Wastewater Treatment Project
Treated for a cleaner future

Output of Odour Dispersion Modelling of McLoughlin Point Wastewater Treatment Plant

Report Context

The 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 a synopsis of reports along with a summary of the applicability of the report to the Project. The document summary is available here: https://www.crd.bc.ca/docs/default-source/wastewater-planning-2014/2017-05-30-summary-of-documents-related-to-topics-of-interest.pdf. The document 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.

Purpose of this Modelling

The odour dispersion modelling was undertaken to determine potential odour experienced in the Township of Esquimalt and the City of Victoria associated with the McLoughlin Point Wastewater Treatment Plant. The odour modelling is based on the current design of the McLoughlin Point Wastewater Treatment Plant and reflects worst-case wind conditions.

Applicability to Project

The output of the odour dispersion model is applicable to the Project and confirms that the McLoughlin Point Wastewater Treatment Plant will not produce any detectable odour by residents.

Odour Control: McLoughlin Point Wastewater Treatment Plant

The McLoughlin Point Wastewater Treatment Plant has been designed so there will be no detectable odour by residents. Modelling shows odour will be approximately 2 OU at the plant's property line.

The plant will have one of the highest levels of odour capture and treatment in the industry:

- All treatment processing tanks are covered
- All air is captured and treated

A 24-hour odour control monitoring system will ensure requirements are met or exceeded. Back-up odour control equipment and back-up power generators will be installed, reducing the possibility of odour escaping the facility if there is an equipment failure.

There will be detailed procedures for responding to odour issues, in the unlikely event that one occurs. The public will be able to call a CRD phone line and report any odour issues 24 hours a day, once the plant is in operation.

What is an Odour Unit (OU)?

- An odour unit is a standard measure used to describe the amount of odour present in one cubic metre of neutral air.
- Odour is not discernible at 5 OU or less.
- A typical residential neighbourhood has a background odour of 7 to 20 OU which may include:
  - Grass
  - Plants
  - Mulch
  - Marine environment

Odour Control at other Wastewater Treatment Plants

KELOWNA, BC WASTEWATER TREATMENT PLANT

- Kelowna Plant is in a residential neighbourhood
- Homes are within 20 metres of plant; Okanagan College is adjacent to the site
- 5 OU used for design limit
- Secondary treatment processing tanks are uncovered; by comparison, all McLoughlin Point Plant treatment processing tanks are covered
- No odour complaints

VERNON, BC WASTEWATER TREATMENT PLANT

- Vernon Plant is in a residential neighbourhood
- Homes are situated at the plant's fence line
- 5 OU used for design limit
- Single stage odour treatment; by comparison, the McLoughlin Point Plant will have two stage odour treatment
- Secondary treatment processing tanks are uncovered; by comparison, all McLoughlin Point Plant treatment processing tanks are covered
- No odour complaints

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Odour Control: McLoughlin Point Wastewater Treatment Plant

While the maximum allowable odour is 5 OU at the property line, modelling based on the current design shows odour during operations will be approximately 2 OU at the McLoughlin Point Wastewater Treatment Plant property line and dissipates quickly as it moves away from the plant.

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. The Wastewater Treatment Project will be built so we comply with federal regulations by the end of 2020, and is being funded by the Government of Canada, the Government of British Columbia and the CRD.

Odour Model

Odour from McLoughlin Point Wastewater Treatment Plant. Odour model based on the worst-case wind conditions over the last five years, based on regional meteorological data.

For More Information

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

McLoughlin Point Wastewater Treatment Plant Odour Dispersion Model

This map provides the same information as the map shown on the previous page in a different format, providing contours rather than specific points of reference.