Wastewater Treatment Project

Treated for a cleaner future

Summary of Documents Related to Topics of Interest: Odour, Seabed Pipeline, Bluffs and Shoreline, Geotechnical and Noise Topics

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Introduction

The Capital Regional District (CRD) has been planning wastewater treatment for the Core Area for over 30 years. During this time a significant number of reports have been prepared and/or reviewed to assess options and provide information to further planning.

In May 2016 a Project Board was established to define and implement wastewater treatment for the Core Area. The Project Board heard delegations and presentations from the public, industry professionals, and a CRD Director. The Project Board Chair and Vice Chair also met with staff from the CRD, all of the Core Area municipalities, and with Esquimalt and Songhees Nations representatives. The Project Board reviewed the previous technical work and extensive public commentary and developed a methodology to review and evaluate all options. This methodology included evaluation of a large number of options to identify a short list that best addressed the Project goals.

In September 2016 the Project Board presented its recommendation for wastewater treatment and on September 14, 2016 the CRD Board approved the Wastewater Treatment Project (the Project).

A significant number of the reports that have been prepared and/or reviewed still serve as useful background information, but not all of the reports are applicable to the Project. To respond to several recent public inquiries regarding topics of interest, the CRD has prepared this synopsis of reports along with a summary of the applicability of the report to the Project. This summary does not provide a comprehensive list of reports completed as part of wastewater treatment planning for the Core Area, it is a compilation of a number of reports related to key topics of interest: odour; seabed pipeline; bluffs and shoreline; geotechnical; and noise.

1.1 Odour Reports

Westland Resources Group, June 2010. ***Environmental Impact Study of Core Area Wastewater Treatment Facilities – Terrestrial Environment Part 2 – McLoughlin Point – Hartland Facilities***[1]

Purpose of the Report – This report was prepared as part of an Environmental Impact Study (EIS).

This report describes the environmental effects of the construction and operation of the facilities on the following topics: geotechnical conditions; hydrology and water quality; vegetation; wildlife and wildlife habitat; fish; air quality; archaeology and heritage; land use; traffic; noise, vibration, and lighting; human health; visual aesthetics; and site contamination.

This EIS identifies potential impacts of the treatment facilities and ancillary facilities, and recommends mitigation measures as appropriate.

[1] This report is Part 2 of the Environmental Impact Study (EIS) prepared in 2009-2010 for the Capital Regional District's Core Area Wastewater Treatment Program: Terrestrial Environment. The Part 1 EIS describes potential effects and mitigation measures of wastewater facilities in Saanich East. This report (Part 2) examined the sites of the McLoughlin Point-Hartland facilities and the required ancillary infrastructure.

The EIS is based on: a review of available literature on wastewater facility construction and operation; field inspections of the sites, ancillary facility routes and surrounding areas; analysis of plans and reports prepared by municipalities and major institutions covering land use, environmental analyses and other relevant topics; discussions with staff of local governments and major land-owning institutions; and direction provided by the Core Area Liquid Waste Management Committee (CALWMC).

A section of the report deals with odour modelling and odour levels at nearest off-site receptors.

Applicability to Project - The odour modelling in this report was completed prior to the preliminary design being completed and used conceptual level assumptions and odour treatment efficiencies. This report was prepared as part of an Environmental Impact Study in 2009-2010, and was used as the basis for Terra Environment Consultants', March 2014, Environmental Impact Study of Core Area Wastewater Treatment Program Facilities Terrestrial Environment I of III (see next report). The specifics of the odour modelling in this report are no longer applicable because the design has subsequently been advanced. An atmospheric dispersion model has been created by Harbour Resource Partners (the Contractor for the McLoughlin Point Wastewater Treatment Plant) based on the design of the facility. The CRD has provided the output of the modelling on its website, at public meetings and it is outlined at the end of this section.

Link: https://www.crd.bc.ca/docs/default-source/seaterra-pdf/liquid-waste-management-plans/2010_lwmp_appendixf_mcloughlinhartlandeis_westlandresourcegrp_june2010.pdf

Terra Environment Consultants, March 2014. ***Environmental Impact Study of Core Area Wastewater Treatment Program Facilities Terrestrial Environment I of III***[2]

Purpose of the Report - This report is part of the Environmental Impact Study for the Project.

Volume 1 examines the upland facilities associated with the CRD's wastewater management program, except for the Hartland North Resource Recovery Centre, and the residual solids pipeline from McLoughlin Point to Hartland North. This updated report includes assessments of additional temporary construction workspace, staging, and material storage areas at Macaulay Point and McLoughlin Point.

This report describes the environmental effects of the construction and operation of the facilities on the following topics: geotechnical conditions; hydrology and water quality; vegetation; wildlife and wildlife habitat; fish; air quality; archaeology and heritage; land use; traffic; noise, vibration, and lighting; human health; visual aesthetics; and site contamination.

[2] This report is Volume I of III of the updated Environmental Impact Study (EIS). Volume I examines the upland facilities associated with the CRD's wastewater management program, except for the Hartland North Resource Recovery Centre, and the residual solids pipeline from McLoughlin Point to Hartland North, which are assessed in Volume II and III respectively.

This EIS identifies potential impacts of the treatment facilities and ancillary facilities, and recommends mitigation measures as appropriate.

The EIS is based on: a review of available literature on wastewater facility construction and operation; field inspections of the sites, ancillary facility routes and surrounding areas; analysis of plans and reports prepared by municipalities and major institutions covering land use, environmental analyses and other relevant topics; discussions with staff of local governments and major land-owning institutions; and direction provided by the CALWMC.

Part of this report included a section on odour control for the McLoughlin Point Wastewater Treatment Plant.

Applicability to the Project - This report is still valid with respect to the Environmental Impact Study; however, the specifics of the odour control in this report are no longer applicable because the design has subsequently been advanced. An atmospheric dispersion model has been created by Harbour Resource Partners (the Contractor for the McLoughlin Point Wastewater Treatment Plant) based on the design of the facility. The CRD has provided the output of the modelling on its website, at public meetings and it is outlined at the end of this section.

Link: https://www.crd.bc.ca/docs/default-source/seaterra-pdf/reports-studies/environmental-impact-study-of-core-area-wastewater-treatment-program-facilities-terrestrial-environment-volume-i-of-ii.pdf

Harbour Resource Partners, September 2, 2016. ***Harbour Resource Partners - Revalidation of Price and Schedule for McLoughlin Point Wastewater Treatment Plant* - CRD RFP #MC – 300 – *Attachment E Odour Control***

Purpose of the Report - This document was prepared as part of early discussions with the preferred proponent for McLoughlin following completion of the Business Case in September 2016. At the time of the preparation of this report, the design of the odour control system and odour modelling was still in the very preliminary stages and the design had not advanced.

Applicability to Project - This document is no longer applicable as the design has since been advanced. An atmospheric dispersion model has been created by Harbour Resource Partners (the Contractor for the McLoughlin Point Wastewater Treatment Plant) based on the design of the facility. The CRD has provided the output of the modelling on its website, at public meetings and it is outlined at the end of this section.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/lwmp-amendment-10/2016-09-02-rpt-revalidationofpriceand-scheduleappendixebyhrp.pdf

Harbour Resource Partners, April 2017 ***Output of Odour Dispersion Modelling of McLoughlin Point Wastewater Treatment Plant***

Purpose of the Modelling - This atmospheric dispersion modelling study was undertaken by Harbour Resource Partners (HRP) and is based on the current Project design under worst-case wind conditions. The output of this study, which has been presented at Community Information Meetings and is posted the Project website, includes individual data points that have been plotted to show odour units at specific locations. A second map, which shows the odour dispersion contour lines is also available.

Applicability to the Project - The output of the odour dispersion modelling study is applicable to the Project and confirms that the McLoughlin Point Wastewater Treatment Plant will meet the Project specification of no detectable odour to residents.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/crd_wtp_infosheet_operational-noise_20170403-withcontext16575d52e7e16533860dff00001065ab.pdf

2.1 Seabed Pipeline Evaluation

Stantec, November 15, 2010 **Submarine *Pipeline Crossings – Capital Regional District Wastewater Program – Alignment Evaluation***

Purpose of the Report - Early in wastewater treatment planning an option was identified for a regional plant located on the West Shore in south Colwood. Stantec was asked to evaluate options to take sewage flows to the West Shore for treatment. The initial concepts included evaluation of tunnel and seabed options to take flows from Saxe Point to Colwood. The dredged seabed option was found to be less expensive than a tunnel option.

Applicability to Project - This report is not applicable to the Project because it was prepared to compare a tunnel option to a seabed option for transporting flows from Saxe Point to Colwood. This report is no longer applicable because none of the options it assessed are part of the Project.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/2010-11-15-rpt-submarinepipelinecrossingscrdwtpalignmentevaluationbystantecconsulting.pdf

Stantec, Technical Memo, March 13, 2017 ***Seabed Pipeline Route for Clover Point Forcemain***

Purpose of the Report – This technical memo was prepared to assess at a high-level the feasibility of a seabed pipeline from Clover Point to McLoughlin Point as an alternative to the forcemain that will be constructed along Dallas Road from the Clover Point Pump Station to Ogden Point (the Clover Point Forcemain) as part of the Project. This memo was prepared to respond to a March 3, 2107 letter from John Gunton regarding a seabed pipeline concept proposal. The memo outined a number of concerns

for a seabed pipeline option, including permitting, anchoring from wave action, protection from anchor damage, repair and maintenance concerns and cost. Furthermore, the seabed option would present challenges to completion by December 31, 2020 and would require a Canadian Environmental Assessment Agency (CEAA) review.

Applicability to Project – This memo was prepared for the Project and remains applicable.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/seabed-proposal-cover-memo.pdf

3.1 Bluffs / Shorelines Reports

Thurber Consultants Ltd, 1977. ***Dallas Road Shoreline Erosion***. A report to the Office of the City Engineer.

Purpose of the Report - This report assessed the impact of shoreline erosion along Dallas Road between Holland Point and Clover Point.

Applicability to Project - This report is applicable to the Project, which includes the construction of a forcemain along Dallas Road from the Clover Point Pump Station to Ogden Point (the Clover Point Forcemain). The alignment of the Clover Point Forcemain will be finalized with consideration of shoreline erosion, and will be constructed at a sufficient distance from the foreshore to eliminate impacts from the foreshore erosion. Furthermore, as part of completing the final design for the Clover Point Forcemain, a plan will be prepared to mitigate any impacts on the bluffs during construction. This plan will include post construction monitoring for 12 months following completion of construction.

This report is publicly available at the City of Victoria Archives:
http://www.victoria.ca/EN/main/residents/archives.html

R.D. Gille, 1997. ***Waterfront Erosion Benchmark Study***. A report to the City of Victoria.

Purpose of the Report - This report was prepared as a benchmark study of the area between James Bay Seawall and Clover Point to be used as a baseline for future erosion monitoring. The report assessed sea cliff recession using historical air photos from 1928, 1954, 1977 and 1992, as well as, ground survey data from 1958 and 1991.

Applicability to the Project - This report analyzes historical information to determine the sea cliff recession. This report is applicable to the Project, which includes the construction of a forcemain along Dallas Road from Clover Pump Station to Ogden Point (the Clover Point Forcemain). The report findings demonstrate that recession is not significant in the area of the Clover Point Forcemain alignment. Furthermore, as part of completing the final design for the Clover Point Forcemain, a plan will be prepared to

mitigate any impacts on the bluffs during construction. This plan will include post construction monitoring for 12 months following completion of construction.

This report is publicly available at the City of Victoria Archives:
http://www.victoria.ca/EN/main/residents/archives.html

Stantec, May 30, 2017. ***Dallas Road Cliffs, Historic Foreshore Erosion Assessment***

Purpose of the Report - This report was prepared to assess preliminary forcemain alignment and geotechnical field investigation planning for the Clover Point to Ogden Point forcemain (the Clover Point Forcemain). The report had similar findings to the R.D. Gille, 1997 report with respect to cliff recession rates.

Applicability to the Project - This report is applicable to the Project and will be used as an input into the development of the geotechnical field investigation requirements for the Clover Point to Ogden Point forcemain alignment. Further detailed slope stability analysis will be completed as part of the geotechnical analysis for the project.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/2017-05-30-rpt-dallasroadcliffshistoricforeshoreerosionassesmentbystantec.pdf

4.1 Geotechnical Reports

Stantec, April 12, 2013 ***Geotechnical Data Report, Core Area Wastewater Treatment Program***

Purpose of the Report - This report was a Geotechnical Data Report that was provided to all bidders for the McLoughlin Point Wastewater Treatment Plant. The report provided the results of test drilling at a number of boreholes drilled on the McLoughlin site and in Victoria Harbour. The report included a compilation of borehole data completed by Stantec and by Golder Associates as part of the McLoughlin site remediation. The report identified issues that would have to be addressed by the successful proponent for the McLoughlin Point Wastewater Treatment Plant.

Applicability to the Project - This report is applicable to the Project. The report provides relevant information with respect to the current geotechnical conditions for the McLoughlin Site and the Victoria Harbour Crossing. The design-build contractor, Harbour Resource Partners (HRP) will consider the findings in this report as they finalize the design of the McLoughlin Point Wastewater Treatment Plant and the Victoria Harbour Crossing. HRP has engaged a geotechnical engineer to provide further geotechnical design information for the design of the McLoughlin plant foundations and the Victoria Harbour Crossing.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/2013-04-12-rpt-geotechnicaldatareportfinalbystantec.pdf

5.1 Noise Reports

City Spaces, January 2013 ***Community Impact & Mitigation Report***

Purpose of the Report - This report was prepared as part of the rezoning application for the McLoughlin Point Wastewater Treatment Plant. The report indicated that the McLoughlin plant would be designed to meet the then current Township of Esquimalt Zoning Bylaws.

Applicability to the Project - Aspects of this report are applicable to the Project, though the design of the McLoughlin Point Wastewater Treatment Plant has been advanced since this report was prepared. Furthermore on February 27, 2017, the Township of Esquimalt amended its Zoning Bylaws (Amendment 2888).

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/2013-01-rpt-appendixhcommunityimpactandmitigationbycityspaces.pdf

RWDI, April 2017 ***Output of Noise Modelling of McLoughlin Point Wastewater Treatment Plant***

Purpose of the Modelling - The modelling was undertaken to determine the noise in the Township of Esquimalt and the City of Victoria. The noise modelling was undertaken assuming a “worst case scenario” of 60 decibels everywhere along the McLoughlin Point Wastewater Treatment Plant site’s property line. However, actual noise levels from the treatment facility once operational are anticipated to be lower.

Applicability to the Project - The output of the model is applicable to the Project and confirms that the McLoughlin Point Wastewater Treatment Plant will meet all municipal noise bylaw requirements.

Link: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/crd_wtp_infosheet_operational-noise_20170403-withcontext.pdf