

Community Need

2023 Summary

Water

Strategy

Target Outcome

We envisage a sustainable and resilient water supply.

Strategic Context

Strategies

- [Regional Water Supply Strategic Plan](#)
- [Regional Growth Strategy](#)
- [Regional Water Supply Master Plan](#)
- [Special Task Force on First Nations Relations](#)
- [Statement of Reconciliation](#)

Trends, risks and issues

- **Security and patrols:** there have been an increased number of security incursions/recreational pressure into the Greater Victoria Water Supply Area (GVWSA) from Sooke Hills Wilderness Regional Park and from the rapidly developing residential area around Langford and Goldstream. This is putting additional pressure on the Watershed team.
- **Climate Action:** the most significant risks for water services relate to climate and environmental changes. Predicted trends of drier, hotter summers will impact the water services in a number of ways:
 - Demand for water, including for local agricultural activities – this is monitored closely and evaluated against historical trends. Model predictions are updated for areas exhibiting higher than predicted demands, this will inform future infrastructure upgrades to meet growing demands.
 - Water quality may be affected due to increased biological growth in the source water and distribution system. The 2022 Regional Water Supply Master Plan recommends implementing filtration as a step in the treatment process by 2037.
 - In the GVWSA, increasing periods of elevated wildfire risk, peak flows from winter storms, drought stress on trees which could lead to increased mortality and forest pests/diseases.
 - Increased risk of power outages.
- **Infrastructure Vulnerability, Resiliency, and Emergency Preparedness:** there are increases in operational and system maintenance demands from a growing region combined with aging infrastructure. The 2022 Regional Water Supply Master Plan identifies a strategy to address supply (quantity) and critical delivery infrastructure (redundancy) needs over the next 30 years.

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- **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.
- Completion of the Master Plan will allow the development of a Regional Water Development Cost Charge Program to advance.
- Operational cost increases: the costs of some essential water system operating supplies such as disinfection chemicals are increasing 30-40% year over year which is impacting the cost of service delivery.
- Regional Water Supply (RWS) Strategic Plan (2017): Actions and initiatives to support the Strategic Priorities and Commitments will be updated in 2023 for the 2024-2028 period.
- New service delivery model for First Nations water servicing will be implemented beginning in 2023, whereby the RWS Service will become the service provider for participating First Nations Governments.

Services

Core Services Levels	
Service	Levels
Regional Water Supply (RWS), Juan de Fuca (JdF) Water Distribution, Saanich Peninsula Water and Small Water Systems in the Electoral Areas (EAs) Wholesale water supply to approximately 400,000 consumers in Greater Victoria and residents in three municipalities on the Saanich Peninsula, water distribution system within Langford, Sooke, View Royal, Colwood, East Sooke, Metchosin and Highlands and the small water systems in the EAs supported through following key service areas:	
Water Systems Operations and Maintenance Water treatment, supply and distribution system operation and monitoring. System and facility maintenance, consumables management and preventative maintenance. ↪ Service level adjusted, see initiatives 10a-7 & 10a-8	<ul style="list-style-type: none"> • 24/7 water treatment operations for two facilities for Greater Victoria • Supply and distribution system operation • System monitoring • Customer service • System and facility maintenance • Consumables management • Component preventative maintenance

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Core Services Levels	
Service	Levels
Emergency Response/System Failure Water main breaks.	<ul style="list-style-type: none"> • 24/7 emergency response to water main breaks and other system emergencies
Infrastructure Planning Strategic asset management for all services/systems including modeling and capacity analysis, vulnerability assessment, infrastructure renewal plans.	<ul style="list-style-type: none"> • Asset management and capital planning • Adjust plans for 15 water services • System expansion and growth planning
Capital Project Delivery and Works Project design, procurement and delivery of capital projects annually on time/budget. Main installations, dam upgrades, equipment replacement and capital projects support.	<ul style="list-style-type: none"> • Capital program delivery • Water main installations and equipment replacement • Dam maintenance and upgrade projects • Capital project support & contract management
Engineering Services Development referrals, survey and mapping, engineering support to utility operations, and dam safety inspections and administration.	<ul style="list-style-type: none"> • Engineering support of utility operations for the 15 water services
Watershed Protection Forest land management of the 20,611 hectares of the Greater Victoria Water Supply Area to ensure high-quality source drinking water for the Regional Water Supply System through following service areas:	
Wildfire, Security & Emergency Response: Watershed security, wildfire and spill preparedness, prevention and response.	<ul style="list-style-type: none"> • 24/7 watershed emergency duty officer standby • Security/wildfire patrols and standby (weekends and holidays; daily during elevated fire conditions) • Wildfire detection air patrol during high and extreme fire hazard
Watershed Operations Silviculture, forest health and forest fuel management; invasive plant management; vegetation management and road maintenance, upgrades and rehabilitation	<ul style="list-style-type: none"> • Winter/summer road maintenance • Culvert and bridge upgrades to accommodate higher peak flows to higher standards and changing climate • Forest fuel and forest resilience treatments and fire smarting maintenance including brushing, thinning and prescribed burning • Brushing around facilities, dams, for tree release • Danger tree assessment and removal along roads and powerlines • Invasive plant management

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Core Services Levels	
Service	Levels
<p>Resource Planning Wildlife management, ecological inventories and analyses, risk assessment and management, and GIS and data management. → Service level adjusted, see initiative 10d-3</p>	<ul style="list-style-type: none"> • Development of a comprehensive watershed hydrology monitoring program • Annual forest health survey • Partnering in climate change and other research in the GVWSA • Management of beaver, Canada geese and bullfrogs • School and public tours of the Water Supply Area and facilities
<p>Environmental Protection Regulatory and non-regulatory services and a support role across the organization that focuses on enhanced integration of drinking water quality protection programs and integration of communication initiatives.</p>	
<p>Water Quality Monitoring, assessment, reporting and technical advice to meet water quality regulatory requirements.</p>	<ul style="list-style-type: none"> • Source water and distribution system monitoring, assessment and reporting • Physical, chemical and biological analytical services, assessment and reporting
<p>Demand Management Research and data to inform capital planning, water conservation, and communications and education.</p>	<ul style="list-style-type: none"> • Accurate data • Per capita targets (residential and ICI)
<p>Cross Connection Control Oversight, monitoring and reporting of potential sources of contamination that may flow in a reverse direction into the Regional Water Supply.</p>	<ul style="list-style-type: none"> • Contamination prevention through facility inspections, testing and education for backflow prevention devices • Monitor and track (>28,000) backflow prevention devices
<p>Communications & Environmental Education Public education and engagement in the region to promote sustainable behavior through campaigns, initiatives and services.</p>	<ul style="list-style-type: none"> • Increased public awareness of CRD messages and subsequent behavior changes (declining trend in per capita and per sector water use)

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Core Services Levels	
Service	Levels
Support Services	
<p>Support Services</p> <p>The core services listed rely on the support of several corporate and support divisions to effectively operate on a daily basis. These services are reported on in the Accountability Community Need Summary.</p>	<ul style="list-style-type: none"> Services include Human Resources & Corporate Safety, Corporate Communications, Asset Management, Financial Services, Information Technology & GIS, Information Services, Legislative Services, Facility Management, Fleet Management, Legal Services, Risk & Insurance and Real Estate Services

Initiatives					
Ref	Initiative	Description	Year(s)	2023 impacts ¹	
10a-7	SSI Water Operations	Staffing adjustment for the operation of three utilities (Beddis, Fulford and Cedar Lane Water services)	2023 – ongoing	+1.61 FTE Ongoing	\$456K Allocation / other
10a-8	Manager, SSI & SGI Operations	Staffing adjustment to ensure compliance with Environmental Operators Certification Program facility classification	2023 – ongoing	+1.0 FTE Ongoing	\$273K Allocation / other
10d-3	Watershed Hydrology Monitoring*	Expand and increase watershed hydrology monitoring in the Greater Victoria Water Supply Area	2023	--	--

¹ Budget impacts reflect full program costs, including cost of staffing.

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Business Model

Funding

Who contributes

Water Supply and Distribution:

- Regional Water Supply: All Municipalities, JDF EA, First Nations (via Distribution Systems)
- Saanich Peninsula Water Supply: Municipalities (Central Saanich, North Saanich, Sidney)
- JDF Water Distribution: Langford, Colwood, View Royal, Metchosin, Highlands, Sooke, JDF EA
- Local Water Service Areas in the EAs

Environmental Protection

- Water Quality Service: Allocation from Integrated Water Services and Local Service Areas (LSA) from municipalities of RWS area, JDF and various local service areas, Sidney, North Saanich, Central Saanich and Peninsula First Nations
- Demand Management, Cross Connection Control Services: water rate from all Municipalities and EAs
- Communications and Environmental Education: all Municipalities and EAs

Support Services: Varies per service

Funding Sources

- **Regional Water Supply:** Bulk water sales revenue
- JdF Water Distribution System: Retail water sales revenue in West Shore Municipalities
- **Saanich Peninsula Water:** Wholesale water sales revenue
- **Environmental Protection services:** water rate and requisition

Reporting Structure

[Regional Water Supply Commission](#) – [Water Advisory Committee](#) – [Saanich Peninsula Water Commission](#) – [JDF Water Distribution Commission](#) – [Various LSA Commissions](#) (Port Renfrew, Lyall Harbour/Boot Cove, Magic Lake Estates, Skana, Beddis, Cedar Lane, Cedars of Tuam, Fulford, Fernwood/Highland, Sticks Allison, Surfside, Wilderness Mountain)

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Performance				
Definition and Source	Service	2021 Actual	2022 Forecast	2023 Target
Metric 1: Regulatory Compliance Non-compliance with Island Health, provincial and federal regulatory requirements and operational certificates that result in Boil Water Advisories or Do Not Consume Events	<i>Regional Water Supply</i>	None	None	None
	<i>JDF Water Distribution</i>	None	None	None
	<i>Saanich Peninsula Water Supply</i>	None	None	None
	<i>Local Services</i>	8	3	None
Metric 2A: Water Quality Sampling (raw) Water quality samples analyzed annually from source reservoirs (raw water)	<i>Regional Water Supply</i>	15,589	17,174	17,174
	<i>Local Services</i>	3,670	4,218	4,218
Metric 2B: Water Quality Sampling (treated) Water quality samples analyzed annually from transmission/distribution systems (treated water)	<i>Regional Water Supply</i>	1,787	1,888	1,888
	<i>JDF Water Distribution</i>	7,531	7,378	7,762
	<i>Saanich Peninsula Water Supply</i>	2,102	3,701	3,701
	<i>Local Services</i>	24,904	17,893	17,893
Metric 3: Demand Average day per capita water use (litres per capita per day)	<i>Regional Water Supply</i>	359	340	340
	<i>JDF Water Distribution</i>	314	300	300
	<i>Saanich Peninsula Water Supply</i>	479	420	420
	<i>Local Services</i>	227.8	216.5	215.8
Metric 4: Operating cost Annual operating cost per megalitre of drinking water treated and supplied/distributed	<i>Regional Water Supply</i>	\$111	\$112	\$115
Metric 5: Energy usage Annual energy use (kWh) per megalitre of drinking water treated and supplied/distributed	<i>Regional Water Supply</i>	62.5	66	66

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Performance				
Definition and Source	Service	2021 Actual	2022 Forecast	2023 Target
Metric 6: Watershed water release Volume of raw water released annually from RWS watersheds to rivers to support fish habitat (megalitres)	<i>Regional Water Supply</i>	10,286	11,000	12,000
	<i>JDF Water Distribution</i>	8.2	10	8
Metric 7: Water-main leak repairs Number of water-main leak repairs and service line leaks annually per 100 kilometers of pipe (distribution systems)	<i>Local Services</i>	1	1	1
	<i>Regional Water Supply</i>	86%	96%	98%
Metric 8: Preventative maintenance Preventative maintenance completed (% of planned)	<i>JDF Water Distribution</i>	84%	94%	96%
	<i>Saanich Peninsula Water Supply</i>	97%	98%	98%
	<i>Local Services</i>	91%	98%	98%
	<i>Local Services</i>	91%	98%	98%

Discussion

Link to Target Outcome

The KPIs link to the CRD's goals of safe, sustainable and resilient water resources for the Capital Region.

Discussion

- Metric 3: Average day per capita water use (litres per capita per day)
 - Regional Water Supply: Demand is plateauing due to the replacement of inefficient appliances and a surge of new high-density buildings with built-in water efficiencies
 - Saanich Peninsula Water Supply: Driven by agricultural demand and lack of residential densification
 - Local Services: Values represent the average of twelve services

Community Need

Initiative Progress Report

Water

Initiatives approved in 2020, 2021 & 2022			
Ref	Initiative	% complete	Progress to date
10a-0.1	Watershed Security Position	--	Lead: Watershed Protection (2021) Not started – pending union bargaining
10a-1	Post-Disaster Water Supply Plan Note: Ongoing initiative with annual funding	50%	Lead: Infrastructure Operations (2020) Progressing – Building on previous year’s progress the program will continue to focus on Emergency Repair Parts, Seismic Resilient Hydrants, Water Distribution Modules, and Transmission Main Upgrades.
10a-2	Water Infrastructure Resilience	100%	Lead: Infrastructure Operations Water (2020) Part of core services
10a-2	Infrastructure Integration Technician	50%	Lead: Customer & Technical Services (2022) Progressing – Interviews complete.
10a-2.1	Water Infrastructure Resilience	100%	Lead: Infrastructure Operations Water (2021) Part of core services
10a-3	RWSSP Update	100%	Lead: Infrastructure Engineering (2020) Part of core services
10a-4	Cross Connection Control Inspector	100%	Lead: Environmental Protection (2021) Part of core services
10a-5	Water Billing	100%	Lead: Financial Services (2020) Part of core services
10a-7	SSI + SGI Water Operations	100%	Lead: Infrastructure Operations Water (2020) Part of core services
10b-1	Water Conservation through Demand Management	100%	Lead: Environmental Protection (2020) Part of core services
10c-1	Agricultural Water Subsidy	10%	Lead: Infrastructure Operations Water (2020) Progressing – A consultant has been retained to complete an Agricultural Water Rate Review and Rate Model Options Study, the study is expected to be completed in 2023.

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Initiative Progress Report

Initiatives approved in 2020, 2021 & 2022			
Ref	Initiative	% complete	Progress to date
10d-1	Future Water Supply + Infrastructure	100%	Lead: Infrastructure Engineering (2020) Completed – Regional Water Supply Master Plan completed
10d-2	Leech River Water Quality Operations	100%	Lead: Environmental Protection (2021) Completed
10d-3	Watershed Hydrology Monitoring	100%	Lead: Watershed Protection (2020, 2021 & 2022) Completed - continuing on from 2020/2021 IBC into 2022, renewal of contracts to be completed on budget approval – hydrology station upgrades and discharge measurements
10d-4	SSI Watershed Protection	--	Lead: Environmental Protection (2020) Cancelled – this project will not proceed as the main water improvement district decided not to convert to a CRD service.
10e-1	Contracts Coordinator	100%	Lead: Administrative Services – IWS (2022) Completed – position has been filled

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Capital Plan Update

Water

Background

The Capital Regional District (CRD) operates **14 regional, sub-regional and local water services** across the Greater Victoria area and the three Electoral Areas. The services range in size and infrastructure complexity – the Regional Water Supply service provides bulk drinking water for residential, commercial, institutional, and agricultural uses to approximately 400,000 people throughout Greater Victoria, while some of the local water services serve fewer than 50 customers. Eight First Nations governments are served through the sub-regional and municipal water services. There are many stakeholders involved in the supply and delivery of safe drinking water, including senior government and Island Health who administers and enforces the applicable provincial drinking water legislation through water system operating permits. The operating permit conditions set out operating requirements and in some cases, system improvement (capital) requirements.

Planning for 2023 and beyond

Each of the water services has a capital plan which sets out the highest priority system infrastructure improvements. For the larger services, the capital plan is based on a longer term strategic plan or master plan/asset management plan, such as the Regional Water Supply Service's 30 year Master Plan. The smallest services will typically have a five-year capital plan due to the complexity of the system and financial considerations. Typically, the recommended capital improvements are resulting from the need to replace infrastructure that is nearing the end of its service life, the need for increased service capacity, or regulatory changes.

Highlights since 2019

The CRD has allocated over **\$120M since 2019** on capital projects across the region that advance the Water Community Need. These investments were primarily funded through water fees, reserves and capital funds on hand.

Some of the projects included:

- Replacing aged infrastructure including asbestos cement water pipes in the Juan de Fuca Water Distribution System and intake tower screening equipment at Sooke Lake Reservoir
- Replacement of Lubbe Dam No.4 and rehabilitation of Butchart Dam No.5 and a Dam Safety Review of Sooke Lake Dam in the Regional Water Supply System
- Completion of new infrastructure to support growth related capacity improvements in the Juan de Fuca Water Distribution System, under the development cost charge program

Community Need



Capital Plan Update

- Procurement of post disaster water supply and distribution equipment, supplies and critical spare components
- Replacement of the Regional Water Supply Watershed Gatehouse Building and primary entrance security gates
- Various studies, renewals and replacement projects to support numerous local water services
- Completion of the Regional Water Supply 2022 Master Plan, a 30 year plan that sets out 21 major projects necessary to meet anticipated water supply and treatment needs based on projected population for the year 2050, as well as impacts of climate change, water treatment requirements resulting from changing raw water quality characteristics and regulatory requirements, and to add critical component redundancy

Projects highlights for 2023

The CRD will allocate over **\$31M in 2023** on capital projects across the region that advance the Water Community Need. These investments will be primarily funded through water fees, reserves and capital funds on hand.

Some of the projects include:

- Replacement of the Goldstream Avenue asbestos cement water main in the City of Langford and completion of a new pump station, reservoir and piping in the Rocky Point zone of the Juan de Fuca Water Distribution System
- Beginning the construction of a new Field Operations Centre building to support Regional Water Supply Watershed Operations staff and operations functions, replacing the temporary trailers currently in use
- Replacement of the Ultra Violet water disinfection equipment at the Goldstream Water Treatment Plant, and beginning the Transmission Main No.4 and Transmission Main No. 3 replacement projects
- Capital upgrades across several of the local water services including dam repairs, distribution pipe and pump station replacements, and treatment system improvements
- Replacement of operations vehicles and equipment used for day-to-day operations and maintenance of water systems; Several electric vehicles have been procured to replace internal combustion engine vehicles