

Service Plan for Core Area Liquid Waste Service

2016-2019
(2019)

Capital Regional District

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Table of Contents

1	Overview	1
1.1	Scope	1
1.2	Primary Contacts.....	1
2	Services & Programs	2
2.1	Regional Trunk System Overview	2
2.2	Conveyance System Operations & Engineering	2
2.3	Planning, Regulatory, Scientific & Technical Support Programs	3
3	Core Area Wastewater Treatment Program.....	4
3.1	Project Overview.....	4
3.2	Project Charter.....	5
3.3	Project Overlay.....	5
3.4	Project Work Plan	5
4	Governance & Financial Information.....	5
4.1	Financial Overview.....	6

1 Overview

1.1 Scope

The Capital Regional District (CRD) provides wastewater management to residential, commercial, industrial and institutional customers, equivalent to a population of approximately 330,000 persons distributed throughout the core area communities. These communities include the cities of Colwood, Esquimalt, Langford, Oak Bay, Saanich, Victoria and View Royal, and the Songhees and Esquimalt First Nations.

The municipalities of Esquimalt, Oak Bay and Victoria are fully served by sewers. The majority of properties in View Royal have sewers but a few still remain outside of the service area. A large, predominantly rural area of Saanich is outside of the sewerage service area. Increasing areas of Colwood and Langford are served by sewers, with plans for further expansion. In the long term, both these municipalities are expected to be fully served by sewers.

Properties not served by sewers utilize onsite septic systems or small treatments plants to provide wastewater treatment. These onsite systems primarily rely on tile fields or other distribution methods for ground disposal of treated effluent.

The CRD completed a Liquid Waste Management Plan for the core area communities in July 2000. The plan provides a strategy for managing liquid wastes for the next 25 years, and was approved by the Minister of Environment in March 2003. Since that time, the Plan has had 12 amendments, with the most recent being conditionally approved in June 2018 by the BC Ministry of Environment & Climate Change Strategy. Every 3-5 years, the CALWMP is consolidated to include amendments to that date; consolidation was last done in 2014. Over the next year staff plan to consolidate the CALWMP up to and including Amendment No. 12, review and audit the objectives and commitments, and revise the CALWMP with provincial, municipal and stakeholder input. Staff are also working to ensure that all conditions imposed by the BC Ministry of Environment & Climate Change Strategy, when CALWMP amendments were conditionally approved, have been met.

The Core Area Liquid Waste Service, as a whole, is delivered and supported by a number of CRD services and programs delivered by various CRD departments and divisions and the CAWTP project team. The main service and program areas are described in Section 2.

1.2 Primary Contacts

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Core Area Wastewater Planning, Regulatory, Scientific and Technical Programs

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Core Area Wastewater Treatment Project

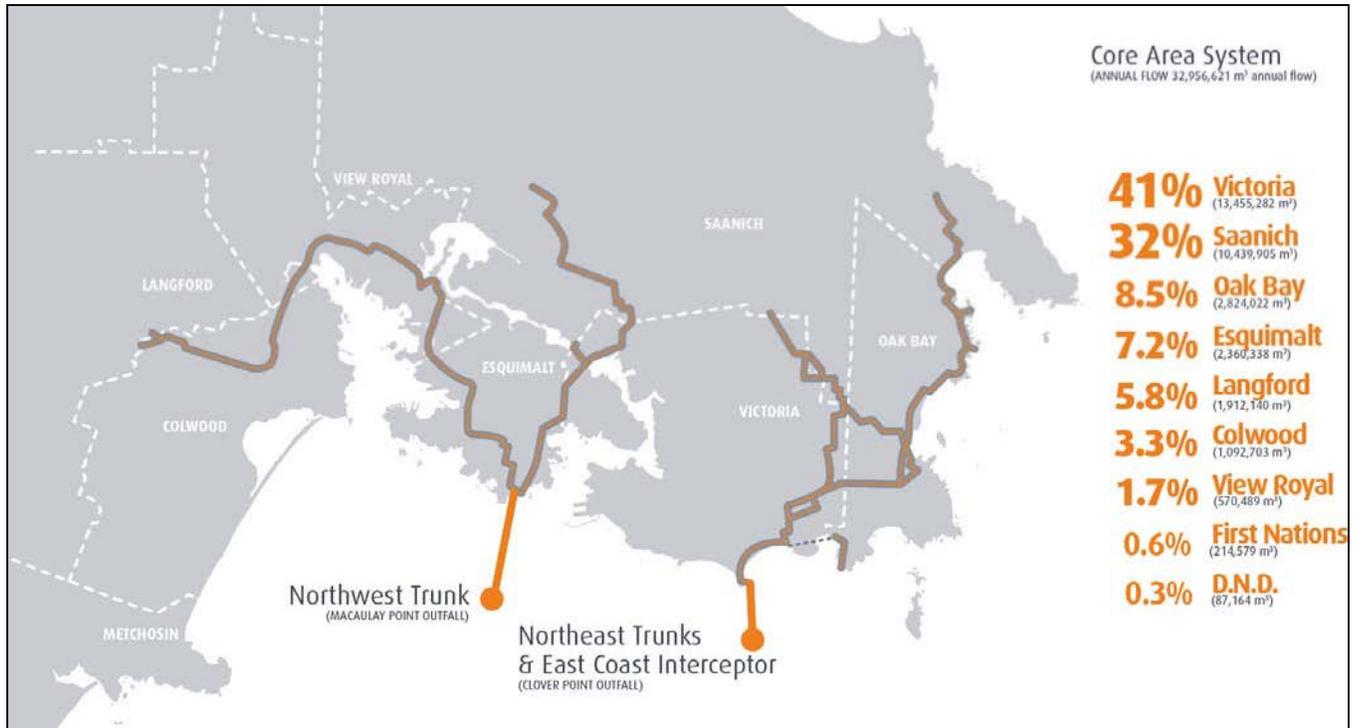
Name: Dave Clancy

Title: Project Director

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2 Services & Programs

2.1 Regional Trunk System Overview*



*2014 Actual Flows

2.2 Conveyance System Operations & Engineering

The services provided under this function include the operation, maintenance, engineering and capital project delivery for the Core Area Wastewater System, including wastewater collection, conveyance, screening and disposal through the ocean outfalls. The conveyance system is primarily composed of the four trunks:

Northwest Trunk - This sewer system includes the Macaulay Point pump station and outfall, as well as the Marigold, Craigflower and Lang Cove pump stations, and interconnecting trunk sewer main infrastructure.

Operating costs are recovered by requisition to all participating members based on member percentage of total sewage input. Costs for the Northwest Trunk are shared by Colwood, Esquimalt, Langford, Oak Bay, Saanich, Victoria and View Royal, and the Songhees and Esquimalt First Nations under a separate agreements.

Northeast Trunk – Clover - This sewer system includes the Clover Point pump station and outfall, as well as the Harling Point pump station and interconnecting trunk sewer main infrastructure.

Operating costs are recovered by requisition to all participating municipalities based on each participant's percentage of total sewage input. Costs for the Northeast Trunk Clover are shared by Oak Bay, Saanich and Victoria.

Northeast Trunk – Bowker - This sewer system includes the Trent pump station and interconnecting trunk sewer main infrastructure.

Operating costs are recovered by requisition to all participating municipalities based on each participant's percentage of total sewage input. Costs for the Northeast Trunk Bowker are shared by Oak Bay, Saanich and Victoria.

East Coast Interceptor - This sewer system includes seven pump stations, the largest being the Currie Road pump station in Oak Bay and the Penrhyn pump station in Saanich East, as well as the interconnecting trunk sewer main infrastructure. The East Coast Interceptor conveys sewer flows to the Northeast Trunk Clover for eventual discharge at Clover Point.

Operating costs are recovered by requisition to all participating municipalities based on each participant's percentage of total sewage input. Costs for the East Coast Interceptor are shared by Oak Bay, Saanich and Victoria.

2.3 Planning, Regulatory, Scientific & Technical Support Programs

The services provided under this function include the planning for and administration of the Core Area Liquid Waste Management Plan and Treatment Program, and the programs that fulfill the commitments made under the CALWMP, including the following programs: Inflow & Infiltration Management, Wastewater & Marine Environment, Regional Source Control, Integrated Watershed Management, Harbours Environmental Action, Onsite Septic System, Trucked Liquid Waste Management and Corrosion & Odour Control. These services and programs are delivered by technical and scientific staff in the Facilities Management & Engineering Services Division and the Environmental Protection Division.

Inflow & Infiltration Management Program (I&I) - Inflow and infiltration refers to rain and groundwater that enters the sanitary sewer. A certain amount of inflow and infiltration is unavoidable and is accounted for in routine sewer design. However, when it exceeds design allowances, sewer capacity is consumed and may result in overflows, risks to health, damage to the environment and increased conveyance costs. The purpose of the program is to reduce the amount of rain and groundwater entering the sanitary sewer system when it is cost-effective to do so. Reduction of inflow and infiltration lowers the risk of sanitary sewer overflows and can decrease the costs of conveying and treating wastewater. This program works closely with municipalities to identify and prioritize problem areas in the conveyance system.

Wastewater & Marine Environment Program (WMEP)—This program provides regulatory compliance monitoring and scientific assessment services to identify the potential effects of the outfalls on human health and the marine environment. The program includes assessment of wastewater flows, surface water and water column quality, the seafloor and organisms living near the outfalls.

The results are shared internally to guide the efforts of the Regional Source Control Program and to inform Infrastructure Operations staff on outfall functionality. Program staff work closely with regulatory agencies to ensure compliance and provide scientific assessment and annual reporting for the general public. The monitoring and analysis follows a rigorous quality assurance and quality control regime, in the field and in the laboratory that ensures the quality of the collected data.

Regional Source Control Program - This program reduces the amount of contaminants that industry, businesses, institutions and households discharge into the district's sanitary sewer systems. This pollution prevention program has been active region-wide since the adoption of the CRD's Sewer Use Bylaw in August 1994. Source control is recognized as a cost-effective way of reducing the impacts of wastewater on the environment.

Integrated Watershed Management Program (IWMP) - This program monitors and investigates stormwater quality at all discharges in the core area. Information and data are provided to municipal staff to inform their municipal infrastructure plans. The program also promotes best practices for stormwater management.

Harbours Environmental Action Program (HEAP) – This program coordinates environmental protection and improvement efforts in Victoria and Esquimalt harbours, Portage Inlet, the Gorge Waterway and Esquimalt Lagoon. HEAP works with community groups, municipal partners and other agencies to achieve the following goals: decrease contaminant inputs, protect and enhance habitat quality, set environmental quality objectives, achieve environmentally protective land uses and monitor environmental quality.

Onsite Septic System Program (Onsite) - Septic systems, are an effective treatment option when designed, installed and maintained properly. This program provides administration and oversight of maintenance requirements for onsite septic systems in Colwood, Langford, Saanich and View Royal. Educational programs are also provided for system owners.

Trucked Liquid Waste Management Program (TLW) - Many industrial, commercial and institutional operations produce liquid waste that is not suitable for discharge to the sanitary sewer or storm water system. These wastes are generated at operations such as: restaurants (grease interceptors), car washes (vehicle wash interceptors), automotive repair shops (oil water separators), parking lots (catch basins / stormwater rehabilitation units), dry cleaners (PERC from dry cleaning machines), photo processors (fixer), and laboratories (various chemicals). These byproducts are considered high-strength liquid or obstructive wastes and it is illegal to discharge these wastes to the sanitary sewer system or the storm drain system. Proper disposal of these wastes requires a licensed hauler to pick up the waste and transport it to a proper disposal facility.

Corrosion & Odour Control Program – This program identifies locations where sewer corrosion is a concern and where odours may cause a public nuisance. Staff also respond to odour nuisance complaints submitted by the public.

2.4 Wastewater Treatment Program

The Core Area Wastewater Treatment Project Board was established 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 (CAWTP) and delegated certain powers, duties and functions to the Project Board under Bylaw 4110 (the CRD Core Area Wastewater Treatment Project Board Delegation Bylaw No. 1, 2016) to implement the project.

The CALWMP is the main planning document for the core area's wastewater treatment program. The current plan (CALWMP Amendment No. 11) was developed by the Core Area Wastewater Treatment Project Board and approved by the BC Minister of Environment on September 30, 2016. The District of Oak Bay has also developed a plan to eliminate the 2 combined sewer overflow points in the core area conveyance system (CALWMP Amendment No. 12); this amendment was conditionally approved on by the BC Ministry of Environment & Climate Change Strategy on June 20, 2018.

The currently approved plan (CALWMP Amendment No. 11) consists of a centralized wastewater treatment plant at McLoughlin Point, a residual treatment facility at Hartland Landfill and a conveyance system of pump stations and pipes throughout the core area to convey wastewater to the respective treatment facilities. This plan is being implemented by the Core Area Wastewater Treatment Project Team. The CAWTP control budget for the project is \$765 million.

3 Governance & Financial Information

The CRD has the authority to collect, convey, treat and dispose of sewage as detailed under the service establishment bylaw (CRD Bylaw 2312).

The CRD Core Area Liquid Waste Management Committee is a standing committee established by the CRD Board to oversee and make recommendations to the Board regarding the administration and regulatory reporting for the CALWMP, core area trunk sewers and sewage disposal systems, and opportunities for resource recovery.

The Core Area Wastewater Treatment Project Board was established by the CRD Board in May of 2016 and has been delegated authority to administer all aspects of the management of the Core Area Wastewater Treatment

Project, including implementation of the project by the project team.

3.1 Financial Overview

Trunk Sewers and Sewage disposal was the second service established for the CRD. The service was established by Letters Patent in 1967. The service was established with flexibility to incorporate service expansion and fairness in costing for both capital and operating costs. During the 1990s, as provincial legislation changed, the Core Area and West Shore municipalities and portions of the Juan de Fuca Electoral Area (Songhees and Esquimalt Nation lands) were established as a Liquid Waste Management Planning Area for those participants (municipality or nation).

Cost Sharing/Apportionment

Operating Costs

Annual Operating Costs – Annual cost sharing for the operation of the four trunk systems (Northwest Trunk, Northeast Trunk (Bowker), Northeast Trunk (Clover), East Coast Interceptor) is based on annual flows from the prior year for each system. There are various flow meters throughout the systems that allow the CRD to determine annual flow volumes received from each participant. The operating costs for each system are then divided amongst the participants based on those flows and then requisitioned/invoiced on an annual basis.

Operating Maintenance Reserves – The trunk systems carry maintenance reserve funds for operating expenses anticipated on a cyclical basis and for minor equipment replacement. Contributions to this reserve fund are made annually through the trunk operating budgets based on the flow volumes from each participant. The funds are drawn down as required for works in each trunk system.

Apportioning annual operating costs to each participant based on annual flow on a ‘trunk-by-trunk’ basis has been the historical method and is not proposed to change with the implementation of the new treatment project works and facilities, except with the addition of the new works and facilities. The operating budget for the new treatment project works and facilities will be established in 2019.

Capital Costs

Annual Capital Projects – Annual capital projects, or ‘minor’ capital, across the four trunk systems has historically been funded through a combination of debt, grants, capital reserve funds and annual requisition. The project costs have been apportioned on the basis of design capacity benefit that each participant derives from each component of the system. Where the benefit is not an increase in capacity, the design capacity benefit is based on the existing maximum allocated capacity for each participant and for each facility.

Capital Reserves – Since capital funds are apportioned by participant, the capital reserves are segregated by participant and drawn down by participant based on the design capacity benefit of specific projects. In light of various new capital investment through the Core Area Wastewater Treatment Project, including the plant, piping infrastructure, outfalls, pumping stations, etc., we will reassess the impact and benefits of normalizing all capital costs through a design capacity benefit model, including minor capital, reserve funds, etc.

Core Area Wastewater Treatment Project – In 2013, the CRD commenced an annual requisition ramp-up to reach an annual funding level that would cover the new treatment program annual operating and capital costs. The annual funding has been providing working capital, funding new debt servicing costs for the project, and funding some project related capital costs directly which will reduce the longer term and ongoing debt servicing costs for the project.