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**EEE 13-52**

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE**
**MEETING OF WEDNESDAY, DECEMBER 11, 2013**

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**SUBJECT** **ENVIRONMENTAL IMPACT STUDY OF CORE AREA WASTEWATER TREATMENT PROGRAM FACILITIES (TERRESTRIAL ENVIRONMENT, VOLUME I OF II)**

## ISSUE

The Capital Regional District (CRD) needs to submit an Environmental Impact Study (EIS) of the selected sites for the Core Area Wastewater Treatment Program facilities to satisfy the requirements under the BC Municipal Wastewater Regulation of the *Environmental Management Act* for both the terrestrial and marine environments. The report must first be received and accepted by the Core Area Liquid Waste Management Committee (CALWMC) and CRD Board prior to submission to the Ministry.

## BACKGROUND

WorleyParsons Canada Ltd. completed the marine outfall components of the required EIS and staff presented the results to the CALWMC in September 2013, which were subsequently approved by the Capital Regional District (CRD) Board prior to submission to the Ministry of Environment.

TERA Environmental Consultants (formerly Westland Resource Group) completed the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment Volume I of II* (October 2013) for the proposed major facilities in the program. These included facilities upgraded at Macaulay Point and Clover Point pump stations, a new treatment facility at McLoughlin Point, a new attenuation tank at Arbutus Road, a new pump station at Craigflower and various ancillary conveyance pipelines. The sludge conveyance pipeline from McLoughlin Point to Hartland and the Hartland Resource Recovery Centre will be included in the EIS Volume II, which will be completed in 2014.

The executive summary and table of contents for the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* (October 2013) are provided as Appendix A. The full document can be found on the CRD website at 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?sfvrsn=0.

TERA Environmental Consultants will attend the CALWMC meeting and be available to answer questions.

## ALTERNATIVES

That the Core Area Liquid Waste Management Committee recommend to the Board:

1. a) That the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* (October 2013) by TERA Environmental Consultants be received for information;

b) That staff be directed to forward the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* to the Ministry of Environment; and

c) That staff be directed to share the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* with the public by: (i) advertising in local newspapers that the study is available on the CRD website, (ii) forwarding the study to the Technical and Community Advisory Committee for information, and (iii) forwarding the study to the Aboriginal Initiatives Division for referral to appropriate First Nations.

2. a) That the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* not be forwarded to the Ministry of Environment; and

b) That staff be directed to provide additional information.

## ENVIRONMENTAL AND SOCIAL IMPLICATIONS

The EIS commits the CRD to take a variety of actions to effectively mitigate the environmental and social impacts resulting from construction and operation of the treatment and ancillary facilities. The nature of the impacts and the recommended mitigation measures are described in detail in the EIS.

In evaluating the overall impact of building and operating the wastewater treatment facilities, it needs to be considered in the context of the substantial improvements in the quality of effluent released into the marine environment.

## CONCLUSION

The *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* by TERA Environmental Consultants satisfies both the ESR and EIS requirements of the Ministry of Environment under the BC Municipal Wastewater Regulation of the Environmental Management Act for the terrestrial environments.

The *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume II of II* for the sludge conveyance pipeline to Hartland and the Hartland Resource Recovery Centre will be presented to the CALWMC when completed in the new year.

## RECOMMENDATIONS

That the Core Area Liquid Waste Management Committee recommend to the Board:

1. That the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* (October 2013) by TERA Environmental Consultant be received for information;

2. That staff be directed to forward the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* to the Ministry of Environment; and

3. That staff be directed to share the *Environmental Impact Study of Core Area Wastewater Treatment Program Facilities – Terrestrial Environment, Volume I of II* with the public by: (i) advertising in local newspapers that the study is available on the CRD website, (ii) forwarding the study to the Technical and Community Advisory Committee for information, and (iii) forwarding the study to the Aboriginal Initiatives Division for referral to appropriate First Nations.

Dan Telford, P.Eng.
Senior Manager
Environmental Engineering

Larisa Hutcheson, P.Eng.
General Manager
Parks and Environmental Services
Concurrence

Robert Lapham, MCIP, RPP
Chief Administrative Officer
Concurrence

DT:jt

Attachment: 1

APPENDIX A

# ENVIRONMENTAL IMPACT STUDY OF CORE AREA WASTEWATER TREATMENT PROGRAM FACILITIES

## TERRESTRIAL ENVIRONMENT

## VOLUME I OF II

**October 2013**
**10215**

Prepared for:

Making a difference...together

Capital Regional District
625 Fisgard Street
Victoria, British Columbia

Prepared by:

ENVIRONMENTAL CONSULTANTS

TERA Environmental Consultants
Suite 1100, 815 - 8th Avenue S.W. Calgary, Alberta T2P 3P2
Ph: 403-265-2885

# SUMMARY

The Capital Regional District (CRD) has prepared an Environmental Impact Study (EIS) of the proposed Core Area Wastewater Treatment Program (CAWTP) Facilities: Terrestrial Environment – Volume I of II. Volume I examines the upland facilities associated with the CRD's wastewater management program except for the biosolids treatment facility, which are assessed in Volume II. An analysis of environmental effects of the marine portion of the wastewater management program is presented in a separate EIS.

In compliance with provincial directives to institute secondary treatment of wastewater, the CRD is developing plans for treatment facilities to serve the CRD's core area. The facilities will treat wastewater flows from Victoria, Esquimalt, View Royal, Oak Bay, Saanich, Colwood and Langford, British Columbia.

Following extensive engineering and planning study, in spring 2010 the Core Area Liquid Waste Management Committee (CALWMC) selected the McLoughlin Point site as the preferred location for a wastewater treatment facility and determined that the existing facilities at Macaulay and Clover points will be upgraded, a new pump station at Craigflower will be required, an attenuation tank will be needed at the Arbutus Road site, and a biosolids facility will be constructed north of the Hartland landfill site..

As part of the CAWTP, flows from the current Macaulay Point and Clover Point catchment areas will be diverted to the newly constructed McLoughlin Point facility for treatment. The CAWTP facilities will also create opportunities for potential resource recovery including biogas, phosphorous, effluent heat recovery and dried biosolids for beneficial reuse.

The proposed CAWTP facilities include:

- facilities upgraded at Macaulay Point (Township of Esquimalt) and Clover Point (City of Victoria) will screen, remove grit and pump wastewater to the McLoughlin Point treatment facility;
- a new McLoughlin Point treatment facility (Township of Esquimalt) will provide secondary treatment, discharge the liquid effluent and provide opportunities for effluent heat recovery;
- a new Arbutus Road underground attenuation tank (District of Saanich) to reduce downstream wet weather overflows;
- a new Craigflower pump station (Town of View Royal);
- ancillary facilities, primarily pipes to convey wastewater between facilities and a new outfall to be constructed at McLoughlin Point; and
- sludge conveyance to the Hartland site, where a digester and processing facility will be constructed.

The system configuration forms the basis of amendments to the CRD's Core Area Liquid Waste Management Plan. A previous amendment associated with the CAWTP was submitted to the provincial government in December 2009. The Ministry of Environment has mandated that an EIS of the selected sewage treatment facility sites be submitted. This EIS has been prepared to comply with that requirement by examining terrestrial facilities, with the exception of the proposed biosolids facility located at the Hartland site, which is subject to a separate assessment. Effects of marine facilities and effluent discharge are examined in a separate document.

This report describes the environmental effects of the construction and operation of the facilities on the following topics, as specified in terms of reference for the EIS developed jointly by the CRD and the Ministry of Environment:

- 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. The methods applied in conducting the study are described in detail in Section 4.0. In general terms, 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.

The McLoughlin Point facility will provide opportunities to recover heat from wastewater. Sludge will be pumped to a biosolids facility, where it will undergo thermophilic anaerobic digestion, dewatering and drying. This process produces methane, which can be used on-site or cleaned and injected into the natural gas distribution system, and Class A biosolids that can be used as a soil amendment or a fuel.

Construction impacts are examined separately from impacts of facility operation. Construction activities includes site clearing, grading, excavation, foundation work, building construction, equipment installation and testing, commissioning of the facility, site restoration and landscaping. Operations include day-to-day functioning of the treatment facilities and ancillary facilities, including routine maintenance. Project-related impacts identified in the EIS are described according to their:

- spatial extent (area affected);
- temporal extent (duration);
- reversibility;
- magnitude; and
- significance.

Tables 1 to 5 summarise the impact significance ratings for the various topics assessed for each facility site. Tables 6 to 9 summarise the ratings for the ancillary facility routes. Most of the project-induced

effects can be reduced to less than significant levels using mitigation measures that are standard practice. In six cases, enhanced mitigation measures will be required to reduce project effects to a less than significant level. In five cases, potential effects could be beneficial as a result of the facility construction or operation mitigation measures.

**TABLE 1**

**MACAULAY POINT – SIGNIFICANCE OF IMPACTS**

| | Impact Significance | | | |
|---|---|---|---|---|
| | Macaulay Point | | | |
| | Construction | | Operation | |
| **Impact On** | **Standard Practice** | **Enhanced Mitigation** | **Standard Practice** | **Enhanced Mitigation** |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | B |

**TABLE 2**

**CLOVER POINT – SIGNIFICANCE OF IMPACTS**

| | Impact Significance | | | |
|---|---|---|---|---|
| | Clover Point | | | |
| | Construction | | Operation | |
| **Impact On** | **Standard Practice** | **Enhanced Mitigation** | **Standard Practice** | **Enhanced Mitigation** |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | B | L | L |
| Wildlife | L | B | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | L |

| | | |
|---|---|---|
| S = | Significant | The identified effect would have characteristics that render it unacceptable to the public, regulators, other interests, or it exceeds standards or contravenes legal requirements. |
| L = | Less than significant | Effects that are not considered significant. |
| B = | Beneficial | The resource or topic under study would be improved as a result of project effects. |
| N/A = | Not applicable | |

## TABLE 3

## MCLOUGHLIN POINT – SIGNIFICANCE OF IMPACTS

| Impact On | Impact Significance | | | |
|---|---|---|---|---|
| | McLoughlin Point | | | |
| | Construction | | Operation | |
| | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | B | B | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | S | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | S | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | L |

## TABLE 4

## ARBUTUS ROAD ATTENUATION TANK – SIGNIFICANCE OF IMPACTS

| Impact On | Impact Significance | | | |
|---|---|---|---|---|
| | Arbutus Road Attenuation Tank | | | |
| | Construction | | Operation | |
| | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | S | L | L | L |
| Wildlife | L | L | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | S | L |

| | | |
|---|---|---|
| S = | Significant | The identified effect would have characteristics that render it unacceptable to the public, regulators, other interests, or it exceeds standards or contravenes legal requirements. |
| L = | Less than significant | Effects that are not considered significant. |
| B = | Beneficial | The resource or topic under study would be improved as a result of project effects. |
| N/A = | Not applicable | |

## TABLE 5

## CRAIGFLOWER PUMP STATION – SIGNIFICANCE OF IMPACTS

| Impact On | Impact Significance | | | |
|---|---|---|---|---|
| | Craigflower Pump Station | | | |
| | Construction | | Operation | |
| | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | L |

## TABLE 6

## MACAULAY POINT TO MCLOUGHLIN POINT ANCILLARY FACILITIES – SIGNIFICANCE OF IMPACTS

| Impact On | Impact Significance | | | |
|---|---|---|---|---|
| | Macaulay Point To McLoughlin Point Ancillary Facilities | | | |
| | Construction | | Operation | |
| | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | L |

| | | |
|---|---|---|
| S = | Significant | The identified effect would have characteristics that render it unacceptable to the public, regulators, other interests, or it exceeds standards or contravenes legal requirements. |
| L = | Less than significant | Effects that are not considered significant. |
| B = | Beneficial | The resource or topic under study would be improved as a result of project effects. |
| N/A = | Not applicable | |

## TABLE 7

## CLOVER POINT TO MCLOUGHLIN POINT ANCILLARY FACILITIES – SIGNIFICANCE OF IMPACTS

| Impact On | Impact Significance | | | |
|---|---|---|---|---|
| | Clover Point To McLoughlin Point Ancillary Facilities | | | |
| | Construction | | Operation | |
| | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | L | L | L | L |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | S | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | L |

## TABLE 8

## ARBUTUS ROAD ATTENUATION TANK ANCILLARY FACILITIES – SIGNIFICANCE OF IMPACTS

| Impact On | Impact Significance | | | |
|---|---|---|---|---|
| | Arbutus Road Attenuation Tank Ancillary Facilities | | | |
| | Construction | | Operation | |
| | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | N/A | N/A | N/A | N/A |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | S | L | L | L |

| | | |
|---|---|---|
| S = | Significant | The identified effect would have characteristics that render it unacceptable to the public, regulators, other interests, or it exceeds standards or contravenes legal requirements. |
| L = | Less than significant | Effects that are not considered significant. |
| B = | Beneficial | The resource or topic under study would be improved as a result of project effects. |
| N/A = | Not applicable | |

**TABLE 9**

**CRAIGFLOWER PUMP STATION ANCILLARY FACILITIES: PORTAGE INLET CROSSING AND TERRESTRIAL ROUTE – SIGNIFICANCE OF IMPACTS**

| | Impact Significance | | | |
|---|---|---|---|---|
| | Craigflower pump Station Ancillary Facilities | | | |
| | Construction | | Operation | |
| Impact On | Standard Practice | Enhanced Mitigation | Standard Practice | Enhanced Mitigation |
| Geotechnical hazards | L | L | L | L |
| Hydrology and water quality | L | L | L | L |
| Vegetation | L | L | L | L |
| Wildlife | L | L | L | L |
| Fish | L | L | L | L |
| Air quality | L | L | L | L |
| Archaeology and heritage | L | L | L | L |
| Land use | L | L | L | L |
| Noise, vibration, and lighting | L | L | L | L |
| Traffic | L | L | L | L |
| Human health | L | L | L | L |
| Visual aesthetics | L | L | L | L |

| | | |
|---|---|---|
| S = | Significant | The identified effect would have characteristics that render it unacceptable to the public, regulators, other interests, or that exceeds standards or contravenes legal requirements. |
| L = | Less than significant | Effects that are not considered significant. |
| B = | Beneficial | The resource or topic under study would be improved as a result of project effects. |
| N/A = | Not applicable | |

The following points summarise the findings of this EIS.

- Construction of the facility at McLoughlin Point provides opportunities to complete remediation of this site by the CRD.
- For all of the treatment facility sites except Clover Point and Arbutus Road, facility construction will not adversely affect public use of adjacent lands. At Clover Point and Arbutus Road, construction effects on the adjacent park can be mitigated to less than significant levels.
- Odour effects at the facilities can be mitigated to less than significant levels through implementation of advanced odour treatment technology, frequent maintenance and use of redundant systems and backup power supplies.
- Construction of the McLoughlin Point facility will result in significant traffic effects on local roads, primarily during removal of excavated rock and delivery of concrete. Implementation of transportation management plans, including consideration of use of barges, for these activities can mitigate the traffic impacts to less than significant levels.
- High quality design, finish and landscaping of the facilities can mitigate visual aesthetic impacts to less than significant levels.
- Effects on archaeological features are expected to be less than significant at all CAWTP facility sites.
- Rezoning is required for a wastewater treatment facility at the McLoughlin Point site. The Clover Point facility will need to comply with land tenure requirements for the site. The facilities at the other sites comply with plans and bylaws. The land use effects of the facilities are less than significant.

- Few vegetation or wildlife impacts will result from facility construction or operation at the McLoughlin Point, Clover Point, Macaulay Point and Craigflower sites. The vegetation impacts at Arbutus Road can be reduced to less than significant by enhanced mitigation measures.

- Soils, hydrology and other geotechnical effects are less than significant in most cases. At the McLoughlin Point site, ground water quality may be improved with site redevelopment where water quality could be improved with site redevelopment constituting a beneficial effect.

- Installing ancillary pipes along Dallas Road is likely to result in significant traffic and land use disruptions. The Dallas Road route could encounter archaeological features. Scheduling construction to avoid peak tourist traffic periods would reduce impacts to less than significant levels.

- Operation of the facilities will generate low volumes of traffic, resulting in less than significant impacts. Construction traffic will require careful management to avoid significant traffic impacts at each of the sites.

- Potential project nuisance effects (noise, vibration and lighting) and human health effects can be mitigated to less than significant levels at the facilities.

- The proposed CAWTP facilities are mostly on land that has been previously developed for other urban uses, and less than 1 ha of “greenfield” land will be affected. The contribution of the wastewater project facilities to the cumulative effects of developments in the region on the environment, on land use and on communities is considered less than significant. However, careful planning will be needed to avoid significant cumulative effects of the projects on local traffic and roads.

The EIS commits the CRD to take a variety of actions specified in the report. These actions will mitigate the impacts identified in the EIS.

Environmental and community impacts resulting from construction and operation of treatment and ancillary facilities can be effectively mitigated. The nature of the impacts and recommended mitigation measures are described in the EIS. The impacts of building and operating wastewater treatment facilities need to be considered in the context of the substantial improvements in the quality of effluent released into the marine environment by the CRD’s wastewater facilities.

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