1 Wastewater

Efficient and effective management of the region's wastewater

01 Strategy

STRATEGIES & PLANS

- Core Area Liquid Waste Management Plan
- Saanich Peninsula Liquid Waste Management Plan

CORPORATE PLAN GOALS

1a Optimize Core Area wastewater treatment system
1b Management of wastewater & treatment residuals

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03 Operating Context

ACHIEVEMENTS IN 2026

1. Completed replacement of the Harling Pump Station
2. Completed significant upgrades to the Lang Cove, Marigold and Currie Pump Stations
3. Completed Detailed Design of the Shoreline Trunk Sewer Upgrade
4. Continued to optimise processes at the McLoughlin Wastewater Treatment Plant including chemical dosing, odour control systems and instrumentation improvements.
5. Initiated Strategic Wastewater Planning assignments including outlining a strategic plan and phase one of updating the Liquid Waste Management Plan.
6. Commissioned receipt and treatment of wastewater residuals from the Saanich Peninsula and Sooke Wastewater Treatment Plants at the Residuals Treatment Facility.

FACTORS THAT WILL AFFECT OUR OPERATIONS IN 2027 AND BEYOND

- Liquid Waste Management Plan Updates: the CRD will be initiating updates to both the Saanich Peninsula and Core Area Liquid Waste Management Plans. These plans establish the long-term, provincially approved framework for managing wastewater, stormwater, source control, environmental monitoring, resource recovery and related commitments. Both plans are now due for comprehensive review to reflect current regulatory expectations, population growth, climate resilience, infrastructure renewal, environmental protection priorities, First Nations engagement, and public input. Beginning this work in 2027 will be important to ensure future operational, capital and financial planning for both systems is aligned with updated long-term service needs and provincial requirements.
- Core Area Wastewater System: Monitoring programs for new wastewater infrastructure in the Core Area continue to be implemented and updated. Additional samples will need to be collected and analyzed on an ongoing basis to support the operational commissioning and refinement, and monitoring programs.
- Work continues to optimize the operation and maintenance of the new infrastructure. Activities include refining staffing requirements, infrastructure performance, and operations and maintenance functions to improve effluent quality and reduce community impacts related to the operation.
- The CRD has implemented several out-of-region, non-agricultural biosolids management options aligned with the Long-Term Biosolids Management Strategy while also advancing planning for the preferred option of advanced thermal treatment to convert biosolids into biochar. The CRD will remain reliant on third-party options for biosolids management until the Biochar Production Facility is operational in 2030.
- As the CRD gains more operating experience and implements the outcomes of ongoing optimization works across the Core Area Wastewater System, the annual operating budget will continue to be monitored closely and refined annually.
- Operational cost increases: the costs of essential wastewater system operating supplies, such as coagulant chemicals, have been increasing 30-40% year-over-year which is impacting the cost of service delivery. This trend, seen across North America, is placing significant pressure on service

delivery budgets. In addition, ongoing Canada-U.S. trade negotiations present a potential risk to capital project costs as changes in trade policy could drive up the price of goods and materials.

- Asset Management: the ongoing trend in reviewing, updating and completing asset management plans and the continuous upgrading, replacement and growth of assets in the water and wastewater systems rely on having an up-to-date asset registry, as well as an asset onboarding process. Both the Scottish Water Review in 2018 and the EMA Readiness Assessment of 2020 highlighted the need for a reliable asset registry for Water and Wastewater.
    - The risk of assets not being maintained, replaced in a timely manner and failing could impact the CRD's ability to provide the expected water and wastewater level of service and could even result in environmental and public health and safety risks.
    - The asset registry is an important step in ensuring that assets are captured in the Maintenance Management System and Preventative Maintenance Plans are developed. This information is also critical with regard to capital and financial planning for the utility services.
- Aging Infrastructure: infrastructure is of various ages and in several cases, large-scale infrastructure renewal will be required to maintain a state of good repair.
- Community Growth: member municipalities continue to revise Official Community Plans to reflect provincial guidelines on housing targets. This potential increase in population and wastewater flows may affect timing of proposed infrastructure upgrades. The CRD plans to be proactive in working with member municipalities to identify areas of growth and reassess timing of infrastructure upgrades.
- Long-Term Biosolids Management Strategy: annual costs are increasing for biosolids management as the CRD increases its portfolio of options to ensure reliability and redundancy for the beneficial use of Class A Biosolids. Implementation of the CRD's Long-Term Biosolids Management Strategy will introduce new equipment and advanced thermal (carbonisation) technology at the Residuals Treatment Facility to convert biosolids into biochar. This transition will have long-term implications for facility operations, maintenance, staffing and asset management.

04 Services

The services listed below rely on the support of several corporate and support divisions to operate effectively on a daily basis. More information about these services is available in the Corporate Services and Government Relations Community Need Summaries.

Wastewater systems

Services include wastewater conveyance and tertiary treatment for Core Area, and conveyance and secondary treatment for Saanich Peninsula.

SERVICE BUDGET REFERENCES[1]

- 3.717 Core Area Wastewater Operations
- 3.798C Core Area Wastewater Capital
- 3.718 Saanich Peninsula Wastewater
- 3.720 Saanich Peninsula Liquid Waste Management Planning Budget
- 3.750 Core Area Liquid Waste Management Planning Budget

1. WASTEWATER SYSTEM OPERATIONS

Description

Wastewater treatment, collection and transmission system operation and monitoring. System and facility maintenance, consumables management and preventative maintenance. Respond to wastewater system emergencies, service interruptions and wastewater overflows.

What you can expect from us

- 24/7 wastewater treatment
- Conveyance system operation
- System monitoring
- Customer service and odour monitoring/investigation
- System and facility maintenance
- Consumables management
- 24/7 operator response to system emergencies, service interruptions, wastewater overflows and public and environmental health protection

Staffing Complement

Wastewater Infrastructure Operations: 64 FTE (including 5 Managers and 2 Administrative Support)

[1] Service budget(s) listed may fund other services

2. INFRASTRUCTURE PLANNING & ENGINEERING

Description

Overseeing the engineering, planning and capital project delivery related to wastewater infrastructure. Strategic asset management for all wastewater systems including modeling and capacity analysis, vulnerability assessment and infrastructure renewal plans. Project design, procurement and delivery of projects planned each year, on time and on budget. Installations, equipment replacement and capital projects support, as well as support of Infrastructure Operations through engineering services such as process, civil, electrical and mechanical investigation and optimization.

What you can expect from us

- Asset management plans
- Manage capital program for two wastewater services
- Proactive capital planning for two wastewater services
- Ongoing condition assessment to inform the capital program and ensure wastewater systems assets remain in a state of good repair
- Incorporating growth and expansion demands into future plans
- Infrastructure renewal and upgrades
- Capital project support
- Engineering support of utility operations for the wastewater services in the areas of process optimization and troubleshooting (including odour treatment systems and energy efficiency), management of change, and root cause failure analysis
- Long-range planning and implementation of treatment system improvements
- Feasibility studies, including cost estimates, technical reports and recommendations,
- Detailed technical research and analysis to support plant operations

Staffing Complement

Wastewater Engineering and Planning: 4 FTE (including 1 Manager)
Process Engineering: 3 FTE (including 1 Manager)

3. CORPORATE ASSET & MAINTENANCE MANAGEMENT

Description

Leading the delivery of the actions in the Corporate Asset Management Strategy, and reporting on the status of asset management for the CRD. Implementing and enhancing enterprise asset management systems for asset information and analysis which informs capital plan priorities. Planning and scheduling asset interventions for water and wastewater operations with the goal of optimizing our maintenance program, minimizing failures and extending the life of the CRD's asset investments.

What you can expect from us

- Develop and implement standards and processes for asset and maintenance management activities
- Plan and schedule work management activities for water and wastewater services, and build asset registers for all CRD assets eventually, and work towards an enterprise asset management approach

- Audit and maintain the asset registers for water and wastewater services
- Procure, implement, and enhance an asset and work management system for asset reporting and decision-making
- Lead or support the development of asset management plans for all services
- Lead the delivery of the actions in the Corporate Asset Management Strategy
- Maintain safe and efficient maintenance practices in collaboration with field staff and streamlined data collection for asset reporting and decision-making
- Provide fleet vehicle maintenance and repairs
- Provide inventory management (parts and equipment) for maintenance activities
- Manage consultants and contractors providing asset and maintenance management services.

Staffing Complement

Corporate Asset and Maintenance Management: 25 FTE (including 3 managers)

4. CAPITAL PROJECT DELIVERY

Description

Capital delivery services, including project management, various types of studies, detailed design, procurement, construction management and commissioning services that support several community needs. Coordinating with the service leaders to procure, construct, commission, and hand off physical infrastructure projects to the related service. In addition to the water services, this team also provides capital delivery services across the CRD.

What you can expect from us

- Develop and administer the capital plans for the 15 Water and Wastewater services and for one Southern Gulf Islands Small Craft Harbours Facilities budget with a current five-year budget of $690 million
- Currently directly managing 95 active projects/programs of varying size and complexity, with a combined 2025 budget of $96 million
- Provide support to other working groups, as necessary, in facilitating their capital planning requirements or providing guidance related to project delivery
- Projects include improvements at water treatment plants and pump stations, wastewater treatment plants and pump stations, water distribution and transmission main replacements, water storage tank improvements, sewer system improvements (including trenchless rehabilitation), dam safety improvements, docks and harbours upgrades and more.
- Work collaboratively with various planning and operations groups to support ongoing successful delivery of water and wastewater services for the residents of the CRD

Staffing Complement

Corporate Capital Project Delivery Services: 10 FTE (including 2 Managers) + leadership support shared with Water

5. ENVIRONMENTAL INNOVATION

Description

Overseeing and optimizing the third-party operated Residuals Treatment Facility, which produces Class A biosolids, and coordinating the beneficial use of biosolids through a portfolio of beneficial use pathways. Advancing new and innovative resource recovery opportunities, including the development of biochar production equipment designed to convert biosolids into biochar, destroy contaminants of emerging concern, and deliver measurable climate benefits. Leading climate action initiatives including the planning and development of heat recovery systems, energy efficiency upgrades and other resource recovery initiatives for wastewater treatment infrastructure.

What you can expect from us

- Manage and coordinate approximately 10 tonnes per day of Class A biosolids to ensure their beneficial use across a portfolio of out-of-region, non-agricultural options
- Oversee the third-party operations of the Residuals Treatment Facility to ensure compliance with reliability, performance and regulatory requirements
- Plan and implement the Biochar Carbonisation Project to transform wastewater residual biosolids into biochar, mitigate environmental impacts and deliver climate
- Provide technical leadership to explore and develop capital improvements to wastewater infrastructure to recover resources and energy, reduce emissions, and improve energy efficiency
- Lead continuous improvement initiatives to optimize wastewater residuals management, resource recovery and environmental performance.

Staffing Complement

Environmental Innovation: 2 FTE (including 1 Manager) + leadership support

Environmental Protection

Regulatory and non-regulatory services and a support role across the organization that focuses on contaminant reduction, monitoring, assessment and reporting associated with liquid waste treatment.

SERVICE BUDGET REFERENCES[2]

- 1.536 Stormwater Quality Management - Core Area
- 1.537 Stormwater Quality Management - Peninsula
- 1.538 Source - Stormwater Quality - Saanich Peninsula
- 1.577 Environmental Operations
- 3.700 Septage Disposal Agreement
- 3.709 Inflow & Infiltration Enhancement Program
- 3.750 Liquid Waste Management Plan-Public Involvement Process

6. REGIONAL SOURCE CONTROL

Description

Administration, monitoring and reporting of compliance with regional bylaw.

What you can expect from us

- Inspect, monitor and enforcement for businesses and institutions connected to sanitary sewer
- Promote contaminant reduction associated with sanitary and stormwater systems

Staffing Complement

Environmental Protection: 8.25 FTE + leadership support

7. CORE AREA AND SAANICH PENINSULA WASTEWATER & MARINE ENVIRONMENTAL PROGRAM

Description

Oversight for wastewater monitoring and assessment and reporting to meet regulatory requirements.

What you can expect from us

- Marine outfall monitoring, assessment and reporting services to demonstrate compliance with federal and provincial legislation
- Update of Liquid Waste Management Plans

Staffing Complement

Environmental Protection: 3.5 FTE + leadership support

[2] Service budget(s) listed may fund other services

8. ON-SITE WASTEWATER MANAGEMENT

Description

Regulatory oversight for onsite wastewater systems and education and outreach services across the region.

What you can expect from us

- Promote and monitor compliance with regional bylaw.

Staffing Complement

Environmental Protection: 0.7 FTE + leadership support

9. SEPTAGE SERVICE

Description

Administration, monitoring and reporting of regional septage service.

What you can expect from us

- Negotiate and manage one septage disposal contract servicing the capital region.
- Planning for future service delivery resilience

Staffing Complement

Environmental Protection: 0.1 FTE + leadership support

10. WATERSHED MANAGEMENT PROGRAM

Description

Promote environmental stewardship associated with sanitary and stormwater systems, contaminants and flows.

What you can expect from us

- Promote public awareness and stewardship initiatives.
- Public education and engagement in the region to promote sustainable behaviour through campaigns, initiatives and services.

Staffing Complement

Environmental Protection: 1.5 FTE

11. LABORATORY SERVICES

Description

An ISO/IEC 17025 accredited, provincially approved lab providing analysis for CRD Drinking Water and Wastewater Systems.

What you can expect from us

- Analyze and report on physical, chemical, algal, and microbiological samples (source water and distribution systems; analyze wastewater compliance, optimization, and process samples)
- Provide defensible compliance results and inform CRD Water and Wastewater operations on system performance.

Staffing Complement

Environmental Protection: 11 FTE (combined water/wastewater) + leadership support

05 Initiatives

Below are the initiatives listed in the Capital Regional District 2023-2026 Corporate Plan and the related initiative business cases (IBCs). For an overview of the financial impacts, including cost of staffing, please refer to the Provisional Budget report.

Initiative	Implementation year(s)
1a Goal: Optimize Core Area wastewater treatment system	
1a-1 Refine and optimize operations at the McLoughlin Wastewater Treatment Plant to reduce cost, improve efficiency and odour controls	Ongoing
▸ IBC 1a-1.1 Lab Technician (Core Area)	2024-2026
1a-2 Support other infrastructure projects that form part of the Core Area wastewater treatment system, including the Residuals Treatment Facility and conveyance system	Ongoing
▸ IBC 1a-2.1 Environmental Monitoring Program – Environmental Technician Odour	2024-2026
▸ IBC 1a-2.2 Facilities Maintenance Worker	2024-ongoing
1b Goal: Management of wastewater & treatment residuals	
1b-1 Implement a development cost charge program for the Core Area wastewater service	2029-2030
▸ ***RELATED IBC*** *see 1b-2.1 Sr Project Manager (Wastewater Engineering) below*	2027-ongoing
1b-2 Deliver master plans, capital plans and operations for wastewater treatment and conveyance to service current and future population, and address infrastructure deficiencies	Ongoing
▸ **NEW IBC** 1b-2.1 Sr Project Manager (Wastewater Engineering)	2027-ongoing
1b-3 Update the Liquid Waste Management Plan for Saanich Peninsula and Core Area	2027-2029
1b-4 Develop and implement a long-term Biosolids Management Plan	2022-2024
▸ IBC 1b-4.1 Biosolids Coordinator	2024-2027
▸ IBC 1b-4.2 Innovative Projects Work Unit	2025-ongoing
▸ **NEW IBC** 1b-4.3 Biosolids Coordinator (Conversion)	2027-ongoing
▸ **NEW IBC** 1b-4.4 Environmental Innovation Engineer	2027-ongoing

06 Performance

GOAL 1A: OPTIMIZE CORE AREA WASTEWATER TREATMENT SYSTEM & GOAL 1B: MANAGEMENT OF WASTEWATER & TREATMENT RESIDUALS

Targets & Benchmarks

- N/A

Measuring Progress

Performance Measure(s)	Service	Type	2025 Actual	2026 Forecast	2027 Target
1. Volume of biosolids beneficially used	All Wastewater Services	Quantity	100%	100%	100%
2. Wastewater effluent quality non-compliance events with provincial and federal regulatory requirements	Core Area Wastewater	Quantity	6	10	8
	Saanich Peninsula Wastewater	Quantity	1	1	0
3. Number of wastewater overflows or flow exceedances[1]	Core Area Wastewater	Quantity	12	8	8
	Saanich Peninsula Wastewater	Quantity	0	0	0
4. Total volume of wastewater collected and treated[2]	Core Area Wastewater	Quantity	35,350,000	35,500,000	35,600,000
	Saanich Peninsula Wastewater	Quantity	3,550,000	3,550,000	3,550,000
5. Operating cost per megaliter of wastewater collected and treated[3]	Core Area Wastewater	Quantity	999	1,117	1,203
	Saanich Peninsula Wastewater	Quantity	1,388	1,471	1,566
6. Number of odour complaints related to operation	Core Area Wastewater	Quantity	45	30	30
	Saanich Peninsula Wastewater	Quantity	0	0	0
7. Delivery of annual capital program[4]	Core Area Wastewater	Quantity	26,000,000	20,000,000	13,000,000
	Saanich Peninsula Wastewater	Quantity	4,000,000	6,000,000	5,000,000
8. Preventative maintenance completion[5]	Core Area Wastewater	Quantity	86%	87%	89%
	Saanich Peninsula Wastewater	Quantity	94%	94%	94%

[1] *Target is zero but impacted by wet weather events*

[2] *Volume is expressed in cubic metres*

[3] *Expressed in dollars*

[4] *Expressed in dollars spent*

[5] *Expressed as percentage of planned maintenance work completed*

07 Business Model

PARTICIPANTS	Core Area Municipalities (Colwood, Esquimalt, Langford, Oak Bay, Saanich, Victoria, View Royal) Saanich Peninsula Municipalities (Central Saanich, North Saanich, Sidney)
FUNDING SOURCES	Requisitions and user charges
GOVERNANCE	Core Area Liquid Waste Management Committee Saanich Peninsula Wastewater Commission