection of Water Storage Tank.

Clover Forcemain

- final connection of Clover Forcemain at the Harbour Crossing;
- road reconstruction Ogden Point to Niagara St;
- road reconstruction Douglas St to Camas Circle;
- road/cycle track construction Paddon Ave to Olympia Ave;
- road/cycle track construction Olympia Ave to Douglas St;
- road/cycle track construction Montreal St to Dock St;
- road/cycle track construction Douglas St West to Douglas St East; and
- road/cycle track construction Government St to Paddon Ave.

Residual Solids Conveyance Line

- continue RSCL installation at Craigflower Rd to Arm St to Selkirk Ave to Tillicum Rd;
- commence RSCL installation at Tillicum Rd to Tillicum bridge;
- continue RSCL installation at Grange Rd from Highway 1 to Burnside Rd;
- continue installation of RSCL on Interurban Rd from Grange Rd to Wilkinson Rd;
- continue installation of RSCL on Interurban Rd from Hector Rd to Wilkinson Rd;
- continue installation of line, drain and air valves; and
- continue restoration of roads and trails as required.

Residual Solids Pump Stations and Bridge Crossings (RSCL 200)

- install CRL on Marigold Street from Colquitz Creek to Interurban Rd;
- install CRL on Interurban Rd from Grange Rd to Marigold Rd;
- commence installation of RTF control valve chamber;
- continue installation of Tillicum bridge supports and piping;
- commence installation of scaffolding for Admirals Bridge crossings;
- install pump station #4 process mechanical and electrical;
- install pump station #3 substructure, retaining wall and water service;
- continue with the RTF watermain installation; and
- continue with rock blasting / removal for new Hartland Reservoir.

Arbutus Attenuation Tank (AAT)

- ongoing operation for drilling of secant piles;
- continue ongoing concrete pour operations for reinforced and plain secant piles;
- commence installation of temporary bypass system;
- commence installation of permanent yard piping and manholes;
- decommission existing overflow system infrastructure within tank footprint; and
- excavate remainder of tank footprint to facilitate additional secant pile construction.

Procurement

Trent Forcemain

- complete tender evaluation.

2.6.2 60 day look ahead

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

Safety

- promotion of Traffic Awareness of the Project;
- safety notice developed for “Heading into the holidays” and site safety awareness;
- attend CRD corporate occupational health and safety coordination committee meeting;
- host Prime Contractor Safety Coordination Meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- prime contractor project safety meeting with Project safety representatives;
- office/site inspections with contractors and CRD corporate at all active sites;
- prime contractor project safety meeting with Project safety representatives;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

Environment and Regulatory Management

- CRD, Stantec and HRP to meet with ENV to discuss ENV review of Outfall EIS and Overflow EIS.

First Nations

- Ongoing engagement with First Nations.

Stakeholder Engagement

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

Cost Management and Forecast

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

Construction

McLoughlin Point

- form and pour planter wall 1;
- form and pour tsunami wall 6;
- install structural steel curtain wall, stairs, glazing, roofing system, plumbing drains and sprinklers and air handling units in Primary Odour Control;
- install fans, ducting and dampers in Secondary Odour Control;
- hydro test Densadeg 2 and 3 tanks;
- install HVAC and air handling units in screen room and south pump room;
- install process mechanical in Densadeg 2 and 3, Dirty Backwash, BAF and BAF gallery;
- install electrical cable trays and pull cables throughout;

- install BAF tank covers;
- continue was walls and suspended slabs in Tertiary area; and
- continue with building envelope, steel stud framing, and insulation and CMU masonry walls in the O & M building.

Clover Point Pump Station

- commence installation of new discharge piping;
- commence removal of 4 existing pumps and header;
- install pig launching chamber;
- complete installation of 1500 gravity sewer;
- complete tie-in to new inlet channel;
- reinstate seawall walkway;
- install doors and louvers;
- complete termination of power cables and instrumentation and control cables; and
- tie into BC Hydro

Macaulay Point Pump Station

- excavate for twin 900 diameter forcemain;
- install incoming 1800 diameter Weolite sanitary line;
- install epoxy line in wet well;
- continue to install cross laminated timber panels (CLT) for walls and roof;
- continue installation of building envelope;
- install slide gates to influent channel;
- install exhaust and air supply ducting in Odour Control, bin room, screen room, and vestibule;
- install bin room bridge crane, odour control room jib crane and pump room jib crane;
- install substation/transformer;
- commence installation of motor control centre, variable frequency drives, low voltage main switchgear and programmable logic controller;
- install cable tray and cabling throughout; and
- install the remaining 60 meters of Macaulay forcemain on Vaughan Street to the pump station.

Residuals Treatment Facility

- complete piping installation in Digester 2;
- commence tank erection for Digester 3;
- commence structural steel erection at Digester Building;
- commence piping installation in the Digested Sludge Storage Tank and Residual Effluent Holding Tank;
- continue structure construction of Operations Building;
- continue piping installation at Other Municipal Solids Receiving Facility;
- continue cladding, process piping, and building systems installations at the Residuals Handling Building;
- continue masonry, building systems, and cladding at the Dryer Building;
- continue equipment and electrical installation at Dryer Building;
- commence process and electrical work at Equalization Building;
- continue construction of Water Pump House; and

- commence equipment installation at Odour Control Area.

Clover Forcemain

- continue with road restoration;
- continue with Road/Cycle track construction;
- complete Montreal Street upgrades; and
- complete Boyd Street remediation.

Residual Solids Conveyance Line (RSCL 100)

- install RSCL on Tillicum Road from Selkirk Ave to Tillicum Bridge;
- install RSCL on Interurban Road from Grange Road to Charlton Road;
- continue installation of drain valves and line valves; and
- continue with road restoration

Residual Solids Pump Stations and Bridge Crossings (RSCL 200)

- complete installation of RSCL from Marigold Road to Grange Road;
- continue with installation of pipe hangers and pipes at Tillicum Bridge;
- install scaffolding on Admirals Bridge;
- commence installation of pipe hangers and pipe on Admirals Bridge;
- complete electrical connections at Pump Station 3;
- install submersible sewage pump at Pump Station 3;
- complete back fill and site grading at Pump Station 3;
- complete retaining wall at Pump station 3;
- install process Mechanical at Pump Station 2;
- install submersible sewage pump at Pump Station 2;
- install wet well at Pump Station 1; and
- continue reservoir construction and watermain installation at Hartland site

Arbutus Attenuation Tank (AAT)

- complete drilling operation for secant piles;
- complete concrete pour operations for reinforced and plain secant piles;
- complete installation of temporary bypass system and temporary flow monitoring instrumentation;
- continue installation of permanent yard piping and manholes; and
- commence removal of decommissioned yard piping outside of tank footprint.

Procurement

Trent Forcemain

- contract execution

2.7 Cost Management and Forecast

The monthly cost report for October is attached as Appendix F. The cost report summarizes Project expenditures and commitments by the three Project Components and the major cost centres common to the Project Components.

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 \$1.1 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 \$100k were made over the reporting period. 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
Contingency and Program Reserve (in Control Budget)		\$ 69,318,051
Contingency and Program Reserve Draws to September 30, 2019		\$ (56,838,429)
Contingency and Program Reserve addition (May 2019)		\$ 10,000,000
Contingency and Program Reserve balance as at September 30, 2019		\$ 22,479,622
IT and Server Equipment	Oct-19	\$ (22,101)
Marine Environmental Impact Study	Oct-19	\$ (78,186)
WWTP Total Draw		\$ (100,287)
RTF Total Draw		\$ -
Conveyance Total Draw		\$ -
PMO Total Draw		\$ -
BC Hydro Total Draw		\$ -
WTP Program Reserve Draw		\$ -
Contingency and Program Reserve draws in the reporting period		\$ (100,287)
Contingency and Program Reserve balance as at October 31, 2019		\$ 22,379,335

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	\$12.1M	\$83.4M
Government of Canada (Green Infrastructure Fund)	\$50M	\$2.2M	\$27.7M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
Federation of Canadian Municipalities	\$346K	-	-
TOTAL	\$459.3M	\$14.3M	\$111.1M

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 Q3 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
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.	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. A work plan and schedule have been developed and the Project Team, MOE and relevant contractors will continue to meet regularly to track progress and discuss issues. MWR Registration application submitted to the Ministry of Environment in September 2019. The Ministry will consult with First Nations as part of their approval process. The Ministry of Environment considers the Wastewater Treatment Project to be a priority and is committed to approving the MWR Registration in time for commissioning. Additionally, the Ministry of Environment will specifically address water quality during commissioning in the approval.	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
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
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
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	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 have been undertaken for the Trent Forcemain as part of the detailed design process.	L	No Change
Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.	Cost of conveyance contracts higher than estimated and budgeted.	There is only one conveyance contract remaining to be procured (the Trent Forcemain). It will be competitively-procured, as has been done for all of the construction contracts. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money, and in order to identify any opportunities where savings could be realized to partially-offset escalation.	M	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).	There is only one conveyance contract remaining to be procured (the Trent Forcemain), for which the Project Team recently refreshed the cost estimate. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money.	M	No change

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: work on BAF Mono Floor, fire suppression work in Operations and Maintenance (O&M) building; commenced installation of Lamella plate settling equipment in Primary Clarifier No. 1; and progression of building envelope on Electrical, Blower and Heat Recovery buildings.

Construction

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

- installation of the Macaulay Forcemain progressed from Patricia to Victoria View;
- bypass line excavation and installation progressed to valve slab;
- BAF gallery pipe supports and cable tray install continued;
- continued work on BAF Mono Floor with all but slabs 7, 9 and 12 poured;
- moving bed bioreactor infill work started;
- Odour Control room walls started;
- commenced north apron work with slab and pump room walls;
- completed installation of Switchgear and Transformer slabs;
- commenced installation of Lamella1 equipment;
- coating of dirty backwash walls completed;
- commenced staging of equipment in Tertiary including setting of fibre reinforced plastic chemical tanks;
- started suspended slab work in Fine Screen room;
- clean water tank roof slab started;
- glazing installation started in O&M building;
- fire suppression work started in O&M building; and
- building envelope work progressing on Electrical, Blower and Heat Recover Buildings;

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



Figure 2– McLoughlin Point Wastewater Treatment Plant- Installing exterior sheathing on Electrical Room



Figure 3– McLoughlin Point Wastewater Treatment Plant- Excavation of Macaulay forcemain pipe trench on Victoria View Road

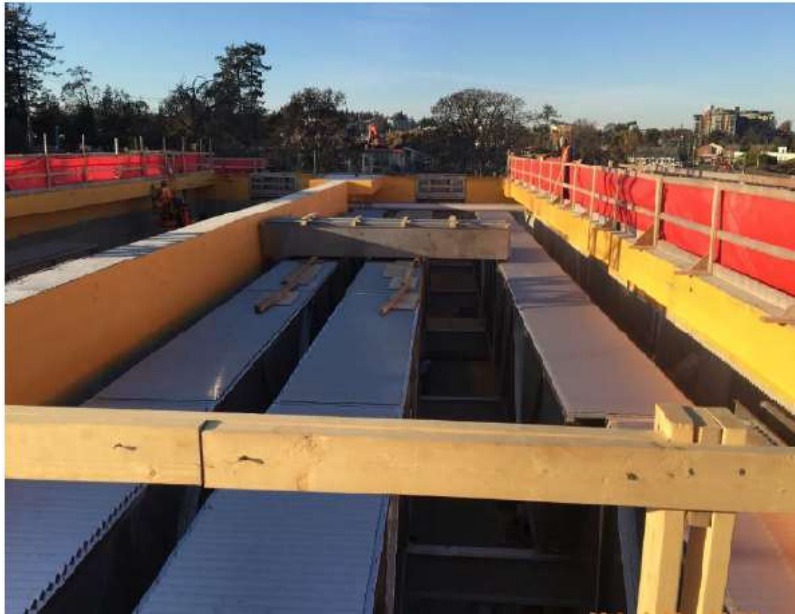


Figure 4– McLoughlin Point Wastewater Treatment Plant- Lamella 1 plate rack installation



Figure 5– McLoughlin Point Wastewater Treatment Plant-Installing reinforcing steel in Dirty Backwash slab



Figure 6– McLoughlin Point Wastewater Treatment Plant- Installing Monofloor soffit in BAF cell 3

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: continuing pipe installation for Digester 2 and Other Municipal Solids receiving facility; continuing construction of the potable water storage tank; enclosing the Residuals Handling Building and Dryer Building, mechanical and equipment installation in the Residual Handling Building and Dryer Building; and completion of tank erection of the Residuals Solids Tanks 1 and 2.

Construction

Key construction activities in progress or completed by HRMG during the reporting period included:

- pipe installation ongoing for Digester 2;
- commence concrete base for Digester 3;
- structural steel erection at Digester Building;
- commenced foundation preparation for Operations Building;
- continue piping installation at Other Municipal Solids Receiving Facility;
- continued exterior cladding, masonry walls, process piping, and electrical cable tray installation for the Residuals Handling Building;
- continued tank erection for Residuals Effluent Tank;
- completed tank erection Residuals Solids Tank 1 and 2;
- commenced structural steel erection of Equalization Building;
- continued construction of Water Pump House; and
- commenced erection of Water Storage Tank.

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



Figure 7– Residuals Treatment Facility- Installation of insulated metal cladding support members on Digester Equipment Building.



Figure 8– Residuals Treatment Facility- Installation of flashing around wall penetrations on east side of Residuals Handling Building



Figure 9– Residuals Treatment Facility- Site overview showing Residuals Solids Tanks, Effluent Tank, Water Storage Tank, Equalization Building and Water Pump House.



Figure 10– Residuals Treatment Facility- Digesters #1 and #2, Digested Solids Storage Tank and Digester Equipment Building.

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: pump and valve installation in the lower pump room; stairways and platforms installed in wet wells; backfill over new structure complete; and modified existing inlet channel to connect to the new storm channel.

Key construction activities in progress or completed by Kenaidan over the reporting period were as follows:

- pumps are being installed in the lower pump room along with discharge pipe and valves;
- Motor Control Centers, and interconnecting cables are being installed;
- the Programmable Logic Control was installed in the electrical room and is being wired;
- cable tray and cable installation is ongoing;
- retaining wall structure work is ongoing;
- public washroom structure is being built;
- stairways and platforms are being installed in the wet wells;
- openings between the existing and new storm inlet channels were cut out;
- backfill over the new structure was completed;
- forcemain work has started; and
- cinder block walls are being installed in the screening room.

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



Figure 11–Clover Point Pump Station- Storm pump.



Figure 12–Clover Point Pump Station- upper pump room.



Figure 13–Clover Point Pump Station- Storm wet well benching.



Figure 14- Clover Pump Station - Public washroom in progress.

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 process piping and lighting circuits in pump room; poured suspended slab and pump room topping; installed shoring for sanitary sewer in preparation for constructing the new diversion chamber and inlet piping; and completed installation of approximately 115m of forcemain (total of 690m installed to October 31, 2019).

Construction:

Key construction activities in progress or completed by Kenaidan over the reporting period were as follows:

- installation of process piping in pump room;
- installation of lighting circuits in pump room;
- poured suspended slab and pump room topping poured at 8.20 m elevation;
- cross laminated timber (CLT) received and staged for installation;
- inlet sewer pipe delivered to site;
- lowered existing vent pipe from diversion chamber to pump station; and
- Macaulay forcemain progress to the corner of Bewdley and Peter streets, providing for a total installed length to the end of October of 690m.

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



Figure 15–Macaulay Point Pump Station- Rock removal between diversion chamber and existing pump station.



Figure 16-Macaulay Point Pump Station- Lowering vent pipe for construction of ramp.

2.9.3.3 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including: successful completion of forcemain pressure testing; paving of the cycle track; road restoration; electrical lighting installation; and watermain lining.

Key construction activities in progress or completed by Windley over the reporting period were as follows:

- cycle track paving and landscaping is ongoing;
- road restoration is ongoing;
- electrical lighting installation ongoing; and
- watermain lining is in progress.

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



Figure 17–Clover Forcemain- Curb and gutter removals and base preparation along Dallas (South Side - Douglas to Government)



Figure 18–Clover Forcemain- Cycle track sub-grade excavation and sub-base & base grade development along corridor at the foot of Douglas.



Figure 19–Clover Forcemain– Electrical conduit installs along cycle track corridor (foot of Douglas.)



Figure 20–Clover Forcemain- New street light base installation at Dallas/Douglas Intersection.

2.9.3.4 Residual Solids Conveyance Line

The RSCL is being delivered through three construction contracts:

- RSCL 100 Residual Solids Pipes;
- RSCL 200 Residual Solids Pump Stations; and
- RSCL 300 Saanich Infrastructure Improvements.

RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities including installation of approximately 700m of pipes at the following locations:

- segment #1: Dominion Road at Belton Ave and Arm Street and Selkirk Ave towards Craigflower Road;
- segment #2: Grange Road north to Interurban Road and Grange Road south to Burnside Road;
- segment #3: Interurban Road south to Pump Station 2; and from Charlton Road to Courtland Ave;
- segment #3: Interurban Road north to Goward Road; and
- segment #4: Interurban Trail final restoration from Wallace Drive to Prospect Lake Road.

Photographs of construction progress over the month of October on the Residual Solids Conveyance Line are shown in Figures 21-24.



Figure 21–Residual Solids Conveyance Line- Backfill and compaction Grange Rd at Interurban Rd.



Figure 22-Residual Solids Conveyance Line- Asphalt over cut being completed on Interurban Rd.



Figure 23-Residual Solids Conveyance Line- Placing concrete around manhole grade rings and frame on Selkirk Ave



Figure 24–Residual Solids Conveyance Line- Backfill and compaction of highway crossing phase 3 pipe sleeves.

RSCL 200 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: erection of scaffolding at the Tillicum Bridge; and ongoing installation of watermain at Hartland.

Key construction activities in progress or completed by Knappett over the reporting period were as follows:

- Colquitz Creek crossing was completed inclusive of spawning gravel placement and site restoration;
- Pump station #1 rock hammering rock for the wet well and Saanich watermain relocation commenced;
- Pump station #2 valve chamber was delivered to site and the wet well was grouted;
- Pump station #3 wet well barrel was replaced and line valve meter and pigging chamber were cored;
- Tillicum bridge scaffolding was erected and pipe hanger layout was completed; and
- Hartland watermain installation continued and reached the gas plant and drilling and blasting commenced at the reservoir site.

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



Figure 25–Residual Solids Pump Stations and Bridge Crossings – Watermain trench backfilled west of gas plant.



Figure 26 –Residual Solids Pump Stations and Bridge Crossings- Installed pre-cast valve chamber at Pump Station 3



Figure 27–Residual Solids Pump Stations and Bridge Crossings – Commence pipe hanger installation at Tillicum Bridge.

2.9.3.5 Arbutus Attenuation Tank

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; developing a bypass pumping plan for temporary flows during construction; and coordination with third parties for site water and power.

Key construction activities in progress or completed by NAC over the reporting period were as follows:

- ongoing drilling of secant piles around the perimeter of the tank;
- continue concrete pour operations for reinforced and plain secant piles;
- commence installation of temporary bypass system;
- commence installation of permanent yard piping and manholes;
- decommission existing overflow system infrastructure within tank footprint; and
- excavation of remainder of tank footprint to facilitate additional secant pile construction.

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



Figure 28–Arbutus Attenuation Tank- Installation of Secant Piles.



Figure 29– Arbutus Attenuation Tank –Site overview.

2.9.3.6 Trent Forcemain

The Project Team, with Stantec (as the design consultant for the Trent Forcemain) progressed work through the procurement phase, including responding to tender inquiries and issuing addenda, and receiving tenders.

Appendix A- Residuals Treatment Facility (Hartland): Blasting Notice (October 1, 2019)



October 1, 2019

Residuals Treatment Facility (Hartland): Blasting Notice

As part of construction for the Residuals Treatment Facility, the Wastewater Treatment Project is replacing the Hartland Reservoir to increase the storage volume and improve pumping capacity. Controlled blasting and excavation is required and is anticipated to take place over five days in early October.

What to Expect

- Up to four blasts per day.
- Noise and vibrations are expected during this work.
- No traffic impacts are anticipated.

Blasting Procedure

- All blasts will be covered with blasting mats.
- Blasting signs and personnel will be posted at access points on the construction site boundary to prevent entry into the blast area.
- Warning signals will be used as follows:
 - 12 short whistles at one second intervals followed by a two minute pause
 - Blast will be detonated
 - One long whistle signals all is clear
- Each blast is monitored for vibration with a seismic device.
- If you have any questions or concerns about blasting or the Project, please contact the Project Team at wastewater@crd.bc.ca or 1.844.815.6132.

Work Hours

- Blasting will occur between 7:00 a.m. to 7:00 p.m.

About the Wastewater Treatment Project

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



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix B- Traffic Advisory: Interurban, Marigold and Grange Roads (October 9, 2019)

October 09, 2019

Traffic Advisory: Interurban, Marigold and Grange Roads

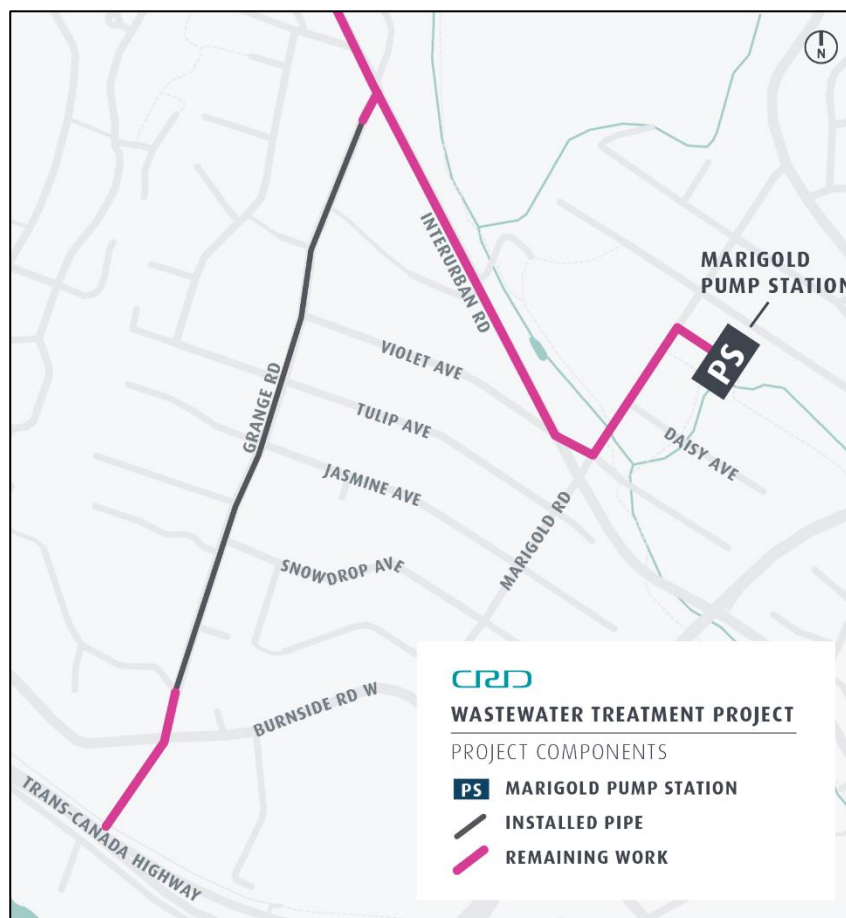
As part of the Wastewater Treatment Project, construction on Interurban, Marigold, and Grange roads will impact traffic as pipes are installed for the Residual Solids Conveyance Line. This work requires single lane alternating traffic and is anticipated to be complete in January 2020. Please expect traffic delays, especially during the morning and afternoon commutes. We appreciate your patience as this work is being completed.

Work Hours

- Monday to Friday from 7:00 a.m. to 7:00 p.m.
- Occasional Saturday work may be required from 7:00 a.m. to 7:00 p.m.

Traffic Impacts

- There will be single lane alternating traffic in the work zones controlled by flaggers.



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix C- Residual Solids Conveyance Line: Tillicum Bridge Lane Closure (October 10, 2019)



October 10, 2019

Residual Solids Conveyance Line: Tillicum Bridge Lane Closure

As part of the Wastewater Treatment Project, a pipe will be installed under the Tillicum Bridge (see map on reverse). This work is anticipated to start on October 15 and take approximately 6-8 weeks to complete. The remaining pipe installation on Tillicum Road between Selkirk and Vincent avenues is scheduled to take place later in the fall.

What to Expect

- Scaffolding will be erected on the side of the bridge and a pipe will be installed under the bridge.
- Noise associated with this work includes construction machinery and truck back-up beepers.

Traffic Impacts

- Southbound traffic will be reduced to one lane between 9:00 a.m. and 3:00 p.m.
- Northbound traffic will retain two lanes.
- West sidewalk will be closed with a detour and signage in place.
- Pedestrian access will be maintained on the east side of Tillicum Bridge.
- The work zone will be controlled by flaggers.

Work Hours

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

Background

Construction of the Residual Solids Conveyance Line is progressing well with over 70% of the pipes installed. There are multiple crews working along the 19km alignment. Construction of the conveyance line is anticipated to be complete in spring 2020. A regularly-updated progress map can be found at wastewaterproject.ca.

About the Wastewater Treatment Project

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

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Tillicum Bridge Crossing



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix D- Clover Point Pump Station: Overnight Work (October 22, 2019)



October 22, 2019

Clover Point Pump Station: Overnight Work

Construction of the Clover Point Pump Station requires some overnight work to connect portions of the expanded pump station to the existing pump station. This work is scheduled to begin today and take approximately three weeks to complete.

What to Expect

- Noise associated with construction will be ongoing overnight.
 - For a portion of this work, diesel-powered pumping units located on the Dallas Road Waterfront Trail close to the existing pump station will be in operation. The pumps are equipped with acoustic enclosures to reduce noise.
 - Construction equipment will be in operation at the pump station site below the embankment.
- Flood lights will be used to safely illuminate the work area.
- Increased short-term odour may occur during this work.

Work Hours

- Construction is required overnight for this phase of work.
- Some of this work is weather dependent which may affect the duration of construction.
- Once this work is complete, normal work hours will resume Monday to Friday from 7:00 a.m. to 7:00 p.m. and Saturday from 10:00 a.m. to 7:00 p.m.

Traffic Impacts

- There will be no traffic impacts.
- The closure of the Dallas Road Waterfront Trail between the Clover Point Pump Station and the crosswalk at Memorial Crescent remains in effect until January 2020. The next stage of work will include installing a pipe along the pathway.

Construction at Clover Point is anticipated to be complete by mid 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

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



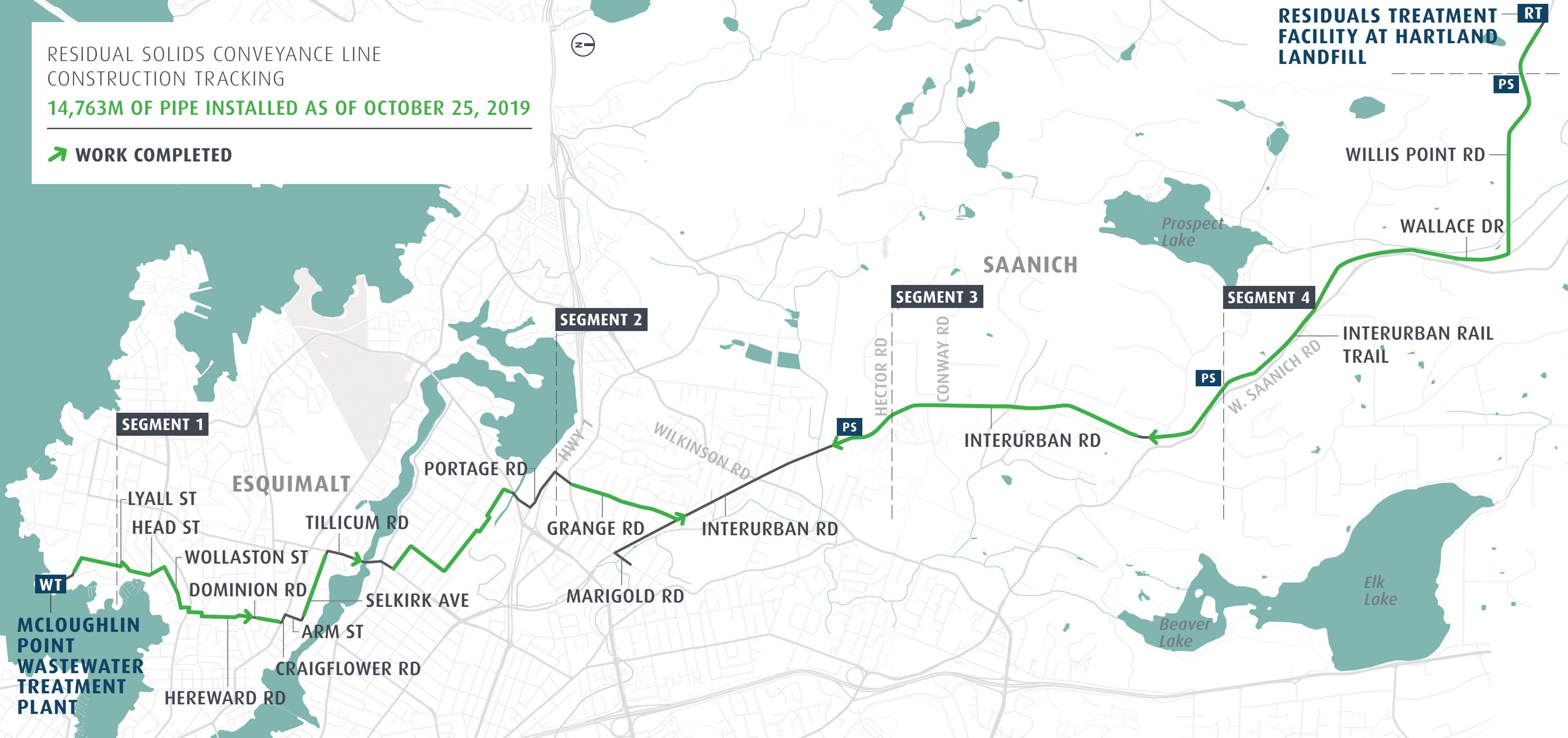
Website
wastewaterproject.ca

Appendix E- Residual Solids Conveyance Line Progress Map

RESIDUAL SOLIDS CONVEYANCE LINE
CONSTRUCTION TRACKING

14,763M OF PIPE INSTALLED AS OF OCTOBER 25, 2019

➔ WORK COMPLETED



Appendix F- Monthly Cost Report (October)



**REPORT TO CORE AREA WASTEWATER TREATMENT PROJECT BOARD
MEETING OF THURSDAY, JANUARY 9, 2020**

SUBJECT Wastewater Treatment Project November 2019 Monthly Report

ISSUE

To provide the Core Area Wastewater Treatment Project Board with the Wastewater Treatment Project November 2019 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 November 2019 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 November 2019 Monthly Report', be received for information and forwarded to the Core Area Liquid Waste Management Committee and CRD Board for information.



Elizabeth Scott, Deputy Project Director
Wastewater Treatment Project



Dave Clancy, Project Director
Wastewater Treatment Project
Concurrence

Attachments: 1

Appendix A: Wastewater Treatment Project November 2019 Monthly Report

ES:er



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

CRD Wastewater Treatment Project

Monthly Report

Reporting Period: November 2019

TABLE OF CONTENTS

1	<i>Executive Summary.....</i>	<i>2</i>
1.1	Introduction	2
1.2	Dashboard	3
2	<i>Wastewater Treatment Project Progress</i>	<i>5</i>
2.1	Safety	5
2.2	Environment and Regulatory Management.....	7
2.2.1	Environment	7
2.2.2	Regulatory Management	8
2.3	First Nations	8
2.4	Stakeholder Engagement	9
2.5	Resolutions from Other Governments	10
2.6	Schedule	10
2.6.1	30 day look ahead	12
2.6.2	60 day look ahead	15
2.7	Cost Management and Forecast	17
2.7.1	Commitments	18
2.7.2	Expenses and Invoicing	18
2.7.3	Contingency and Program Reserves	18
2.7.4	Project Funding.....	19
2.8	Key Risks and issues	20
2.9	Status (Engineering, Procurement and Construction)	26
2.9.1	Wastewater Treatment Plant (McLoughlin Point WWTP)	26
2.9.2	Residuals Treatment Facility	30
2.9.3	Conveyance System	33
	<i>Appendix A– Residual Solids Conveyance Line: Admirals Bridge Work (November 15, 2019)</i>	<i>47</i>
	<i>Appendix B– Arbutus Attenuation Tank: Overnight Bypass Pumping (November 19, 2019).....</i>	<i>48</i>
	<i>Appendix C– Traffic Advisory: 24-Hour Single Lane Traffic on Interurban Road (November 19, 2019) ..</i>	<i>49</i>
	<i>Appendix D– Residual Solids Conveyance Line Map (November 15, 2019)</i>	<i>50</i>
	<i>Appendix E– Monthly Cost Report (November).....</i>	<i>51</i>

1 Executive Summary

1.1 Introduction

This monthly report covers the reporting period of November 2019 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: progressing concrete work in the Process Building, receiving delivery of large process equipment, progressing O&M Building exterior walls and interior finishes, and progressing off-site utility installation.

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: completion of the Digested Solids Storage Tank; commencement of the foundation work and starter panels for digester 3; completion of structural steel erection and commencement of process piping, electrical, masonry and heating, ventilation, and air conditioning (HVAC) in the Digester building; completion of structural steel and commencement of roofing at the Water pump house and the Equalization building; and commence slope stabilization work at the south slope.

The Conveyance System is being 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 construction activities over the reporting period including: forming of curved retaining wall; installation of surge relief and domestic water piping; installation of lower sanitary and storm pump discharge spools; and continued installation of sanitary forcemain and pigging chamber.
- Macaulay Point Pump Station and Forcemain: Kenaidan Contracting Limited (“Kenaidan” as the Design-Build Contractor) progressed construction activities over the reporting period including: commenced installation of cross laminated timber panels, installation of sanitary pipe, and backfilling around building exterior; and completed installation of approximately 10m of forcemain (total of 700m installed to November 30, 2019).

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: completion of final tie-in to the Harbour Crossing pipe in transition chamber; completion of watermain lining; and ongoing cycle track paving, landscaping and road restoration.
- 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 the Residual Solids Pipes) continued construction activities including installation of approximately 730m of pipes.
 - RSCL 200 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: erection of scaffolding at the Admirals Bridge; watermain installation at Pump Station 1; and completed installation of watermain at Hartland.
- 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; completing bypass pumping for tie-in works during construction; commenced installation of permanent yard piping and manholes; and decommissioned existing overflow system infrastructure within tank footprint.
- The Project Team, with Stantec (as the design consultant for the Trent Forcemain) selected the tenderer, in accordance with the Invitation to Tender, and initiated contract award.

























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 one recordable safety incident occurred and the total recordable incident frequency increased from 1.2 at the end of the last reporting period to 1.6. 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. 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*.					One recordable incident 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.					There were no environmental incidents in the period
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. 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: Macaulay Point Pump Station, Clover Point Pump Station, McLoughlin Point WWTP, RTF, Clover Forcemain, Residuals Solids Pump Stations & Bridge Crossing, Residuals Solids Forcemain and Arbutus Attenuation Tank.

Over the reporting period 12 safety incidents occurred in total, comprising: one lost time recordable, two medical aid and nine report-only incidents, as summarized in Table 2.

Table 2: Safety Incidents over the Reporting Period

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
November 1, 2019	McLoughlin Pt WWTP	Medical Aid (Modified Duty)	Worker rolled ankles while descending stairs.	While trying to take the weight off of his right ankle the worker ended up rolling his left ankle as well.	Worker has been placed on modified duty until ankles are completely healed Tool- box talk reminding workers to use handrail while ascending and descending stairs.
November 4, 2019	RSCL200	Report Only	Worker was observed smoking on the Hartland Site.	This is in contravention to site safety rules at the landfill. The worker was removed from site.	Tool-box talk with crew reviewed the landfill site rules and reinforced compliance with all including the smoking policy.
November 5, 2019	RSCL200	Report Only	Low voltage electrical conduit struck while excavating.	Conduit was not identified on any as-built drawings. The electrical conduit was damaged and repairs undertaken by CRD Hartland staff. There were no injuries to any personnel.	Utility locates documents updated to reflect the conduit.
November 7, 2019	RTF	Report Only	Scissor lift working in a congested area struck a cable tray while lowering.	Scissor lift was removed from service for inspection and repair.	Any further work requiring a scissor lift in that area will require a spotter present at all times.
November 8, 2019	McLoughlin Pt WWTP	Report Only	Worker while climbing a ladder experienced discomfort in their hip.	Worker reported to Medical aid for an assessment but no treatment rendered.	Worker was reminded to be aware of their surroundings.
November 12, 2019	RSCL200	Medical Aid	Employee injured hand while installing rebar.	Employee was assessed on site by the First Aid Attendant and sent to hospital where he received 3 stitches.	Tool-box talk held to remind crew to wear gloves, be mindful of hand positioning and the use of the proper equipment for the task.
November 19, 2019	RTF	Report Only	While moving a telescopic lift the operator struck a job box.	Minor damage to job box, no injuries to workers.	Tool-box talk to remind crews to use a spotter when moving equipment in congested areas.

Date	Work Site	Incident Type	Description	Outcome	Corrective Action Taken
November 25, 2019	RTF	Report Only	Excavator contacted an overhead telecommunication line.	Shaw was contacted and line reinstated.	Tool-box talk discussed working in close proximity to utilities.
November 27, 2019	McLoughlin Pt WWTP	Lost Time Recordable	While dislodging a chain on an excavator a worker's hardhat was contacted by the bucket.	Worker stated he was fine and continued to work. After leaving the work place he attended a hospital where he was assessed by a doctor. He has not returned to work.	Tool-box talk regarding the operations of equipment when workers are in close proximity. Excavator was inspected to ensure proper operations of controls.
November 28, 2019	RSCL200	Report Only	Careless driving by a subcontractor.	A worker was witnessed overtaking on a double solid line in a dangerous manner on Hartland Ave.	Worker was spoken to in the morning before the start of their shift and given a verbal warning.
November 29, 2019	Clover Forcemain	Report Only	A Traffic Control Person was struck on Dallas Road by a work van that proceeded to drive through a controlled stop.	TCP sustained minor bruising but did not need medical attention.	Tool-box talk reviewing safe traffic control practices and staffing assignments at busy intersections was held.
November 29, 2019	RSCL	Report Only	Telus overhead service line was struck by an excavator.	Excavator was equipped with an overhead skylight however visor was stuck closed at the time restricting operator's vision.	Crew will ensure that low overhead lines are marked with surveyor tape. Machine was returned to the yard where the skylight was inspected and repaired.

Key safety activities conducted during November 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;
- participated in IWS's Safety Day;
- monthly Incident Investigation reviews;
- reviewed site specific safety plans and high risk tasks;
- daily site safety audits during work at Colquitz creek;
- WTP Safety Manager and/or Construction Manager conducting regular site inspections at all active Project work sites;
- circulated a Safety Notice Recall for Self-Retracting Lifelines (SRL's);
- circulated a Safety Notice Recall for defective Crosby Shackles; and
- "Shift into Winter" program completed by WTP staff that are using CRD vehicles.

Table 3: WTP Safety Information

	Reporting Period (November 2019)	Project Totals
Person Hours		
PMO	3 357	124 498
Project Contractor	102 290	1 265 299
Total Person Hours	105 647	1 389 797
PMO	31	
Project Contractors (& Project Consultants) working on Project Sites	588	
Total Number of Employees	619	
Near Miss Reports	0	36
High Potential Near Miss Reports	0	5
Report Only	9	110
First Aid	0	31
Medical Aid	2	5
Medical Aid (Modified Duty)	0	2
Lost Time	1	4
Total Recordable Incidents	3	11
		Project Frequency (from January 1, 2017)
First Aid Frequency		4.5
Medical Aid Frequency		1.0
Lost time Frequency		0.6
Total Recordable Incident Rate		1.6

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 November included:

- 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, any environmental risks that were identified by them were corrected at the time of the inspection; and

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 November included:

- The CRD, Lorax Environmental Services (Lorax, the CRD's dispersion modelling consultant), Stantec and HRP met with BC Ministry of Environment and Climate Change Strategy (ENV) to review the results of the marine outfall dispersion modelling. The review resulted in a series of technical questions from ENV about the model and underlying assumptions.

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 October 2019 Monthly Report.

Table 4- Key Permits Status

<i>Permit/Licence</i>	<i>Anticipated Date</i>	<i>Status</i>	<i>Party Responsible for Obtaining Permitting</i>
McLoughlin Point WWTP			
Municipal Wastewater Regulation ("MWR") Registration	Q1 2020	Submitted September 2019	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
Residuals Treatment Facility			
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, Macaulay Point and McLoughlin Point.

Millennia Research (as the Project's archaeological advisor) continued archaeological monitoring of excavations at Clover Point and along the RSCL route with members of local First Nations.

Representatives of the Project Team and the Capital Regional District have been meeting with the WSÁNEĆ Leadership Council to discuss the construction and operation of Wastewater Treatment Project components in WSÁNEĆ Territory. Over the reporting period (November 2019) the CRD and the WSÁNEĆ Leadership Council scheduled a signing ceremony (to be held in December) for a Memorandum of Understanding that will provide \$400,000 of capacity funding and allow this productive engagement to continue. This is an important step in furthering the important relationship between the CRD and the WSÁNEĆ Nation, and is a positive step toward re-establishing WSÁNEĆ decision-making in the region and implementing the recommendations of the CRD's Special Task Force on First Nations Relations. In addition

to providing capacity funding, the Memorandum of Understanding commits the CRD to move toward a negotiated agreement that considers the Project's presence within WSÁNEĆ territory, and engage in further discussions towards an agreement involving the broader relationship between CRD and the WSÁNEĆ Nations that takes into consideration CRD's operations within WSÁNEĆ territory and the recommendations of CRD's First Nations Task Force Final Report as adopted by the Board of the CRD.

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

Two construction notices and a traffic advisory were issued to stakeholders in the reporting period:

- Residual Solids Conveyance Line: Admirals Bridge Work (November 15, 2019) (Appendix A);
- Arbutus Attenuation Tank: Overnight Bypass Pumping (November 19, 2019) (Appendix B); and
- Traffic Advisory: 24-Hour Single Lane Traffic on Interurban Road (November 19, 2019) (Appendix C).

The Project Team hand-delivered the two construction notices in the communities around the respective construction sites: Residual Solids Conveyance Line (79 residences in proximity to the Admirals Bridge) and Arbutus Attenuation Tank (53 residences near Haro Woods). These notices were also circulated to stakeholders via email. The traffic advisory (Appendix C) regarding 24-hour single lane traffic on Interurban Road was issued to local media outlets in the region. As well, a letter regarding construction updates for Peters Street was delivered to 16 residences in Esquimalt.

Project Website

Over the reporting period, the Project website, wastewaterproject.ca, was updated with information about the Project. Two construction notices, one traffic advisory and an updated information sheet were posted. The photo gallery section was updated with additional photos. A map showing the progress of construction along the Residual Solids Conveyance Line (Appendix D) was updated regularly.

The CRD's Twitter account was used to provide Project information to the public, including notifications about construction along the RSCL route and a road closure at Clover Point. A Facebook update regarding anticipated traffic delays along Interurban Road was posted.

Community Meetings

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

- City of Victoria Technical Working Group;
- Department of National Defence;
- District of Saanich Technical Working Group;
- Environment and Climate Change Canada (the Federal Government's Department of Environment) McLoughlin Point WWTP Tour;
- EOCP (Environmental Operators Certification Program) McLoughlin Point WWTP Tour; and
- Township of Esquimalt Liaison Committee.

Public Inquiries

Table 5 – Project Inquiries- November 2019

Inquiry Source	Contacts for November
Information phone line inquiries	27
Email inquiries responded to	16

Key themes of the public inquiries were as follows:

- questions about traffic management and delays on Interurban and Willis Point roads; and
- concerns regarding noise, gravel, trucks and other construction impacts.

2.5 Resolutions from Other Governments

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

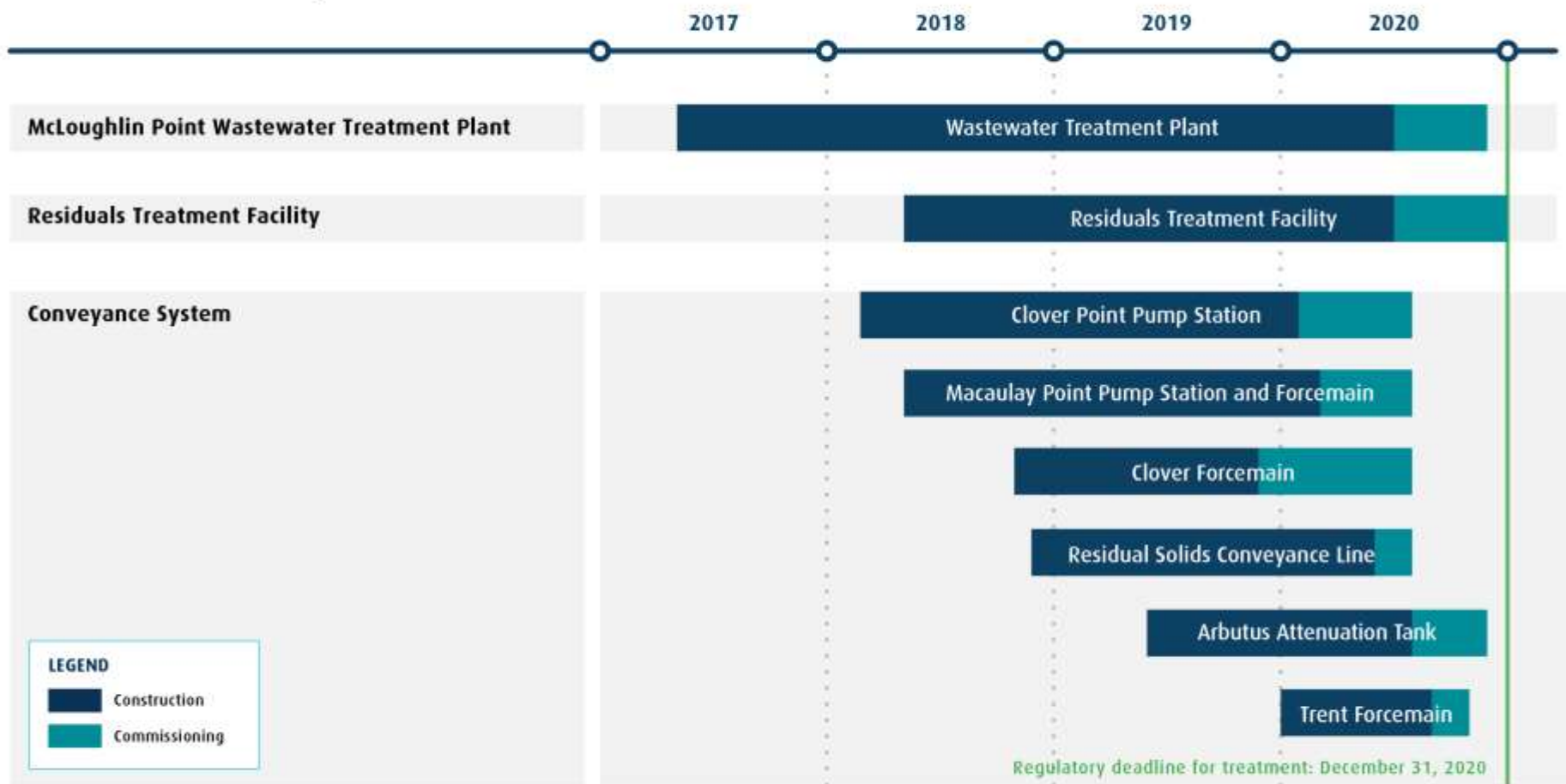
2.6 Schedule

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 summarised in section 2.9.

Figure 1 shows the high-level Project schedule. This schedule is unchanged from that shown in the October 2019 Monthly Report, but 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 (December) are outlined below by function.

Safety

- host Prime Contractor Safety Coordination Meeting focusing on the upcoming holiday and resuming work in the New Year;
- attend CRD corporate occupational health and safety coordination committee meeting
- attend weekly and bi-weekly prime contractor progress meetings;
- office/site inspections with contractors and CRD corporate at all active sites;
- review of any site specific safety plans or high risk tasks;
- review prime contractor document submissions;
- WTP Safety Manager and/or Construction Manager will conduct regular site inspections at all active Project work sites; and
- incident reporting review with prime contractors at active work locations.

Environment and Regulatory Management

- CRD and HRMG to meet with ENV to discuss ENV review of Operational Certificate application for the Residuals Treatment Facility.

First Nations

- Ongoing engagement with First Nations; and
- Participated in the signing ceremony for a Memorandum of Understanding with the WSÁNEĆ Leadership Council (see Section 2.3).

Stakeholder Engagement

- ongoing construction communications with stakeholders;
- distribution of Project Update #8; and
- ongoing community liaison meetings.

Cost Management and Forecast

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

Construction

McLoughlin Point

- completion of major concrete works, dirty back wash piping systems and residual solids storage tank piping systems;
- pump and piping install above dirty back wash tank;
- installation of fine screen room structural steel;
- continue Densadeg installation;
- commence plate settler tank cover installation;
- completion of Moving Bed Biofilm Reactor(MBBR) #2 concrete work;
- commence concrete work in MBBR #1;
- continue Biological Aerated Filter (BAF) equipment installation;
- progress BAF monoflor installation work;

- continue cable tray and cable pulls in BAF gallery;
- continue envelope work on the penthouse buildings;
- progress south BAF structural tie-in work;
- continue disk filter channel walls;
- continue lower level equipment layout and set activities;
- complete masonry walls throughout Operations and Maintenance (O&M) building;
- continue glazing installation on main floor;
- installation of HVAC and plumbing continues throughout the facility;
- commence interior steel stud installation on main level;
- commence installation of roofing membrane;
- continue fire stopping where possible;
- complete installation of pig receiving piping system; and
- continue installation of plant inlet piping and plant bypass piping.

Clover Point Pump Station

- commence installation of new discharge piping;
- commence removal of four existing pumps and header;
- install pig launching chamber;
- complete installation of 1500mm gravity sewer;
- complete tie-in to new inlet channel;
- install doors and louvres;
- complete termination of power cables and instrumentation and control cables; and
- tie into BC Hydro.

Macaulay Point Pump Station

- install incoming 1800 diameter sanitary line;
- install epoxy lining in wet well;
- continue to install cross laminated timber panels (CLT) for walls and roof;
- continue installation of building envelope;
- install slide gates to influent channel;
- install exhaust and air supply ducting in odour control, bin room, screen room, and vestibule;
- install bin room bridge crane, odour control room jib crane and pump room jib crane;
- install substation/transformer;
- commence installation of motor control centre, variable frequency drives, low voltage main switchgear and programmable logic controller;
- install cable tray and cabling throughout; and
- complete the remaining 60 meters of Macaulay forcemain on Vaughan Street to the pump station.

Residuals Treatment Facility

- complete piping and nozzle installation in Digester 2;
- continue tank erection for Digester 3;
- continue cladding, roofing, electrical, piping, and sprinkler work at Digester Building;
- continue piping installation in the Digested Sludge Storage Tank;
- continue construction of Operations Building;
- continue piping installation at Other Municipal Solids Receiving Facility;
- continue electrical cable tray; setting electrical equipment, process piping, HVAC, cabling, sprinklers, OH doors, steel stud & drywall at the Residuals Handling Building;

- continue roofing, building systems, equipment and electrical installation and process piping at the Dryer Building;
- commence cladding at Equalization Building, and Water Pump House; and
- continue equipment installation at Odour Control Area.

Clover Forcemain

- continue with road restoration;
- continue with cycle track construction;
- install curb and gutter at Niagara Street; and
- install curb and gutter on Dallas Road between Government Street and Lewis Street.

Residual Solids Conveyance Line (RSCL 100)

- install RSCL on Tillicum Road from Selkirk Ave to Tillicum Bridge;
- install RSCL on Interurban Road from Grange Road to Charlton Road;
- continue RSCL on Grange Road south of Burnside Road;
- continue installation of drain valves and line valves; and
- continue with road restoration.

Residual Solids Pump Stations and Bridge Crossings (RSCL 200)

- commence installation of RSCL from Marigold Road to Grange Road;
- continue with installation of pipe hangers and pipes at Tillicum Bridge;
- layout pipe hanger locations on Admirals Bridge;
- complete retaining wall at Pump Station 2;
- install wet well at Pump Station 1; and
- continue reservoir construction and watermain installation at Hartland site.

Arbutus Attenuation Tank (AAT)

- complete bypass pumping in order to install two tie-ins on the East Coast Interceptor and one connection on the Finnerty outfall systems;
- continue drilling operation for secant piles;
- continue concrete pour operations for reinforced and plain secant piles;
- decommission and remove existing piping, overflow chamber, and electrical kiosk located within AAT tank footprint;
- complete excavation within the eastern section of the AAT tank footprint to facilitate secant piling; and
- mobilize second drill rig for secant pile installation.

Procurement

Trent Forcemain

- contract execution.

2.6.2 60 day look ahead

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

Safety

- host Prime Contractor Safety Coordination Meeting;
- attend weekly and bi-weekly prime contractor progress meetings;
- prime contractor project safety meeting with Project safety representatives;
- 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;
- conduct Quality Safety Assurance Audits on Arbutus Attenuation Tank and Residuals Solids Pump Stations and Bridge Crossing Prime Contractors.

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.

First Nations

- Award contract for Indigenous art for installation at Clover Point.

Stakeholder Engagement

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

Cost Management and Forecast

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

Construction

McLoughlin Point

- commence demobilisation of both tower cranes;
- complete balance of tsunami wall and planter wall 6;
- commence odour control envelope curtain wall and exterior brick;
- continue installing cable tray, cable pulls and terminations throughout;
- hydrotest fine screen channels;
- install Suez walkways and equipment;
- continue with process mechanical equipment installation in Densadeg 1, 2, and 3;
- install influent and effluent slide gates complete MBBR channel walls and influent and effluent suspended slabs;
- install lateral diffusers in BAF tanks 1 through 6;
- continue building envelope at electrical room, blower room, and heat recovery room;

- continue construction of tertiary concrete walls;
- continue interior fit out of O&M building; and
- complete installation of plant inlet piping and plant bypass piping.

Clover Point Pump Station

- backfill structure;
- complete installation of pig launching chamber;
- complete 1500mm tie-in to new inlet channel;
- reinstate seawall walkway;
- complete north retaining walls;
- pressure test process piping in pump room;
- BC Hydro energize sub-station; and
- commence functional testing of odour control system, air handling unit, storm pumps and sewage pumps.

Macaulay Point Pump Station

- continue to backfill structure;
- form and pour transformer and fuel tank pad;
- install chain link fence at transformer containment area;
- form and pour slab and walls for diversion chamber;
- continue installation of CLT panels;
- install platforms, grating and metal stairs in bin room;
- install epoxy liner in wet well;
- install insulation and vapour barrier;
- install potable and non-potable pipes and plumbing fixtures;
- install discharge piping;
- install air supply and exhaust ducting to bin room;
- reinstate concrete curbs and pressure test forcemain;
- install jib crane in odour control room; and
- continue installation of cable tray and motor control centres, variable frequency drives and programmable logic control.

Residuals Treatment Facility

- commence hydro testing at Digester 1;
- complete Digester 2 ready for hydro testing;
- continue tank erection for Digester 3;
- continue electrical, piping, and sprinkler work at the Digester Building;
- complete piping installation in the Digested Sludge Storage Tank;
- complete structure and commence cladding construction of Operations Building;
- continue piping installation at Other Municipal Solids Receiving Facility;
- continue electrical cable tray; setting electrical equipment, process piping, HVAC, cabling, sprinklers, overhead doors, steel stud & drywall at the Residuals Handling Building;
- continue roofing, building systems, equipment and electrical installation and process piping at the Dryer Building;
- commence installation of process equipment and electrical at Equalization Building;
- commence installation of process equipment and electrical at the Water Pump House; and
- continue equipment installation at Odour Control Area.

Clover Forcemain

- continue road/cycle track construction in areas 2, 4, and 6;
- commence upgrades to Montreal St; and
- Dallas Rd restoration between Government St and Douglas St.

Residual Solids Conveyance Line (RSCL100)

- continue RSCL on Tillicum Rd to Tillicum Bridge;
- continue RSCL on Tillicum Rd from Gorge Rd to Vincent Ave.;
- continue RSCL installation on Interurban Rd from Chesterfield Rd to Roy Rd;
- continue road restoration; and
- commence installation of the MOTI highway 1 crossing.

Residual Solids Pump Stations and Bridge Crossings (RSCL 200)

- continue installation of CRL in Interurban Rd from Marigold Rd to Grange Rd;
- continue installation of supports and piping on Tillicum Bridge;
- commence installation of hangers and piping on Admirals Bridge;
- commence installation of submersible sewage pump, equipment pads, kiosk and odour control at Pump Station 4;
- commence installation of submersible sewage pump, water service, underground electrical at Pump Station 3;
- continue with substructure construction at Pump Station 2;
- complete Hartland water system improvements watermain; and
- continue Hartland water system improvements reservoir construction.

Arbutus Attenuation Tank (AAT)

- completion of drilling operation for secant piles;
- completion of concrete pour operations for reinforced and plain secant piles; and
- initiate formwork / reinforcement for ring beam, western end of tank footprint.

Procurement

Trent Forcemain

- Project kick off with successful Contractor.

2.7 Cost Management and Forecast

The monthly cost report for November is attached as Appendix E. The cost report summarizes Project expenditures and commitments by the three 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 \$12.5 million. The significant commitments made in the reporting period were related to the Trent Forcemain contract (the award of which was initiated over the reporting period), and the remediation of contamination at the McLoughlin Point site, as outlined below.

The McLoughlin Point site on which the Wastewater Treatment Plant is being constructed contains contaminated materials, as a result of its previous use as an oil tank farm. Harbour Resource Partners, the contractor building the Wastewater Treatment Plant, are remediating the site to provincial standards. Remediation work has been ongoing since HRP commenced the excavation of contaminated soils at the site, and over the reporting period a payment of \$6.5M was made to HRP related to the remediation of contamination at the McLoughlin Point site. The extent of contamination on-site is now known, and the delineation of contamination off-site is close to complete. Further payments to HRP will be required associated with:

- remediating contamination that has migrated onto DND lands; and
- completing remediation of the site and obtaining a Certificate of Compliance.

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 \$6.5 million were made over the reporting period, as summarised in Table 6. The draws were partially-offset by a \$1.6 million reallocation from budget to contingency over the reporting period, resulting in a net decrease in contingency of \$4.9 million. 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
Contingency and Program Reserve (in Control Budget)		\$ 69,318,051
Contingency and Program Reserve Draws to October 31, 2019		\$ (56,938,716)
Contingency and Program Reserve addition (May 2019)		\$ 10,000,000
Contingency and Program Reserve balance as at October 31, 2019		\$ 22,379,335
SCADA plan for CRD operational requirements	Nov-19	\$ (143,420)
Remediation of Contaminated Soils on DND Lands	Nov-19	\$ (316,097)
McLoughlin Point Contaminated Site Remediation	Nov-19	\$ (5,968,000)
WWTP Total Draw/Increase		\$ (6,427,517)
RTF Total Draw		\$ -
Macaulay Pump Station - Radio Telemetry Equipment	Nov-19	\$ (4,320)
Clover Pump Station - Radio Telemetry Equipment	Nov-19	\$ (7,544)
Clover Pump Station - Additional Rock Removal Quantities	Nov-19	\$ (39,061)
Conveyance Total Draw		\$ (50,925)
PMO Total Draw		\$ -
BC Hydro Total Draw		\$ -
WTP Program Reserve Draw		\$ -
Contingency and Program Reserve additions in the reporting period (reallocation from budget)		\$ 1,600,000
Contingency and Program Reserve draws in the reporting period		\$ (6,478,443)
Contingency and Program Reserve balance as at November 30, 2019		\$ 17,500,892

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	-	\$83.4M
Government of Canada (Green Infrastructure Fund)	\$50M	\$3.7M	\$31.4M
Government of Canada (P3 Canada Fund)	\$41M	-	-
Government of British Columbia	\$248M	-	-
Federation of Canadian Municipalities	\$346K	-	-
TOTAL	\$459.3M	\$3.7M	\$114.8M

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.

The changes to the active risks summary from that presented in the Project's October 2019 Monthly Report:

- The risk level of unexpected contaminated soil conditions during excavation was reduced to low as the extent of contamination at the McLoughlin Point site is now known, and the delineation of contamination off-site is close to complete; and
- The following risks were closed due to the initiation of contract award for the last conveyance contract (for the Trent Forcemain):
 - Unexpected geotechnical conditions results in higher procurement and/or construction costs;
 - Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted; and
 - Engineering design development results in increases to the estimated construction cost.

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
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.	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. A work plan and schedule have been developed and the Project Team, MOE and relevant contractors will continue to meet regularly to track progress and discuss issues. MWR Registration application submitted to the Ministry of Environment in September 2019. The Ministry will consult with First Nations as part of their approval process. The Ministry of Environment considers the Wastewater Treatment Project to be a priority and is committed to approving the MWR Registration in time for commissioning. Additionally, the Ministry of Environment will specifically address water quality during commissioning in the approval.	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
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
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
McLoughlin Point Wastewater Treatment Plant				

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
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	The risk level was reduced from high to low as the extent of contamination at the McLoughlin Point site is now known, and the delineation of contamination off-site is close to complete.
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 have been undertaken for the Trent Forcemain as part of the detailed design process.	C	The risk was closed due to the initiation of contract award for the last conveyance contract (for the Trent Forcemain).
Due to high cost escalation (inflation) Conveyance works contracts' amount higher than budgeted.	Cost of conveyance contracts higher than estimated and budgeted.	There is only one conveyance contract remaining to be procured (the Trent Forcemain). It will be competitively-procured, as has been done for all of the construction contracts. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money, and in order to identify any opportunities where savings could be realized to partially-offset escalation.	C	The risk was closed due to the initiation of contract award for the last conveyance contract (for the Trent Forcemain).

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
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).	There is only one conveyance contract remaining to be procured (the Trent Forcemain), for which the Project Team recently refreshed the cost estimate. The Project Team will continue to undertake value engineering through the detailed design stage with the aim of minimizing costs to CRD's residents and businesses (life cycle costs) and providing value for money.	C	The risk was closed due to the initiation of contract award for the last conveyance contract (for the Trent Forcemain).

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: progressing concrete work in the Process Building, receiving delivery of large process equipment, progressing O&M Building exterior walls and interior finishes, and progressing off-site utility installation and ongoing installation of plant inlet piping and plant by-pass piping.

Construction

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

- Primary treatment area.
 - west entry structure nearing completion;
 - north pump room influent boxes complete;
 - odour control walls complete;
 - Densadeg shotcrete sloping is complete;
 - HDPE liner welding nearing completion;
 - fine screen room suspended slab complete;
 - fine screens set in place, influent and effluent gates set;
 - Lamella 1 installed;
 - Lamella 2 construction complete;
 - secondary odour control tanks set in place;
 - dirty backwash tank piping and equipment installation continues; and
 - sludge storage tank piping and equipment installation continues.
- Secondary treatment area.
 - Moving Bed Biofilm Reactor #2 concrete in progress;
 - continued installation of pipe rack 2 in the BAF gallery;
 - BAF scouring air distributions systems continue;
 - electricians continue to progress in the BAF gallery;
 - blowers set on final housekeeping pads;
 - cable tray and supports continue in all three penthouse structures;
 - motor control centre installation ongoing in the electrical building;
 - HVAC units set on the penthouse roofs; and
 - penthouse building envelopes in progress.
- Tertiary treatment area.
 - clean water tank slab poured;
 - disk filter slab poured, commencing on upper channels walls;
 - baffle slabs in progress;
 - lower level 1 pumps and mechanical piping install continues; and
 - commenced HVAC and electrical work.
- O&M building
 - masonry block wall continues;
 - HVAC and plumbing continues throughout the building;
 - electrical trade continues good progress through the O&M; and
 - glazing contractor continues on the lower level.

- Off-Site Utilities
 - continued progress on underground utility work along Victoria View Road and Patricia Street;
 - continued progress on plant by-pass pipe installation (phase 3 underway); and
 - continued progress on raw influent piping, valves and pig receiving piping.

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



Figure 2– McLoughlin Point Wastewater Treatment Plant- Installation of pig receiver station, piping and valves.



Figure 3– McLoughlin Point Wastewater Treatment Plant- Setting of Secondary Chemical Tanks.

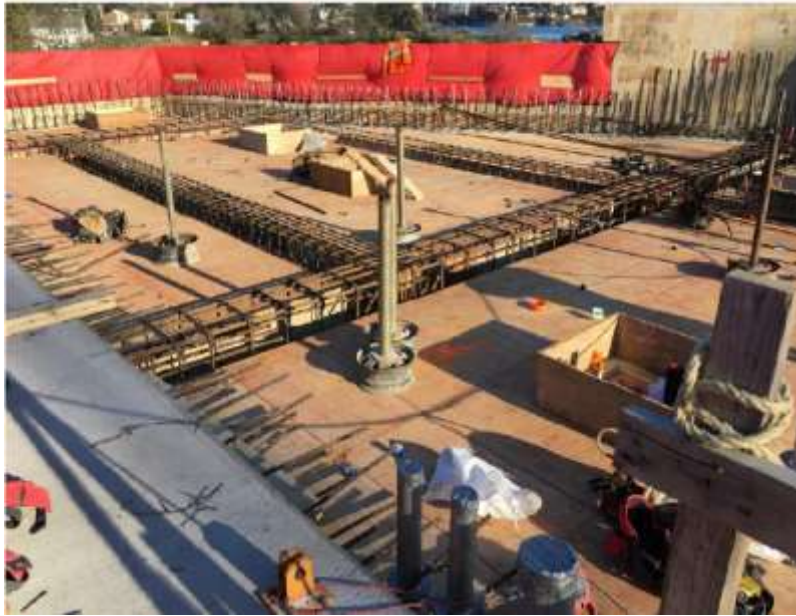


Figure 4– McLoughlin Point Wastewater Treatment Plant- Installing reinforcing steel for Odour Control Roof.



Figure 5– McLoughlin Point Wastewater Treatment Plant-Setting secondary odour control tanks.



Figure 6– McLoughlin Point Wastewater Treatment Plant- Decking Odour control roof slab soffit.

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: completion of the Digested Solids Storage Tank; commencement of the foundation work and starter panels for digester 3; completion of structural steel erection and commencement of process piping, electrical, masonry and HVAC in the Digester building; completion of structural steel and commencement of roofing at the Water pump house and the Equalization building; and commence slope stabilization work at the south slope.

Construction

Key construction activities in progress or completed by HRMG during the reporting period included:

- nearing construction completion of Digester 1;
- piping installation at Digester 2;
- commenced foundation work and starter panels for Digester 3;
- completed tank erection at Digested Solids Storage Tank;
- completed structure erection and commenced process piping, electrical, masonry and HVAC at Digester Building;
- continued cladding, electrical, process piping and started HVAC, and sprinklers at the Residuals Handling Building;
- completed masonry and continued equipment installation, piping, electrical and fire suppression at the Dryer Building;
- nearing completion of Residuals Effluent Tank;
- nearing completion of Residuals Solids Tanks 1 and 2;
- commenced construction of Water Storage Tank;
- completed structural steel erection and commenced roofing and sprinklers at the Equalization Building;
- completed structural steel erection and commenced roofing and sprinklers at the Water Pump House;
- continued foundation work at the Operations Building; and
- commenced slope stabilization work at the south slope.

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



Figure 7– Residuals Treatment Facility- Installation of bolted steel roof panels on water storage tank.



Figure 8– Residuals Treatment Facility- Glass lined and coated ductile iron process piping being installed in effluent tank.



Figure 9– Residuals Treatment Facility- Installation of stainless steel process piping ongoing in Residuals Handling Building.



Figure 10– Residuals Treatment Facility- Installation of insulated metal cladding panels on south side of Dryer Building.

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:

- sanitary and storm wet wells benching completed;
- forming of curved retaining wall ongoing;
- masonry block walls installed at odour control and screen room;
- knife gate and check valve installation is ongoing;
- installed surge relief and domestic water piping;
- forcemain discharge bend installed;
- sanitary and storm pump discharge spools installed;
- lower and upper pump room ducting installed;
- grounding, cable pulls and terminations continued throughout; and
- continued installation of sanitary forcemain and pigging chamber.

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



Figure 11–Clover Point Pump Station- Excavation for forcemain installation.



Figure 12–Clover Point Pump Station- Upper pump room.



Figure 13–Clover Point Pump Station- Formwork and rebar for curved retaining wall.



Figure 14- Clover Pump Station - Installation of suction spools.

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:

- installed concrete curbs;
- commenced installation of Cross Laminated Timber (CLT) panels;
- commenced back filling around building exterior;
- commenced installation of 1800 mm sanitary pipe;
- lowered existing vent pipe from diversion chamber to pump station; and
- Macaulay forcemain progressed along View Point Street, providing for a total installed length to the end of November of 700m.

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



Figure 15–Macaulay Point Pump Station- Installation of cross laminated timber panels.



Figure 16–Macaulay Point Pump Station- 1350 mm forcemain installation along View Point Street.

2.9.3.3 Clover Forcemain (CFM)

Windley Contracting Ltd. (“Windley” as the Construction Contractor) continued construction activities including:

- cycle track paving and landscaping is ongoing;
- road restoration is ongoing;
- final tie-in to the Harbour Crossing pipe in the transition chamber is complete;
- electrical lighting installation ongoing; and
- watermain lining is complete.

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



Figure 17–Clover Forcemain- Final tie-in to the Harbour Crossing pipe in the transition chamber.



Figure 18–Clover Forcemain- Cycle track paving.



Figure 19–Clover Forcemain– Cycle track and road restoration between Douglas Street and Government Street.



Figure 20–Clover Forcemain- Electrical conduit installation for lighting on Dallas Road.

2.9.3.4 Residual Solids Conveyance Line

The RSCL is being delivered through three construction contracts:

- RSCL 100 Residual Solids Pipes;
- RSCL 200 Residual Solids Pump Stations; and
- RSCL 300 Saanich Infrastructure Improvements.

RSCL 100 Residual Solids Pipes: Don Mann Excavating Ltd. (“Don Mann” as the Construction Contractor for the Residual Solids Pipes) continued construction activities including installation of approximately 730m of pipes at the following locations:

- Arm and Craigflower Streets;
- Grange Road south of Burnside Road and Interurban Road north from Grange Road to Chesterfield Road; and
- Interurban Road south from Courtland Ave to Prillaman Ave and Charlton Road to North Road.

Photographs of construction progress over the month of November on the Residual Solids Conveyance Line are shown in Figures 21-24.



Figure 21–Residual Solids Conveyance Line- Pipe installation at Arm Street.



Figure 22–Residual Solids Conveyance Line- Line valve installation at Grange Road.



Figure 23–Residual Solids Conveyance Line- Ductile iron pipe installation on Interurban Rd near North Road.



Figure 24–Residual Solids Conveyance Line- Curb replacement on Interurban Road near Goward Road.

RSCL 200 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:

- erection of scaffolding at Admirals Bridge;
- installation and backfilling of the Hartland watermain from the north end to the reservoir;
- Marigold Valve Chamber was excavated down to subgrade;
- Installation of the RTF chamber at Willis Point Road.
- RSCL pipe installed up to the HRMG tie in;
- watermain installed at Pump Station 1, tie in completed;
- rock breaking for the wet well is ongoing and nearly completed;
- Pump Station 2 footings and retaining walls were formed and poured and. leaks in the wet well were repaired; and
- Pump Station 3 wet well barrel replaced to rectify cracking.
- poured pad for the kiosk at Pump Station 3;
- completion of the valve chamber; and
- completed installation of watermain at Hartland.

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



Figure 25–Residual Solids Pump Stations and Bridge Crossings – Pump Station 4 – grinding kiosk slab to level.



Figure 26 –Residual Solids Pump Stations and Bridge Crossings- Placing concrete in Pump Station 3 South East retaining wall footing.



Figure 27–Residual Solids Pump Stations and Bridge Crossings – Backfilled cleanout on Willis Point Road.

2.9.3.5 Arbutus Attenuation Tank

NAC Constructors Ltd. (as the Construction Contractor for the Arbutus Attenuation Tank) has continued construction activities, including:

- ongoing drilling of secant piles around the perimeter of the tank;
- continue concrete pour operations for reinforced and plain secant piles;
- complete installation of temporary bypass system;
- commence installation of permanent yard piping and manholes;
- decommission existing overflow system infrastructure within tank footprint; and
- excavation of remainder of tank footprint to facilitate additional secant pile construction.

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



Figure 28–Arbutus Attenuation Tank- Ongoing secant pile wall drilling and installation.



Figure 29– Arbutus Attenuation Tank –Bypass pumping delivery header.

2.9.3.6 Trent Forcemain

The Project Team, with Stantec (as the design consultant for the Trent Forcemain) selected the tenderer, in accordance with the Invitation to Tender, and initiated contract award.

Appendix A– Residual Solids Conveyance Line: Admirals Bridge Work (November 15, 2019)

November 15, 2019

Residual Solids Conveyance Line: Admirals Bridge Work

As part of the Wastewater Treatment Project, a pipe will be installed under Admirals Bridge. This work is anticipated to start on November 18 and take approximately 6-8 weeks to complete.

What to Expect

- Scaffolding will be erected on the side of the bridge and a pipe will be installed under the bridge.
- Noise associated with this work includes construction machinery, drilling and hammering, and truck back-up beepers.

Traffic Impacts

- Two-way traffic will be maintained for the majority of the work. However, occasional single lane alternating traffic may be required.
- The northbound-turn lane from Admirals Road onto Esson Road will be used as a through lane for eastbound traffic.
- Eastbound bike lane will be closed and cyclists will be asked to take the lane.
- South sidewalk will be closed with a detour and signage in place.
- The crosswalk west of the bridge will remain open and pedestrian access will be maintained on the north side of Admirals Bridge.

Work Hours

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



Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix B– Arbutus Attenuation Tank: Overnight Bypass Pumping (November 19, 2019)



November 19, 2019

Arbutus Attenuation Tank: Overnight Bypass Pumping

Construction of the Arbutus Attenuation Tank requires temporary bypass pumping overnight. This work is scheduled to begin Tuesday, November 19 and is anticipated to be complete by the end of the week.

What to Expect

- A temporary bypass pumping system has been installed next to the site.
- Noise associated with construction will be ongoing overnight. Diesel-powered pumping units will be in operation and are equipped with acoustic enclosures to reduce noise.
- Flood lights will be used to safely illuminate the work area.
- Temporary closure of trail sections in Haro Woods.

Work Hours

- Construction is required overnight.
- Once this work is complete, normal work hours will resume Monday to Saturday from 7:00 a.m. to 7:00 p.m.

Background

The Arbutus Attenuation Tank will be an underground concrete tank that will temporarily store wastewater flows during high volume storm events to reduce the number of sewage outflows. The Tank is located on CRD-owned land in Haro Woods that was already partially cleared and previously disturbed during the construction of existing sewers. Once construction is complete, the site will be planted with vegetation appropriate for the local woodland setting.

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.

Any questions about the work, please contact the Project Team.



24/7 Phone Line
1.844.815.6132



Email
wastewater@crd.bc.ca



Website
wastewaterproject.ca

Appendix C– Traffic Advisory: 24-Hour Single Lane Traffic on Interurban Road (November 19, 2019)



Making a difference...together

Traffic Advisory

For Immediate Release

November 19, 2019

24-Hour Single Lane Traffic on Interurban Road

Saanich, BC- This week, single lane alternating traffic will be required 24 hours a day on Interurban Road between Charlton and North roads due to construction for the Wastewater Treatment Project. This work will take approximately one week to complete.

Multiple crews continue to work on Interurban during the day, currently near the intersections of Quayle, Grange and Marigold.

Please expect delays, especially during the morning and afternoon commute. We appreciate your patience as the work is being completed.

For more information about the Wastewater Treatment Project, please visit wastewaterproject.ca and follow us on Twitter [@crd_bc](https://twitter.com/crd_bc). For updates on alerts, please visit www.crd.bc.ca/alerts.

-30-

For media inquiries, please contact:

Andy Orr, Senior Manager

CRD Corporate Communications

Tel: 250.360.3229

Cell: 250.216.5492

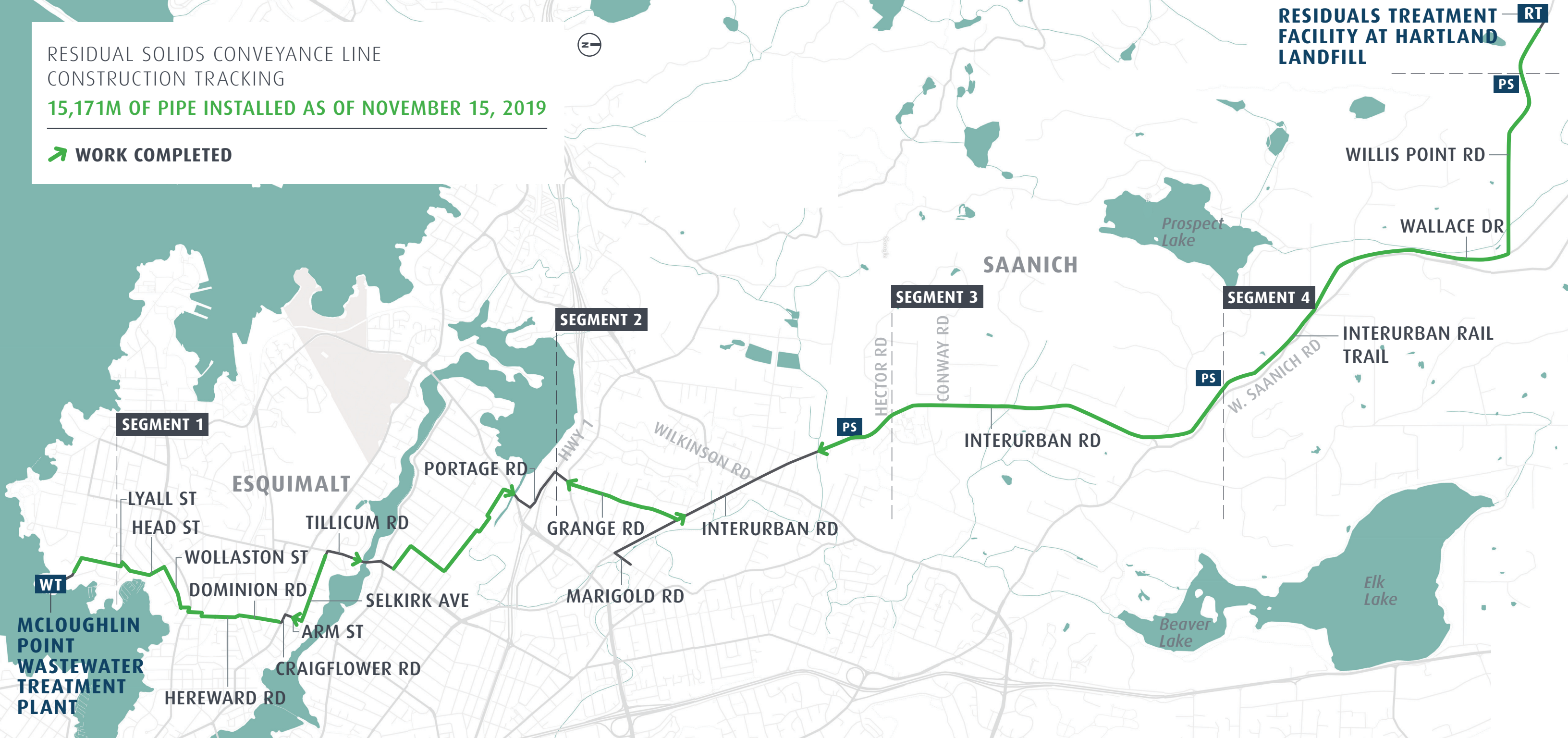


Appendix D– Residual Solids Conveyance Line Map (November 15, 2019)

RESIDUAL SOLIDS CONVEYANCE LINE
CONSTRUCTION TRACKING

15,171M OF PIPE INSTALLED AS OF NOVEMBER 15, 2019

➔ WORK COMPLETED



Appendix E– Monthly Cost Report (November)

MONTHLY COST REPORT as at November 30, 2019														
Description	BUDGET		COST EXPENDED					COMMITMENTS			FORECAST		VARIANCE	
	Control Budget	Allocated Budget	Expended to October 31, 2019	Expended over reporting period (November 2019)	Expended to November 30, 2019	Expended to November 30, 2019 as a % of Allocated Budget	Remaining (Unexpended) Allocated Budget at November 30, 2019	Total Commitment at November 30, 2019	Unexpended Commitment at November 30, 2019	Uncommitted Allocated Budget at November 30, 2019	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	250.3	11.7	262.0	80%	66.1	319.1	57.1	9.0	66.1	328.1	-	0%
Construction	306.7	318.8	249.7	11.7	261.3	82%	57.5	318.4	57.1	0.5	57.5	318.8	-	0%
Contingency	14.9	2.4	-	-	-	0%	2.4	-	-	2.4	2.4	2.4	-	0%
Financing	9.8	6.9	0.7	0.0	0.7	10%	6.2	0.7	-	6.2	6.2	6.9	-	0%
Residuals Treatment Facility	159.4	138.8	8.5	0.3	8.8	6%	130.1	137.8	129.1	1.0	130.1	138.8	-	0%
Construction	145.4	137.8	8.5	0.3	8.7	6%	129.1	137.8	129.1	0.0	129.1	137.8	-	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	0.0	4%	0.8	0.0	0.0	0.8	0.8	0.8	-	0%
Conveyance System	158.1	216.9	121.6	8.0	129.7	60%	87.2	192.7	63.1	24.1	87.2	216.9	-	0%
Macaulay Point Pump Station	25.4	30.6	18.9	1.1	20.0	65%	10.7	30.6	10.7	-	10.7	30.6	-	0%
Macaulay Forcemain	5.6	7.4	5.6	0.5	6.0	81%	1.4	7.4	1.4	-	1.4	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	27.5	22.6	1.0	23.6	86%	3.9	27.5	3.9	-	3.9	27.5	-	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	7.5	1.6	9.1	37%	15.5	23.1	14.0	1.5	15.5	24.6	-	0%
Clover Forcemain	14.6	32.5	24.9	1.3	26.2	81%	6.3	32.1	6.0	0.3	6.3	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	7.1	6.8	4.2	11.1	11.3	-	0%
Residual Solids Conveyance Line	19.1	35.8	24.8	1.5	26.3	74%	9.4	34.0	7.7	1.8	9.4	35.8	-	0%
Residual Solids Pump Stations & Bridge Crossings	4.6	19.5	3.7	1.1	4.9	25%	14.6	17.4	12.5	2.1	14.6	19.5	-	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	0.3	0.0	0.3	8%	3.8	0.3	-	3.8	3.8	4.1	-	0%
Project Management Office ("PMO")	75.9	77.9	48.5	1.0	49.5	64%	28.4	67.1	17.6	10.8	28.4	77.9	-	0%
Professional Services	29.2	41.9	28.5	0.4	28.9	69%	13.0	35.6	6.7	6.3	13.0	41.9	-	0%
Project Board, Project Team & CRD Allocations	34.7	27.9	15.8	0.5	16.3	58%	11.6	26.5	10.2	1.4	11.6	27.9	-	0%
PMO Support	4.8	3.5	2.0	0.0	2.0	57%	1.5	2.7	0.7	0.8	1.5	3.5	-	0%
PMO start-up costs	2.3	2.3	2.3	-	2.3	100%	-	2.3	-	-	-	2.3	-	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	3.3	0.1	3.4	42%	4.8	6.8	3.5	1.3	4.8	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	434.3	21.1	455.3	59%	319.6	725.6	270.3	49.4	319.6	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