



**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE
MEETING OF WEDNESDAY, OCTOBER 11, 2023**

SUBJECT **Service Planning 2024 – Wastewater Community Need Summary**

ISSUE SUMMARY

To provide strategic context and an overview of services, initiatives and performance data related to the Wastewater Community Need.

BACKGROUND

The Capital Regional District (CRD) Board approved the 2023-2026 Board Priorities on March 8, 2023. Staff then developed the 2023-2026 CRD Corporate Plan which was approved by the CRD Board on April 12, 2023.

The CRD Corporate Plan presents the work the organization needs to deliver over the four-year term, along with the critical regional, sub-regional and local services, to meet the region's most important needs (i.e., Community Needs) and advance the Board's Vision and Priorities. Board Priorities, Corporate Plan initiatives and core service delivery form the foundation of the five-year financial plan.

The 2024 planning cycle marks the first year of the implementation of the 2023-2026 CRD Corporate Plan. The CRD's annual service plans, known as Community Need Summaries, provide an overview of the operational and strategic context, services levels, initiatives, and performance data for each Community Need. They also provide details of the initiatives, associated staffing, timing and service levels required to advance the work in future years.

The Wastewater Community Need Summary is attached as Appendix A. The desired outcome is efficient and effective management of the region's wastewater.

The CRD reports on the progress of its initiatives and services on a regular basis. The Board receives updates about the Board Strategic Priorities through the Chief Administrative Officer Quarterly Progress Reports. The Board also receives an overview of progress made on delivering the Corporate Plan twice a year at the strategic check-in and provisional budget meetings, which take place in the spring and fall respectively. The next strategic check-in will take place in spring 2024. During the year, standing committees and commissions also fulfill an oversight and advisory role in relation to the work.

ALTERNATIVES

Alternative 1

The Core Area Liquid Waste Management Committee recommends the Committee of the Whole recommend to the Capital Regional District Board:

That Appendix A, Community Need Summary – Wastewater, be approved as presented and form the basis of the Provisional 2024-2028 Financial Plan.

Alternative 2

The Core Area Liquid Waste Management Committee recommends the Committee of the Whole recommend to the Capital Regional District Board:

That Appendix A, Community Need Summary – Wastewater, be approved as amended and form the basis of the Final 2024-2028 Financial Plan.

IMPLICATIONS

Governance Implications

In 2024, staff have prioritized programs and initiatives that:

- Advance 2023-2026 Board Priorities or Corporate Plan initiatives;
- Operationalize capital investments; and/or
- Are necessary to maintain a core service level following a regulatory change or where there is a safety risk to customers, communities, or staff.

The Executive Leadership Team (ELT) has reviewed and assessed all business cases and confirmed alignment with the criteria. ELT has determined that the consolidated package of work is appropriate and a proportional response to the CRD Boards' and communities' expectations of the organization.

Financial Implications

To exercise constraint and cost containment, the CRD Board directed staff to keep the core inflationary adjustment to 3.5% through the 2024 Service and Financial Planning Guidelines. Staff and management have taken the necessary steps to mitigate the financial impact of proposed initiatives as well as cost escalation and high inflation rate experienced in 2022 through to 2023.

The 2024 operating costs include non-negotiable collective agreement increases from 2023 coupled with chemical and carbon media cost escalations and additional landfill tipping fees for biosolids delaying the receipt of tipping fee revenue contributed to the 2024 core operating cost increase exceeding the 3.5% threshold.

Financial and staff impacts for initiatives will be summarized and included in the provisional budget which will be presented at the Committee of the Whole meeting scheduled for October 25, 2023. Starting this year, this will also include a five-year forecast of staffing level changes, which will be reviewed annually.

A separate supplemental service budget report will be submitted to the Core Area Liquid Waste Management Committee.

Service Delivery Implications

Appendix A includes information about existing service delivery, operational considerations and performance. Additional information has been provided below about the proposed changes for 2024.

Staff are proposing to advance four new initiatives for the Wastewater Community Need that have financial implications for 2024, as shown in Table 1. The key drivers for the initiatives are:

1. advancing a Board or Corporate Plan Priority;
2. operationalizing capital investments; and
3. adjustments to core service levels to maintain safety.

Table 1. Wastewater Community Need Initiatives (2024)

Initiative	Implementation year(s)	Staff impacts (2024)	Incremental cost (2024)	Funding source
1a-1.1 Lab Technician (Core Area)	2024-2026	1 Term Extended	\$111,000	Requisition
1a-2.1 Environmental Monitoring Program – Environmental Technician Odour	2024-2026	1 Term Extended	\$111,000	Requisition
1a-2.2 Facilities Maintenance Worker	2024-ongoing	1 Term Converted	\$106,000	Other
1b-4.1 Biosolids Coordinator	2024-2027	1 Term Extended	\$111,000	Requisition

The information in Table 1 reflects the business case costs which ELT reviewed as part of their annual assessment of initiatives. The financial impacts reflect full program costs, including cost of staffing.

1a-1.1 Lab Technician Core Area

Lab Services are an essential component of wastewater service delivery and help ensure fewer contaminants enter the marine ecosystem. Since the CRD began operating the McLoughlin Wastewater Treatment Plant, Lab Services has relied on a term-based Laboratory Technician 2 position to fulfill ongoing operational requirements identified by Integrated Water Services. This position will expire in December 2023.

Initiative 1a-1.1 seeks to extend the term position for three years to ensure service levels are maintained to support the wastewater service going forward. This position is in the Environmental Services division.

1a-2.1 Environmental Monitoring Program - Environmental Technician Odour

Environmental monitoring is required by provincial regulators for all seven of the CRD’s wastewater treatment plants. The CRD has relied on a term-based environmental and wastewater sampling technician position since the implementation of the federal wastewater regulations in 2012. It was envisioned that the role would be reviewed once the McLoughlin Point Wastewater Treatment Plant was operational, and the ongoing wastewater sampling and odour support needs were determined. The position is expiring in December 2023.

The complexity and scope of monitoring requirements has increased with the commissioning of the new McLoughlin Point Wastewater Treatment Plant. In response, initiative 1a-2.1 seeks to extend the term position for three years to maintain service delivery and continuity of sampling and odour complaint response support to Integrated Water Services, and other internal divisions. This position is in the Environmental Services division.

1a-2.2 Facilities Maintenance Worker 4

Facilities Management (FM) continues to grow as the CRD centralizes maintenance and operations roles throughout the organization. In 2023, FM took on the responsibility of maintaining the buildings (pump stations) for the core area conveyance line to allow Integrated Water Services staff to concentrate on the systems. This transfer was phased over two years and a term position was recruited to provide temporary support to FM. The division is now expanding into other wastewater sites on a fee-for-service basis. It also provides project management services for a variety of projects cross-organization, from new building construction to interior renovations.

Initiative 1a-2.2 seeks to convert the term position to regular ongoing to ensure the Facilities Management & Engineering Services division can deliver the maintenance plan moving forward.

1b-4.1 Biosolids Coordinator

The management of biosolids is an integral component of the new core area wastewater system. Day-to-day coordination of core area biosolids has been more challenging than anticipated and is only expected to become more complex as short-term management options are implemented and operationalized, and as staff develop the long-term planning and ongoing management plan. The current auxiliary position expires in March 2024.

Initiative 1b-4.1 seeks to extend the term position for three years to ensure continuity of service to Integrated Water Services and its need to manage core area biosolids and optimize its distribution for beneficial reuse. This position is in the Environmental Services division.

CONCLUSION

Capital Regional District (CRD) staff are progressing initiatives identified in the 2023-2026 CRD Corporate Plan, including the CRD Board Priorities. The CRD Board and commissions with delegated authorities determine resourcing through the annual review and approval of the provisional financial plan. To support decision-making, staff provide recommendations on funding, timing and service levels through the service and financial planning processes.

RECOMMENDATION

The Core Area Liquid Waste Management Committee recommends the Committee of the Whole recommend to the Capital Regional District Board:

That Appendix A, Community Need Summary – Wastewater, be approved as presented and form the basis of the Provisional 2024-2028 Financial Plan.

Submitted by:	Alicia Fraser, P. Eng., General Manager, Integrated Water Services
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: Community Need Summary – Wastewater

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

02 Contacts

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03 Operating Context

ACHIEVEMENTS IN 2023

1. Completed Bowker Sewer Rehabilitation Phase 1. The aging Northeast Trunk - Bowker sanitary sewer system is made from large diameter cast-in-place brick and non-reinforced concrete pipes. Based on results of video inspection about 2,000 metres of sanitary sewer pipes from Foul Bay Road towards Currie Pump Station were deteriorating and in need of repair and rehabilitation. The pipes were lined from the inside using a trenchless technology method, cured-in-place-pipe, to minimize above ground disturbance.
2. Started Phase 1 of the Regional Wastewater Development Cost Charge Program. The need for such a program was identified in the CRD 2023-2026 Corporate Plan and will be used to fund future growth-related regional wastewater system improvements.
3. Various McLoughlin Wastewater Treatment Plant Improvement Projects. These projects refine and optimize operations at the McLoughlin Wastewater Treatment Plant to reduce cost, improve efficiency and odour controls.

FACTORS THAT WILL AFFECT OUR OPERATIONS IN 2024 AND BEYOND

- **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 ongoing 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 continues to implement its short-term biosolids strategy, while also advancing long-term planning, options analysis and pilot testing.
- 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 has been seen across North America.
- **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 regards 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.
- Facility Management's role in supporting maintenance of superstructures in wastewater is being defined.

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 and small wastewater systems

Services include wastewater conveyance and tertiary treatment for Core Area, and conveyance and secondary treatment for Saanich Peninsula, and the small wastewater systems in the Electoral Areas.

SERVICE BUDGET REFERENCES¹

- › 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. CAPITAL PROJECT DELIVERY

Description

Project design, procurement and delivery of projects planned each year, on time and budget. Installations, equipment replacement and capital projects support.

What you can expect from us

- ▶ Capital program for seven services
- ▶ Infrastructure renewal and upgrades
- ▶ Capital project support

Staffing Complement

Capital Projects: **8 FTE (including 1 Manager)**

3. INFRASTRUCTURE PLANNING

Description

Strategic asset management for all services/systems including modeling and capacity analysis, vulnerability assessment, infrastructure renewal plans.

What you can expect from us

- ▶ Asset management plans
- ▶ Manage capital plans for seven wastewater services
- ▶ Proactive capital planning for all seven wastewater services with a 15-year outlook
- ▶ 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

Staffing Complement

Wastewater Engineering and Planning: **5 FTE (including 1 Manager)**

4. PROCESS ENGINEERING SERVICES

Description

Support of Infrastructure Operations through engineering services such as process, civil, electrical and mechanical investigation and optimization.

What you can expect from us

- ▶ Engineering support of utility operations for the seven 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

Process Engineering: 2 FTE (including 1 Manager)

Environmental Protection

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

SERVICE BUDGET REFERENCES²

- | | |
|---|--|
| ▶ 1.536 Stormwater Quality Management - Core Area | ▶ 3.700 Septage Disposal Agreement |
| ▶ 1.537 Stormwater Quality Management - Peninsula | ▶ 3.709 Inflow & Infiltration Enhancement Program |
| ▶ 1.538 Source - Stormwater Quality - Saanich Peninsula | ▶ 3.750 Liquid Waste Management Plan- Public Involvement Process |
| ▶ 1.577 Environmental Operations | ▶ 3.752 Stage 3 Harbour Studies |
| | ▶ 3.756 Harbours Environmental Action |

5. 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

6. 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

² Service budget(s) listed may fund other services

Staffing Complement

Environmental Protection: 3.5 FTE + leadership support

7. RESIDUALS TREATMENT FACILITY

Description

Administration of the Project Agreement for operation of the RTF and biosolids beneficial use strategy.

What you can expect from us

- ▶ Monitoring and compliance reporting.

Staffing Complement

Environmental Protection: 1.2 FTE + leadership support

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.

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 behavior through campaigns, initiatives and services.

Staffing Complement

Environmental Protection: **1.5 FTE**

05 Initiatives

Below are the initiatives listed in the [Capital Regional District 2023-2026 Corporate Plan](#) and the related initiative business cases (IBCs), including financial and staffing impacts, proposed for 2024. The financial impacts reflect full program costs, including cost of staffing.

Initiative	Implementation year(s)	Impacts in 2024	
1a-1 Refine and optimize operations at the McLoughlin Wastewater Treatment Plant to reduce cost, improve efficiency and odour controls	2023-2024	\$111K requisition	1 Term Extended
▶ NEW IBC 1a-1.1 Lab Technician (Core Area)	2024-2026	\$111K requisition	1 Term Extended
1a-2 Support other infrastructure projects that form part of the Core Area wastewater treatment system, including the Residuals Treatment Facility and conveyance system	2023		
▶ NEW IBC 1a-2.1 Environmental Monitoring Program – Environmental Technician Odour	2024-2026	\$111K requisition	1 Term Extended
▶ NEW IBC 1a-2.2 Facilities Maintenance Worker	2024-ongoing	\$106K other	1 Term Converted
1b-1 Implement a development cost charge program for the Core Area wastewater service	2024	-	-
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	-	-
1b-3 Update the Liquid Waste Management Plan for Saanich Peninsula and Core Area	2024-2025	-	-
1b-4 Develop and implement a long-term Biosolids Management Plan	2022-2024		existing
▶ NEW IBC 1b-4.1 Biosolids Coordinator	2024-2027	\$111K requisition	1 Term Extended

06 Performance

GOAL 1A: OPTIMIZE CORE AREA WASTEWATER TREATMENT SYSTEM

GOAL 1B: MANAGEMENT OF WASTEWATER & TREATMENT RESIDUALS

Targets & Benchmarks

Indicators benchmarked in 2022/2023 include:

- Energy use per megalitre of wastewater treated: n/a
- Utilization of gas generated at the Residuals Treatment Facility: n/a

Measuring Progress

Performance Measure(s)	Service	Type	2022 Actual	2023 Forecast	2024 Target
1. Volume of biosolids beneficially used	All Wastewater Services	Quantity	600	1,600	3,600
2. Wastewater effluent quality non-compliance events with provincial and federal regulatory requirements	Core Area Wastewater	Quantity	10	5	0
	Saanich Peninsula Wastewater	Quantity	0	0	0
	Salt Spring Island Liquid Waste	Quantity	6	8	0
	Local Services	Quantity	18	12	10
3. Number of wastewater overflows or flow exceedances	Core Area Wastewater	Quantity	36	20	0
	Saanich Peninsula Wastewater	Quantity	0	0	0
	Salt Spring Island Liquid Waste	Quantity	2	2	0
	Local Services	Quantity	17	15	15
4. Total volume of wastewater collected and treated ²	Core Area Wastewater	Quantity	33,851,491	34,000,000	34,500,000
	Saanich Peninsula Wastewater	Quantity	3,588,904	3,500,000	3,700,000
	Salt Spring Island Liquid Waste	Quantity	178,734	180,000	182,000
	Local Services	Quantity	301,043	300,000	305,000
5. Operating cost per megaliter of wastewater collected and treated ³	Core Area Wastewater	Quantity	686	807	811
	Saanich Peninsula Wastewater	Quantity	1,014	1,099	1,011
	Salt Spring Island Liquid Waste	Quantity	4,431	4,538	4,527
	Local Services	Quantity	5,300	5,579	5,404
6. Number of odour complaints related to operation	Core Area Wastewater	Quantity	98	95	90
	Saanich Peninsula Wastewater	Quantity	0	1	1
	Salt Spring Island Liquid Waste	Quantity	0	0	0
	Local Services	Quantity	2	2	2
7. Delivery of annual capital program ⁴	Core Area Wastewater	Quantity	6,500,000	24,000,000	32,500,000
	Saanich Peninsula Wastewater	Quantity	2,200,000	3,000,000	3,200,000
	Local Services	Quantity	802,000	7,000,000	4,000,000
8. Preventative maintenance completion ⁵	Core Area Wastewater	Quantity	70%	82%	85%
	Saanich Peninsula Wastewater	Quantity	87%	94%	95%
	Salt Spring Island Liquid Waste	Quantity	84%	88%	91%
	Local Services	Quantity	89%	95%	95%

² Volume is expressed in cubic meters

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) and Songhees and Esquimalt First Nations

Saanich Peninsula Municipalities (Central Saanich, North Saanich, Sidney) and Saanich Peninsula First Nations

Local Wastewater Service Areas in the Electoral Areas (Magic Lake, Port Renfrew, Ganges, Maliview, SSI Liquid Waste)

FUNDING SOURCES

Requisitions and user charges (Local Wastewater Service Areas)

GOVERNANCE

[Core Area Liquid Waste Management Committee](#)

[Saanich Peninsula Wastewater Commission](#)

[Electoral Areas Committee](#)

[Local Wastewater Service Area Committees and Commissions](#)

**REPORT TO SAANICH PENINSULA WASTEWATER COMMISSION
MEETING OF THURSDAY, OCTOBER 19, 2023**

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Submitted by:	Alicia Fraser, P. Eng., General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

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Efficient and effective management of the region’s wastewater

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CORPORATE PLAN GOALS

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

02 Contacts

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03 Operating Context

ACHIEVEMENTS IN 2023

1. Completed Bowker Sewer Rehabilitation Phase 1. The aging Northeast Trunk - Bowker sanitary sewer system is made from large diameter cast-in-place brick and non-reinforced concrete pipes. Based on results of video inspection about 2,000 metres of sanitary sewer pipes from Foul Bay Road towards Currie Pump Station were deteriorating and in need of repair and rehabilitation. The pipes were lined from the inside using a trenchless technology method, cured-in-place-pipe, to minimize above ground disturbance.
2. Started Phase 1 of the Regional Wastewater Development Cost Charge Program. The need for such a program was identified in the CRD 2023-2026 Corporate Plan and will be used to fund future growth-related regional wastewater system improvements.
3. Various McLoughlin Wastewater Treatment Plant Improvement Projects. These projects refine and optimize operations at the McLoughlin Wastewater Treatment Plant to reduce cost, improve efficiency and odour controls.

FACTORS THAT WILL AFFECT OUR OPERATIONS IN 2024 AND BEYOND

- **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 ongoing 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 continues to implement its short-term biosolids strategy, while also advancing long-term planning, options analysis and pilot testing.
- 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 has been seen across North America.
- **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 regards 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.
- Facility Management's role in supporting maintenance of superstructures in wastewater is being defined.

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 and small wastewater systems

Services include wastewater conveyance and tertiary treatment for Core Area, and conveyance and secondary treatment for Saanich Peninsula, and the small wastewater systems in the Electoral Areas.

SERVICE BUDGET REFERENCES¹

- › 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. CAPITAL PROJECT DELIVERY

Description

Project design, procurement and delivery of projects planned each year, on time and budget. Installations, equipment replacement and capital projects support.

What you can expect from us

- ▶ Capital program for seven services
- ▶ Infrastructure renewal and upgrades
- ▶ Capital project support

Staffing Complement

Capital Projects: **8 FTE (including 1 Manager)**

3. INFRASTRUCTURE PLANNING

Description

Strategic asset management for all services/systems including modeling and capacity analysis, vulnerability assessment, infrastructure renewal plans.

What you can expect from us

- ▶ Asset management plans
- ▶ Manage capital plans for seven wastewater services
- ▶ Proactive capital planning for all seven wastewater services with a 15-year outlook
- ▶ 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

Staffing Complement

Wastewater Engineering and Planning: **5 FTE (including 1 Manager)**

4. PROCESS ENGINEERING SERVICES

Description

Support of Infrastructure Operations through engineering services such as process, civil, electrical and mechanical investigation and optimization.

What you can expect from us

- ▶ Engineering support of utility operations for the seven 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

Process Engineering: 2 FTE (including 1 Manager)

Environmental Protection

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

SERVICE BUDGET REFERENCES²

- | | |
|---|--|
| ▶ 1.536 Stormwater Quality Management - Core Area | ▶ 3.700 Septage Disposal Agreement |
| ▶ 1.537 Stormwater Quality Management - Peninsula | ▶ 3.709 Inflow & Infiltration Enhancement Program |
| ▶ 1.538 Source - Stormwater Quality - Saanich Peninsula | ▶ 3.750 Liquid Waste Management Plan- Public Involvement Process |
| ▶ 1.577 Environmental Operations | ▶ 3.752 Stage 3 Harbour Studies |
| | ▶ 3.756 Harbours Environmental Action |

5. 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

6. 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

² Service budget(s) listed may fund other services

Staffing Complement

Environmental Protection: 3.5 FTE + leadership support

7. RESIDUALS TREATMENT FACILITY

Description

Administration of the Project Agreement for operation of the RTF and biosolids beneficial use strategy.

What you can expect from us

- ▶ Monitoring and compliance reporting.

Staffing Complement

Environmental Protection: 1.2 FTE + leadership support

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.

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 behavior through campaigns, initiatives and services.

Staffing Complement

Environmental Protection: **1.5 FTE**

05 Initiatives

Below are the initiatives listed in the [Capital Regional District 2023-2026 Corporate Plan](#) and the related initiative business cases (IBCs), including financial and staffing impacts, proposed for 2024. The financial impacts reflect full program costs, including cost of staffing.

Initiative	Implementation year(s)	Impacts in 2024	
1a-1 Refine and optimize operations at the McLoughlin Wastewater Treatment Plant to reduce cost, improve efficiency and odour controls	2023-2024	\$111K requisition	1 Term Extended
▶ NEW IBC 1a-1.1 Lab Technician (Core Area)	2024-2026	\$111K requisition	1 Term Extended
1a-2 Support other infrastructure projects that form part of the Core Area wastewater treatment system, including the Residuals Treatment Facility and conveyance system	2023		
▶ NEW IBC 1a-2.1 Environmental Monitoring Program – Environmental Technician Odour	2024-2026	\$111K requisition	1 Term Extended
▶ NEW IBC 1a-2.2 Facilities Maintenance Worker	2024-ongoing	\$106K other	1 Term Converted
1b-1 Implement a development cost charge program for the Core Area wastewater service	2024	-	-
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	-	-
1b-3 Update the Liquid Waste Management Plan for Saanich Peninsula and Core Area	2024-2025	-	-
1b-4 Develop and implement a long-term Biosolids Management Plan	2022-2024		existing
▶ NEW IBC 1b-4.1 Biosolids Coordinator	2024-2027	\$111K requisition	1 Term Extended

06 Performance

GOAL 1A: OPTIMIZE CORE AREA WASTEWATER TREATMENT SYSTEM

GOAL 1B: MANAGEMENT OF WASTEWATER & TREATMENT RESIDUALS

Targets & Benchmarks

Indicators benchmarked in 2022/2023 include:

- Energy use per megalitre of wastewater treated: n/a
- Utilization of gas generated at the Residuals Treatment Facility: n/a

Measuring Progress

Performance Measure(s)	Service	Type	2022 Actual	2023 Forecast	2024 Target
1. Volume of biosolids beneficially used	All Wastewater Services	Quantity	600	1,600	3,600
2. Wastewater effluent quality non-compliance events with provincial and federal regulatory requirements	Core Area Wastewater	Quantity	10	5	0
	Saanich Peninsula Wastewater	Quantity	0	0	0
	Salt Spring Island Liquid Waste	Quantity	6	8	0
	Local Services	Quantity	18	12	10
3. Number of wastewater overflows or flow exceedances	Core Area Wastewater	Quantity	36	20	0
	Saanich Peninsula Wastewater	Quantity	0	0	0
	Salt Spring Island Liquid Waste	Quantity	2	2	0
	Local Services	Quantity	17	15	15
4. Total volume of wastewater collected and treated²	Core Area Wastewater	Quantity	33,851,491	34,000,000	34,500,000
	Saanich Peninsula Wastewater	Quantity	3,588,904	3,500,000	3,700,000
	Salt Spring Island Liquid Waste	Quantity	178,734	180,000	182,000
	Local Services	Quantity	301,043	300,000	305,000
5. Operating cost per megaliter of wastewater collected and treated³	Core Area Wastewater	Quantity	686	807	811
	Saanich Peninsula Wastewater	Quantity	1,014	1,099	1,011
	Salt Spring Island Liquid Waste	Quantity	4,431	4,538	4,527
	Local Services	Quantity	5,300	5,579	5,404
6. Number of odour complaints related to operation	Core Area Wastewater	Quantity	98	95	90
	Saanich Peninsula Wastewater	Quantity	0	1	1
	Salt Spring Island Liquid Waste	Quantity	0	0	0
	Local Services	Quantity	2	2	2
7. Delivery of annual capital program⁴	Core Area Wastewater	Quantity	6,500,000	24,000,000	32,500,000
	Saanich Peninsula Wastewater	Quantity	2,200,000	3,000,000	3,200,000
	Local Services	Quantity	802,000	7,000,000	4,000,000
8. Preventative maintenance completion⁵	Core Area Wastewater	Quantity	70%	82%	85%
	Saanich Peninsula Wastewater	Quantity	87%	94%	95%
	Salt Spring Island Liquid Waste	Quantity	84%	88%	91%
	Local Services	Quantity	89%	95%	95%

² Volume is expressed in cubic meters

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) and Songhees and Esquimalt First Nations

Saanich Peninsula Municipalities (Central Saanich, North Saanich, Sidney) and Saanich Peninsula First Nations

Local Wastewater Service Areas in the Electoral Areas (Magic Lake, Port Renfrew, Ganges, Maliview, SSI Liquid Waste)

FUNDING SOURCES

Requisitions and user charges (Local Wastewater Service Areas)

GOVERNANCE

[Core Area Liquid Waste Management Committee](#)

[Saanich Peninsula Wastewater Commission](#)

[Electoral Areas Committee](#)

[Local Wastewater Service Area Committees and Commissions](#)