



Notice of Meeting and Meeting Agenda Fernwood and Highland Water Service Commission

Thursday, May 22, 2025

10:00 AM

SIMS Boardroom
124 Rainbow Road
Salt Spring Island BC

Annual General Meeting

MS Teams link: [Click here](#)

G. Holman, B. Travelbea, and L. Travelbea

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

Purpose of the Annual General Meeting

The agenda for the Annual General Meeting (AGM) is approved by the members of the Commission. The purposes (and hence the agenda items) of the meeting are:

- To have the last year's AGM minutes approved (by Commission members), and to present reports on the work of the Commission on the past year's operation, maintenance, capital upgrades and financial information of the service to the service residents and owners,*
- To nominate members for appointment to the Commission, and*
- To enable the public to share comments on subjects which relate to the work of the Commission. The Commission can identify (under "new business") issues on which it wants feedback at the meeting. Motions raised by the public at the AGM will be considered by the commission at a subsequent regular meeting.*

The Annual General Meeting is for the 2024 fiscal year.

- 1. Territorial Acknowledgment**
- 2. Election of Chair**
- 3. Approval of Agenda**
- 4. Adoption of Minutes**

- 4.1. [25-0590](#) Minutes of November 04, 2024 and January 21, 2025 Fernwood and Highland Water Service Commission

Recommendation: That the minutes of the following meetings be adopted as presented:
-November 04, 2024
-January 21, 2025 Annual General Meeting (AGM)

Attachments: [Minutes: November 4, 2024](#)
[Minutes: January 21, 2025 AGM](#)

5. Director and Chair's Report

6. Report

- 6.1. [25-0500](#) Fernwood and Highland Water Service Annual Report 2024

Recommendation: There is no recommendation. This report is for information only.

Attachments: [Fernwood and Highland Annual Report 2024](#)
[Appendix A: 2024 Statement of Operations and Reserve Balances](#)

7. Election of Commissioners

1 Position

8. New Business

None

9. Outstanding Business

None

10. Adjournment

Next Meeting:

-TBA

Meeting Minutes - Draft

Fernwood and Highland Water Service Commission

Monday, November 4, 2024

10:00 AM

SIMS Boardroom
124 Rainbow Road
Salt Spring Island BC

Annual General Meeting

PRESENT:

COMMISSION MEMBERS: G. Holman, C. Wentworth B. Travelbea, L. Travelbea,

STAFF: D. Ovington, Senior Manager, SSI Administration, J. Bilodeau, Manager, Local Services Water and Wastewater Ops., D. Olafson, Manager SSI Engineering, D. Robson, Manager Saanich Peninsula Gulf Island Ops, L. Xu, Manager, Finance Services, and M. Williamson, Committee Clerk, (Recorder)

ABSENT:

COMMISSION MEMBERS: B. Travelbea, L. Travelbea,

Electronic Participation- (EP)

At 10:15am attendance was recorded and the Senior Manager determined that quorum was not met, the meeting was cancelled and rescheduled.

After 15 minutes past the posted start time of the meeting the Senior Manager determined that quorum was not met, the meeting was cancelled and rescheduled.

CHAIR

SENIOR MANAGER

Meeting Minutes - Draft

Fernwood and Highland Water Service Commission

Tuesday, January 21, 2025

1:00 PM

SIMS Boardroom
124 Rainbow Road
Salt Spring Island BC

Annual General Meeting- Rescheduled

PRESENT:

COMMISSIONERS: G. Holman, B. Travelbea, L. Travelbea,

STAFF: D. Ovington, Senior Manager, SSI Administration, J. Bilodeau, Manager, Local Services Water and Wastewater Ops., D. Olafson, Manager SSI Engineering, D. Robson, Manager Saanich Peninsula Gulf Island Ops (EP), L. Xu, Manager, Finance Services (EP), and M. Williamson, Committee Clerk, (Recorder)

Electronic Participation- (EP)

These minutes follow the order of the agenda although the sequence may have varied.

The meeting was called to order at 1:01 pm.

1. Territorial Acknowledgment

Commissioner L. Travelbea provided a Territorial Acknowledgement.

2. Approval of Agenda

MOVED By Commissioner B. Travelbea, SECONDED by Director Holman,
That agenda for the January 21, 2025, Annual General Meeting of the Fernwood
and Highland Water Services Commission be approved as amended table 2 on
page 15 of the agenda package being replaced with an updated table.
CARRIED

3. Adoption of Minutes

3.1. Minutes of June 08, 2023 and June 13, 2024 Fernwood and Highland Water Service Commission

MOVED By Commissioner B. Travelbea, SECONDED by Director Holman,
That the minutes of the following meetings be adopted as presented:
-June 08, 2023 Annual General Meeting (AGM)
-June 13, 2024 Special Meeting
CARRIED

4. Director and Chair's Report

Nothing to Report.

5. Report

5.1. Fernwood and Highland Water Service Annual Report 2023

D. Ovington presented the report.

This report was received for information.

Debt retiring in 2025 for the separate Highland water and Fernwood water Service. Final payments on interest in 2027.

6. Election of Commissioners

Request for volunteers was advertised as per the requirements and staff confirmed no new nominations were received.

Commissioners B. Travelbea, and L. Travelbea expressed their intent to serve on the commission for the February 12, 2025 to December 31, 2026 term.

7. New Business

Discussion ensued regarding payment collection process of user charge.

8. Outstanding Business

There was no outstanding business.

9. Adjournment

**MOVED By Director Holman, SECONDED by Commissioner L. Travelbea,
That the Fernwood and Highland Water Service Commission adjourn the
meeting at 01:53pm.**

CARRIED

CHAIR

SENIOR MANAGER

Fernwood and Highland Water Service

2024 Annual Report



INTRODUCTION

This report provides a summary of the Fernwood and Highland Water Service for 2024. It includes a description of the service, summary of the water supply, demand and production, drinking water quality, operations highlights, capital project updates and financial report.

SERVICE DESCRIPTION

In 2010 the Highland and Fernwood water services merged to construct new water treatment plant to operate as a single water system. Both former water services hold legacy budgets to repay existing debt and outstanding capital works. The service obtains its drinking water from St. Mary Lake, which lies within an uncontrolled multi-use watershed. The Capital Regional District (CRD) holds five licenses to divert a total of up to 230,000 m³ per year and store up to 30,800 m³. St. Mary Lake is subject to seasonal water quality changes and is affected by periodic algae blooms.

The Highland service was first developed in the 1970's under the name Vesuvius Holdings and was converted to the Highland Water System in 1978. It then became a CRD service in 2004. The Fernwood service was created in the 1970's by a private developer and was converted to the Fernwood Improvement Water District in 1984. It then became a Capital Regional District (CRD) service in 1989. The Fernwood and Highland Water Service (Figure 1) is comprised of 333 parcels of land with 320 of those parcels connected to the service.

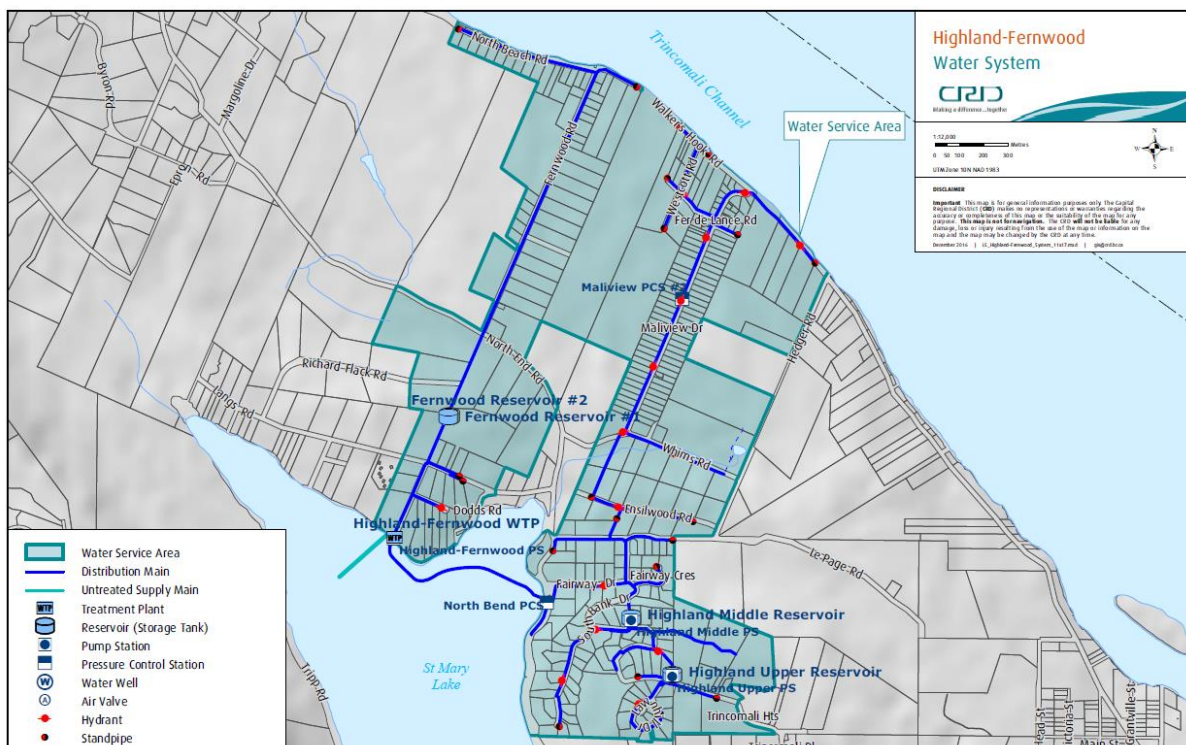


Figure 1: Fernwood and Highland Water Service

The Fernwood and Highland water system is primarily comprised of:

- a water treatment plant (WTP) that draws water from St. Mary Lake and treats it at a location on Maycock Road, adjacent to the lake. The water is treated using a rapid mix system, flocculation, dissolved air floatation (DAF) and filters, ultraviolet disinfection, then chlorination prior to being pumped, via the distribution system to two different reservoirs. The WTP design flow rate is 11.3 l/sec (150 lgpm);
- one raw water pump station on Maycock Road, adjacent to the lake. (flow rate of two pumps running is 4.6 l/sec (60 lgpm);
- approximately 12,000 m of water distribution pipe
- 4 water reservoirs – one 180 m³ (40,000 lg) on the Highland system, one 91 m³ (20,000 lg) on the Highland system, one 45 m³ (10,000 lg) on the Fernwood system and, one 91 m³ (20,000 lg) on the Fernwood system
- 2 water system booster pumps:
 - Highlands Middle Reservoir
 - Highlands Upper Reservoir
- fire hydrants, standpipes, and gate valves
- water service connections complete with water meters
- 2 pressure reducing valve stations - one on North End Road and one on Maliview Drive.

WATER PRODUCTION AND DEMAND

Referring to Figure 2, 78,226 cubic meters (m³) of water was extracted (water production) from St. Marys Lake in 2024; a 12% increase from the previous year and a 8% increase from the five-year rolling average. Water demand (customer water billing) for the service totalled 55,289 m³ of water; a 1% increase from the previous year and a 9% increase from the five-year rolling average.

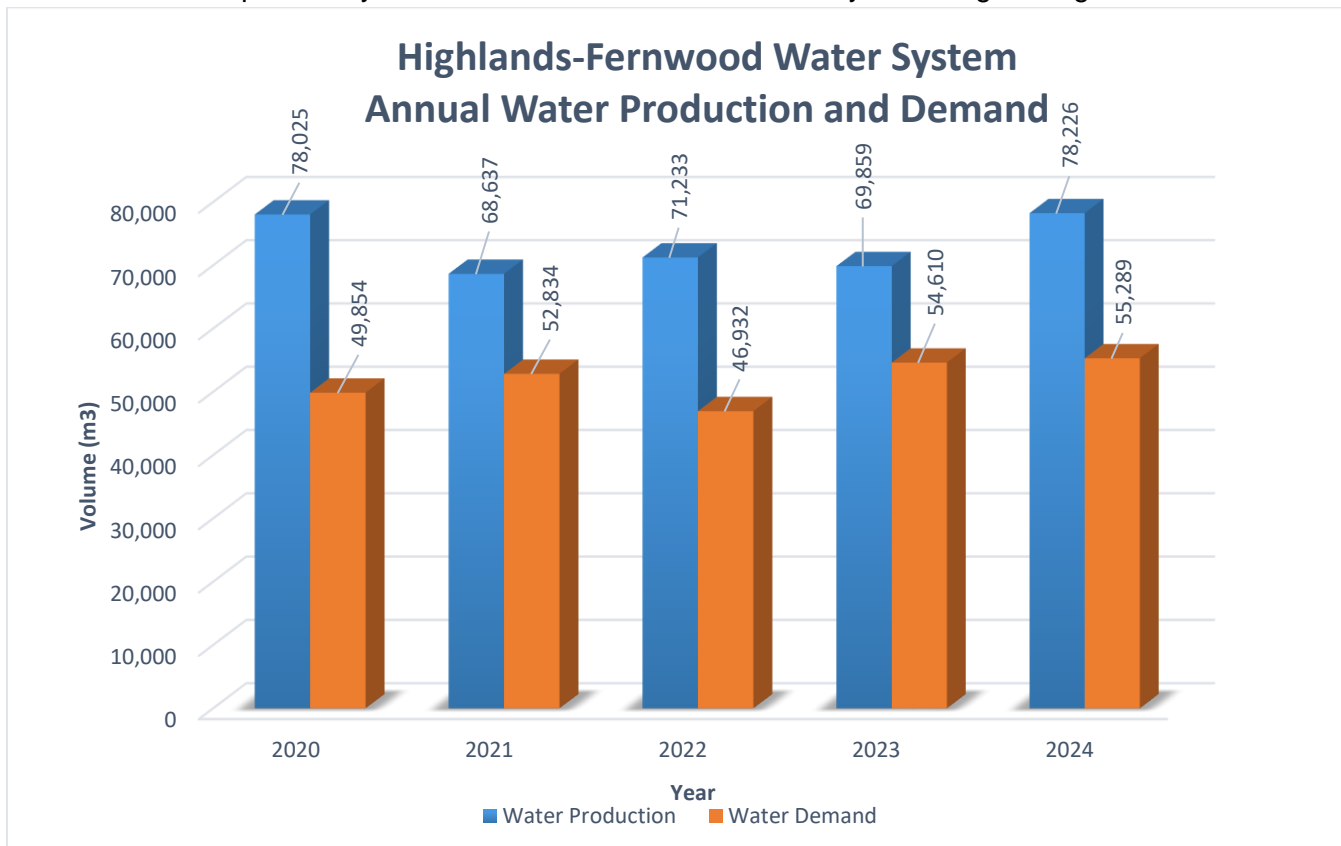


Figure 2: Fernwood and Highland Water Service Annual Water Production and Demand

Water production by month for the past five years is shown in Figure 3. As with most water systems, water consumption follows a typical diurnal pattern where the monthly total flow peaks during the summer months. The 2024 monthly flow information is indicative of this diurnal pattern. A slight increase in production above previous averages has been noted effective as of July 2024.

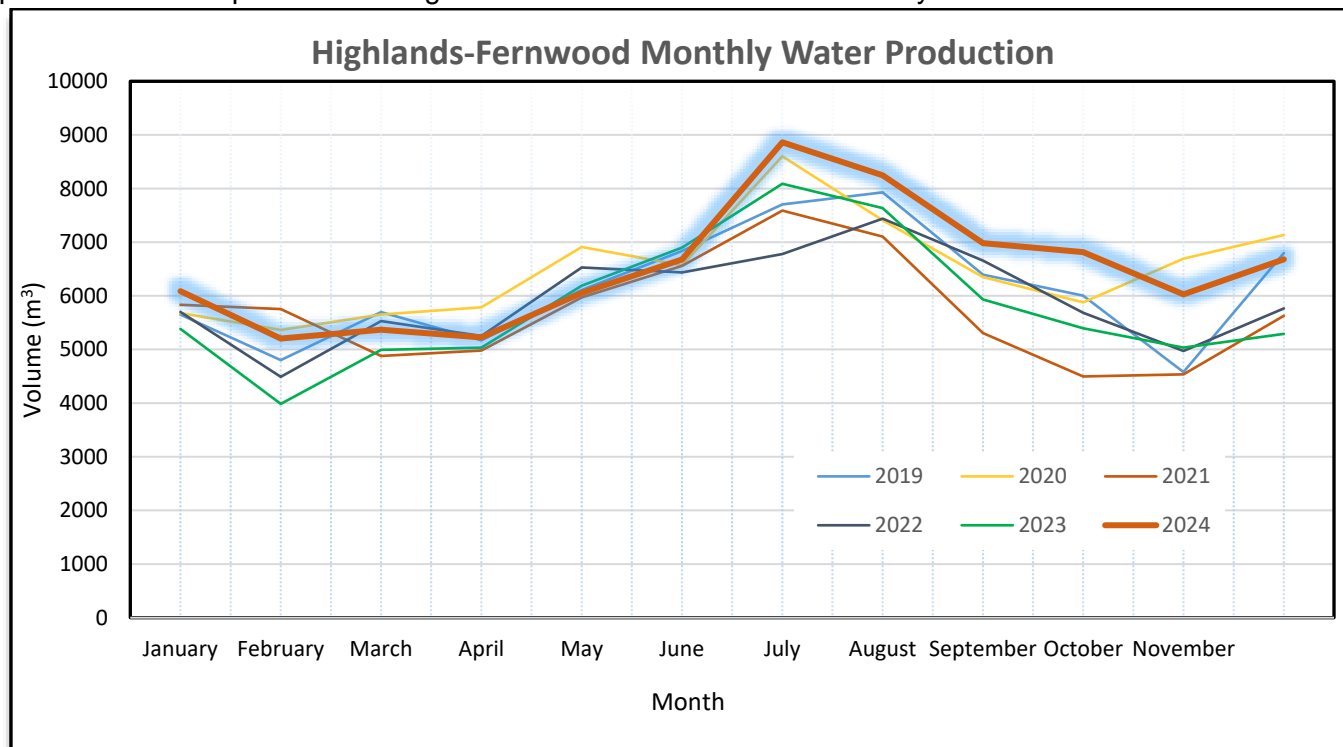


Figure 3: Fernwood and Highland Water Service Monthly Water Production

The Fernwood and Highland Water System is fully metered, and water meters are read quarterly. Water meters are manually read on a quarterly basis and the data enables water production and consumption to be compared to estimate leakage losses in the distribution system. The difference between water produced and water demand (total metered consumption) is called non-revenue water and includes distribution leaks, meter error, and unmetered uses such as fire hydrant usage, distribution system maintenance, and process water for the treatment plant. Non-revenue water is approximately 29%. This represents a 7% increase from the previous year.

WATER QUALITY

In 2024, the analytical results (biological, chemical and physical parameters) of water samples collected from the Highland/Fernwood Water Systems indicated that the drinking water supplied to the customers was generally of good quality. The Highland distribution system experienced two water main breaks that led to partial Boil Water Advisories (BWA): October 12 – 13, and October 28 - 31. Also, St. Mary Lake experienced an almost continuous cyanobacteria bloom (except in March and April) with particularly high activity in July and August. Various species of potentially toxin producing cyanobacteria were responsible for these blooms but all samples taken from the intake of the Highland/Fernwood Water System tested negative for microcystin, a cyanotoxin frequently associated with such blooms. During these algal events, the Highland/Fernwood water treatment plant was able to produce safe and good quality drinking water.

The data below provides a summary of the water quality characteristics in 2024:

Raw Water:

- The raw water exhibited typically low concentrations of total coliform and *E.coli* bacteria throughout the cold weather periods, but much higher spikes during the summer.
- No parasitic *Cryptosporidium* oocysts or *Giardia* cysts were detected.
- The analyses of raw water samples indicated moderately low concentrations of iron and but elevated concentrations of manganese in the fall (November).
- The raw water was slightly hard (median hardness 39.2 mg/L CaCO₃).
- The raw water turbidity (cloudiness) was often below or near 1 NTU but occasionally higher during summer and fall months (July: up to 3.6 NTU, September: up to 3.5 NTU). These episodes of high raw water turbidity were the result of strong cyanobacteria blooms.
- A median annual total organic carbon (TOC) concentration of 4.1 mg/L confirms the mesotrophic (semi-productive) to eutrophic (productive) status of St. Mary Lake.
- Cyanobacteria blooms of various species occurred almost all year long in St Mary Lake. Despite the blooms of potentially toxin producing cyanobacteria species, no cyanotoxins (microcystin) were detected in the raw water entering the treatment plant.

Treated Water:

- The treated water was safe to drink outside the period with a BWA; no indicator bacteria were detected in any Fernwood Distribution System or Highland System sample throughout the year.
- The treated water turbidity was typically well below the turbidity limit of 1.0 NTU throughout the year in most parts of the system. However, a few standpipes in the Fernwood and the Highland systems occasionally registered elevated turbidity. These low flow locations need to be flushed regularly to remove accumulated pipe sediments.
- The levels of regulated disinfection by-products trihalomethanes (THM) were well below the limits in the GCDWQ (100 µg/L) across the Fernwood and the Highland Distribution System. Haloacetic acids (HAA) were not tested for in 2024. As long as THM concentrations are low, HAA tests are only performed every 5 years to verify baseline conditions. The last HAA tests were done in 2021.
- The treated water total organic carbon concentration (TOC) in both distribution systems was similar to previous years, ranging from 1.8 to 2.1 mg/L in the Fernwood Distribution System, and 1.8 to 2.0 mg/L in the Highland Distribution System. There is currently no guideline in the GCDWQ for TOC levels, however the USEPA suggests a treated water TOC concentration of < 2 mg/L as confirmation of effective treatment and disinfection by-product control.
- Iron and/or manganese concentrations, which can lead to water discolouration if present in elevated concentrations, have been typically below the aesthetic guideline limits. The Fernwood System experienced elevated manganese concentrations twice in August and once in November, and the Highland System elevated iron concentrations once in November. Typically, these exceedances in the distribution systems are a result of accumulation over time in low flow locations. Operators try to mitigate this by periodic spot flushing.

Table 1, 2 and 3 below provide a summary of the 2024 raw and treated water test results.

Water Quality data collected from these two distribution systems can be reviewed on the following CRD website: <https://www.crd.bc.ca/about/data/drinking-water-quality-reports>

OPERATIONAL HIGHLIGHTS

The following is a summary of the major operational issues that were addressed by CRD Integrated Water Services staff in 2024:

- Emergency response to water system breaks at:
 - 144 Maliview Dr water main break, BWA issued
 - 200 Ensilwood Rd service line repair, BWA issued
 - 172 Maliview Dr service line repair
 - 930 Walkerhook Rd service line repair
 - 299 Maliview Rd service line repair
 - 321 Maliview Rd service line repair
 - 231 Fernwood Rd service line repair
- 1060 Walkerhook Rd service line repairWater Treatment Plant:
 - H/F DAF saturator and saturator pump service
 - Fernwood raw water pump #1 seal maintenance
 - Fernwood raw water pump #2 replacement maintenance (ongoing into 2025)
 - DAF solenoid 311 reprogramming
- Distribution System:
 - Highlands Middle Reservoir maintenance and drone inspection
 - Fernwood Reservoir #1 maintenance
 - Whims Rd hydrant service
 - Maliview hydrant service
 - Highlands HF002 hydrant repair
 - Ensilwood hydrant service
 - 1060 Walkerhook standpipe repair
 - Fernwood Reservoir standpipe repair
 - Fernwood Reservoir drain valve repair
 - Water main valve repair (930 Walkerhook/320 Maliview Dr)

CAPITAL IMPROVEMENTS

Fernwood and Highland Water Capital Projects

The following is a summary of the major capital improvements, including year-end spending for 2024:

Water Intake and Screen (CE.677.7501): Fernwood water intake has not been performing as it should. Investigation and design of a new intake were commenced by a consultant engaged by the CRD. Detailed design is essentially complete with construction scheduled to take place in 2024 and be complete in early 2025.

Budget	\$227,000
Project Management	(\$37,822)
Designs	(\$45,411)
Construction	(\$68,623)
Balance Remaining	\$75,144

Safe Work Procedures (CE.699.4501): The work scope includes reviewing and developing safe work procedures for operational and maintenance tasks. Ongoing as capital improvements necessitate.

Project	Spending
Budget	\$17,000
Project Management	(\$444)
Contract	(\$3,493)

Supplies and Materials	(\$209)
Balance Remaining	\$12,854

Highland Upper Reservoir (CE.360.4655): The Highland Upper Reservoir requires replacement. Investigation and design of a new reservoir is in progress by a consultant engaged by the CRD.

Budget	\$123,176
Project Management	(\$23,128)
Designs	(\$77,556)
Balance Remaining	\$22,492

Power Generation Equipment - Design (CE.735.4501): Preliminary and detailed design for back-up power generation for the service. Additional project management time was required to coordinate the design of this project with the project to replace the Upper Reservoir (CE.360.4655). A staff report was issued to the Commission to approve a revision to the Capital Plan.

Budget	\$59,000
Project Management	(\$14,687)
Designs	(\$38,861)
Balance Remaining	\$5,452

Safety Improvement (CE.677.4601): Design and install eyewash, safe access platform, roof access hatch.

Budget	\$40,000
Project Management	(\$12,006)
Installation	(\$7,019)
Balance Remaining	\$20,975

Spares, Chlorine and Coagulant Pumps (CE.677.4602): Purchase of critical spares to have on hand for emergency repairs.

Budget	\$12,000
Project Management	(\$164)
Equipment Purchase	(\$0)
Balance Remaining	\$11,836

Referendum for Borrowing (CE.677.4501): Electoral assent process for projects with debt funding.

Budget	\$40,000
Project Management	(\$27)
Balance Remaining	\$39,973

Public Engagement (CE.677.4502): Public engagement process for projects with debt funding.

Budget	\$10,000
Project Management	(\$54)
Balance Remaining	\$9,946

Reservoir #1, Repair Roof Top Railing (CE.677.5101): Repair or replacement of roof top railing on Reservoir #1 to correct EH & S hazard.

Budget	\$15,500
Project Management	(\$0)
Design	(\$0)
Balance Remaining	\$15,500

Safety Chain Replacement at Water Treatment Plant (CE.677.4603): Replacement of safety chain to correct EH & S hazard.

Budget	\$13,000
Project Management	(\$2,131)
Design and Construction	(\$0)
Balance Remaining	\$10,869

2024 FINANCIAL REPORT

Please refer to the attached 2024 Statement of Operations and Reserve Balances.

Revenue includes parcel taxes (Transfers from Government), fixed user fees (User Charges), water sales (Sale-Water), interest on savings (Interest earnings), transfers from Operating Reserve Fund, and miscellaneous revenue such as late payment charges (Other revenue).

Expenses include all costs of providing the service. General Government Services includes budget preparation, financial management, utility billing and risk management services. CRD Labour and Operating Costs include CRD staff time as well as the costs of equipment, tools, and vehicles. Debt servicing costs are interest and principal payments on long-term debt. Other Expenses include all other costs to administer and operate the water system, including insurance, water testing and electricity.

The difference between Revenue and Expenses is reported as Net revenue (expenses). Any transfers to or from capital or reserve funds for the service (Transfers to own funds) are deducted from this amount and it is then added to any surplus or deficit carry forward from the prior year, yielding an Accumulated Surplus (or deficit). In alignment with Local Government Act Section 374 (11), any deficit must be carried forward and included in the next year's financial plan.

WATER SYSTEM PROBLEMS - WHO TO CALL:

To report any event or to leave a message regarding the Highland/Fernwood Water System, call either:

CRD water system <i>emergency</i> call centre:	1-855-822-4426 (toll free)
	1-250-474-9630 (toll)
CRD water system <i>general enquiries</i> (toll free):	1-800-663-4425

When phoning with respect to an emergency, please specify to the operator, the service area in which the emergency has occurred.

Submitted by:	Jason Dales, Senior Manager B.Sc, WD IV, Infrastructure Operations
	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
	Dan Ovington, BBA , Senior Manager, Salt Spring Island Electoral Area
	Varinia Somosan, CPA, CGA, Sr. Mgr., Financial Services / Deputy CFO
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

Appendix A: [2024 Statement of Operations and Reserve Balances](#)

For questions related to this Annual Report, please email saltspring@crd.bc.ca

Table 1: 2024 Summary of Raw Water Test Results, Highland / Fernwood Water System										
PARAMETER		2024 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2014 - 2023 ANALYTICAL RESULTS			
Parameter	Units of	Annual	Samples	Range		≤ = Less than or equal to		Samples	Range	
Name	Measure	Median	Analyzed	Minimum	Maximum		Median	Analyzed	Minimum	Maximum
ND means Not Detected by analytical method used										
Physical/Biological Parameters										
Carbon, Total Organic	mg/L as C	4.1	4	3.6	5.0	No Guideline Required 7.0 - 10.5 AO	3.90	31	2.80	5.67
Colour, True	TCU	12.0	16	7.0	22.0		6.65	130	3.00	25.00
Hardness as CaCO ₃	mg/L	39.2	5	36.2	39.8		38.65	34	28.10	46.10
pH	pH units	Not tested in 2024					7.70	21	7.18	8.90
Turbidity	NTU	1.60	17	0.55	3.60		1.19	188	0.17	19.00
Water Temperature	°C	16.00	28	6.00	23.00	15°C AO	15.00	191	5.00	25.00
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	170	18	< 1	2100		120	186	<1	6000
<i>E. coli</i>	CFU/100 mL	< 1	18	< 1	8		< 1	187	<1	180
Hetero. Plate Count, 7 day	CFU/1 mL	Last analyzed in 2013					Last analyzed in 2013			
Algal Toxins										
Microcystin (Abraxis)	ug/L	Not tested in 2024				1.5	<1	99	<1	<1
<i>Cryptosporidium</i> , Total oocysts	oocysts/100 L	<1	2	<1	<1	Zero detection desirable	<1	20	<1	1
<i>Giardia</i> , Total cysts	cysts/100 L	<1	2	<1	<1	Zero detection desirable	< 1	20	< 1	1.2
Metals										
Aluminum	ug/L as Al	< 3	5	< 3	10.6	2900 MAC / 100 OG	8	35	< 3	41.8
Antimony	ug/L as Sb	< 0.5	5	< 0.5	< 0.5	6 MAC	< 0.5	35	0.05	< 10
Arsenic	ug/L as As	0.45	5	0.38	0.62	10 MAC	< 0.5	35	0.32	0.85
Barium	ug/L as Ba	13	5	12	13.9	100 MAC	12	35	< 1	15.1
Beryllium	ug/L as Be	< 0.1	5	< 0.1	< 0.1		< 0.1	35	< 0.01	< 3
Bismuth	ug/L as Bi	< 1	5	< 1	< 1		< 1	33	< 0.005	< 1
Boron	ug/L as B	< 50	5	< 50	73	5000 MAC	< 50	35	43	343
Cadmium	ug/L as Cd	< 0.01	5	< 0.01	< 0.01	7 MAC	< 0.01	35	< 0.005	0.1
Calcium	mg/L as Ca	9.98	5	9.47	10.3	No Guideline Required	10	35	8.51	12.3
Chromium	ug/L as Cr	< 1	5	< 1	< 1	50 MAC	< 1	35	< 0.1	< 10
Cobalt	ug/L as Co	< 0.2	5	< 0.2	< 0.2		< 0.2	35	0.0264	< 20
Copper	ug/L as Cu	0.97	5	0.64	1.25	2000 MAC / ≤ 1000 AO	1	35	< 0.5	< 8
Iron	ug/L as Fe	16.3	5	9.2	87.9	≤ 100 AO	21	35	0.1	176
Lead	ug/L as Pb	< 0.2	5	< 0.2	< 0.2	5 MAC	< 0.2	35	0.0954	0.5
Lithium	ug/L as Li	8.2	5	6.8	8.2		8	21	6.4	11.5
Magnesium	mg/L as Mg	3.43	5	3.03	3.46	No Guideline Required	3	35	1.09	4.47
Manganese	ug/L as Mn	23.4	5	7.5	101	120 MAC / ≤ 20 AO	23	35	< 4	110
Molybdenum	ug/L as Mo	< 1	5	< 1	< 1		< 1	35	0.059	< 20
Nickel	ug/L as Ni	< 1	5	< 1	< 1		< 1	35	0.298	< 50
Potassium	mg/L as K	0.885	5	0.861	0.913		1	35	0.305	0.963
Selenium	ug/L as Se	< 0.1	5	< 0.1	0.14	50 MAC	< 0.1	35	< 0.04	0.5
Silicon	ug/L as Si	1920	5	688	2410		1660	35	345	6780
Silver	ug/L as Ag	< 0.02	5	< 0.02	< 0.02	No Guideline Required	< 0.02	35	< 0.005	< 10
Sodium	mg/L as Na	19.1	5	18.1	20.6	≤ 200 AO	20	35	12.1	87.3
Strontium	ug/L as Sr	97.9	5	93.9	101	7000 MAC	95	35	36.7	116
Sulphur	mg/L as S	4.3	5	3.9	4.8		4	33	< 3	8.7
Tin	ug/L as Sn	< 5	5	< 5	< 5		< 5	35	< 0.2	< 20
Titanium	ug/L as Ti	< 5	5	< 5	< 5		< 5	35	0.82	< 10
Thallium	ug/L as Tl	< 0.01	5	< 0.01	< 0.01		< 0.01	33	< 0.002	< 0.05
Uranium	ug/L as U	< 0.1	5	< 0.1	< 0.1	20 MAC	< 0.1	33	0.0026	< 0.1
Vanadium	ug/L as V	< 5	5	< 5	< 5		< 5	35	< 0.2	< 10
Zinc	ug/L as Zn	< 5	5	< 5	< 5	≤ 5000 AO	< 5	35	1.98	136
Zirconium	ug/L as Zr	< 0.1	5	< 0.1	< 0.1		< 0.1	33	< 0.1	< 0.5

Table 2: 2024 Summary of Treated Water Test Results, Fernwood Distribution System										
PARAMETER		2024 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2014 - 2023 ANALYTICAL RESULTS			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum Maximum		≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum Maximum	
ND means Not Detected by analytical method used										
Physical Parameters										
Hardness as CaCO ₃	mg/L	39.1	13	35.5	42.4		38.9	78	34.1	49.1
Carbon, Total Organic	mg/L as C	2.0	8	1.8	2.1		1.8	63	< 0.3	3.0
Colour, True	TCU	2.5	32	< 2	8.0		< 2	103	1.8	5.0
pH	pH units	Not tested in 2024					7.0	19	6.55	8.1
Turbidity	NTU	0.20	35	0.1	2.9	1 MAC and ≤ 5 AO	0.2	378	0.08	10.5
Water Temperature	°C	14.0	152	5.0	24.0	15°C AO	14.0	639	4	26.0
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	< 1	70	< 1	< 1	0 MAC	< 1	516	<1	9.0
<i>E. coli</i>	CFU/100 mL	< 1	70	< 1	< 1	0 MAC	< 1	516	<1	< 2
Hetero. Plate Count, 7 day	CFU/1 mL	Not tested in 2024				No Guideline Required	< 10	73	<1	800.0
Algal Toxins										
Microcystin (Abraxis)	ug/L	Not tested in 2024				1.5 MAC	<1	41	<1	<1
Anatoxin A	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Cylindrospermopsin	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Microcystin-RR	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Microcystin-YR	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Microcystin-LR	ug/L	Last analyzed in 2013				1.5 MAC	Last analyzed in 2013			
Microcystin-LA	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Nodularin	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Disinfectants										
Disinfectants										
Chlorine, Free Residual	mg/L as Cl ₂	0.98	159	0.22	4.5	No Guideline Required	1.2	1234	0.2	2.7
Chlorine, Total Residual	mg/L as Cl ₂	2.13	1	2.13	2.13	No Guideline Required	1.4	854	0.29	3.5
Disinfection By-Products										
Trihalomethanes (THMs)										
Bromodichloromethane	ug/L	13	4	9.8	14		12.5	40	6.94	20.6
Bromoform	ug/L	< 1	4	< 1	< 1		< 1	40	< 0.1	< 1
Chloroform	ug/L	23	4	17.0	29		22.5	41	9.34	45
Chlorodibromomethane	ug/L	4.5	4	3.5	4.9		4.48	40	2.19	7.1
Total Trihalomethanes	ug/L	40.5	4	31.0	48	100 MAC	40	39	19.4	73
Haloacetic Acids (HAAs)										
HAA5	ug/L	Not tested in 2023				80 MAC	15.8	10	< 0.1	26
Metals										
Aluminum	ug/L as Al	9.1	13	3.1	363.0	2900 MAC / 100 OG	9.65	78	3.2	389
Antimony	ug/L as Sb	< 0.5	13	< 0.5	< 0.5	7 MAC	< 0.5	78	< 0.5	< 0.5
Arsenic	ug/L as As	0.33	13	0.3	0.7	10 MAC	0.31	78	0.2	0.76
Barium	ug/L as Ba	12.2	13	10.5	14.3	100 MAC	12.1	78	9.9	16.4
Beryllium	ug/L as Be	< 0.1	13	< 0.1	< 0.1		< 0.1	78	< 0.1	< 0.1
Bismuth	ug/L as Bi	< 1	13	< 1	< 1		< 1	78	< 1	< 1
Boron	ug/L as B	< 50	13	< 50	68.0	5000 MAC	< 50	78	< 50	53
Cadmium	ug/L as Cd	< 0.01	13	< 0.01	< 0.01	7 MAC	< 0.01	78	< 0.01	0.016
Calcium	mg/L as Ca	10.3	13	9.3	11.7	No Guideline Required	10.25	78	8.57	15.3
Chromium	ug/L as Cr	< 1	13	< 1	< 1	50 MAC	< 1	78	< 1	< 1
Cobalt	ug/L as Co	< 0.2	13	< 0.2	< 0.2		< 0.2	78	< 0.2	0.93
Copper	ug/L as Cu	4.87	13	0.4	24.1	2000 MAC / ≤ 1000 AO	4.635	78	0.39	83.2
Iron	ug/L as Fe	27.7	13	< 5	78.3	≤ 100 AO	25.9	78	< 5	770
Lead	ug/L as Pb	0.33	13	< 0.2	1.7	5 MAC	0.4	82	< 0.2	78.1
Lithium	ug/L as Li	8.1	13	6.6	11.7		7.3	40	6.5	11.7
Magnesium	mg/L as Mg	3.27	13	2.8	3.5	No Guideline Required	3.15	78	2.52	3.7
Manganese	ug/L as Mn	3.7	13	< 1	270.0	120 MAC / ≤ 20 AO	2.35	78	< 1	150
Molybdenum	ug/L as Mo	< 1	13	< 1	< 1		< 1	78	< 1	< 1
Nickel	ug/L as Ni	< 1	13	< 1	< 1		< 1	78	< 1	< 1
Potassium	mg/L as K	0.879	13	0.8	0.9		0.8075	78	0.693	0.879
Selenium	ug/L as Se	< 0.1	13	< 0.1	< 0.1	50 MAC	< 0.1	78	< 0.1	< 0.1
Silicon	ug/L as Si	1930	13	546.0	2340.0		1620	78	322	3700
Silver	ug/L as Ag	< 0.02	13	< 0.02	< 0.02	No Guideline Required	< 0.02	78	< 0.02	0.02
Sodium	mg/L as Na	23.5	13	20.4	25.2	≤ 200 AO	22	78	19.3	25.4
Strontium	ug/L as Sr	97.6	13	92.6	103.0	7000 MAC	94.75	78	85.9	113
Sulphur	mg/L as S	3.9	13	3.3	5.1		4.3	78	3.2	5.9
Tin	ug/L as Sn	< 5	13	< 5	< 5		< 5	78	< 5	< 5
Titanium	ug/L as Ti	< 5	13	< 5	< 5		< 5	78	< 5	< 5
Thallium	ug/L as Th	< 0.01	13	< 0.01	0.0		< 0.01	78	< 0.01	0.042
Uranium	ug/L as U	< 0.1	13	< 0.1	< 0.1	20 MAC	< 0.1	78	< 0.1	< 0.1
Vanadium	ug/L as V	< 5	13	< 5	< 5		< 5	78	< 5	< 5
Zinc	ug/L as Zn	18.3	13	< 5	55.7	≤ 5000 AO	17.4	78	< 5	76.2
Zirconium	ug/L as Zr	< 0.1	13	< 0.1	< 0.1		< 0.1	78	< 0.1	< 0.5

Table 3: 2024 Summary of Treated Water Test Results, Highland Distribution System										
PARAMETER		2024 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2014 - 2023 ANALYTICAL RESULTS			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum Maximum		≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum Maximum	
ND means Not Detected by analytical method used										
Physical Parameters										
Hardness as CaCO ₃	mg/L	50.1	4	46	55		45.9	31	39.8	54.9
Carbon, Total Organic	mg/L as C	1.9	8	1.8	2		1.8	69	< 0.3	4.04
Colour, True	TCU	3.0	32	< 2	11		< 2	103	< 2	4
pH	pH units	Not tested in 2024					7.35	4	7.2	8.1
Turbidity	NTU	0.2	53	0.1	10.1	1 MAC and ≤ 5 AO	0.34	350	<0.14	37.8
Water Temperature	°C	12.0	261	4	23	15°C AO	12	1037	4	23.5
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	< 1	159	< 1	< 1	0 MAC	< 1	1110	0	209
<i>E. coli</i>	CFU/100 mL	< 1	159	< 1	< 1	0 MAC	< 1	1110	0	1
Hetero. Plate Count 7 day	CFU/1 mL	Not tested in 2024				No Guideline Required	30	58	<10	310
Algal Toxins										
Microcystin (Abraxis)	ug/L	Not tested in 2024				1.5	<1	41	<1	<1
Anatoxin A	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Cylindrospermopsin	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Microcystin-RR	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Microcystin-YR	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Microcystin-LR	ug/L	Last analyzed in 2013				1.5 MAC	Last analyzed in 2013			
Microcystin-LA	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Nodularin	ug/L	Last analyzed in 2013					Last analyzed in 2013			
Disinfectants										
Disinfectants										
Chlorine, Free Residual	mg/L as Cl ₂	0.71	253	0.2	2.18	No Guideline Required	0.95	2059	0.06	4.2
Chlorine, Total Residual	mg/L as Cl ₂	Not tested in 2024				No Guideline Required	1.14	1357	0.18	3.2
Disinfection By-Products										
Trihalomethanes (THMs)										
Bromodichloromethane	ug/L	15	8	11	21		16	77	<0.1	31.9
Bromoform	ug/L	< 1	8	< 1	< 1		< 1	76	< 0.1	4.2
Chloroform	ug/L	30	8	21	54		30	79	15.3	90.2
Chlorodibromomethane	ug/L	5.45	8	3.8	7		5.6	77	<0.1	15.5
Total Trihalomethanes	ug/L	50.5	8	36	82	100 MAC	52.5	74	29.3	128
Haloacetic Acids (HAAs)										
HAA5	ug/L	Not tested in 2023				80 MAC	19.5	20	9.21	37.7
Metals										
Aluminum	ug/L as Al	17.3	4	5.8	21.7	2900 MAC / 100 OG	16.2	31	< 3	58.8
Antimony	ug/L as Sb	< 0.5	4	< 0.5	< 0.5	6 MAC	< 0.5	31	< 0.5	< 0.5
Arsenic	ug/L as As	0.34	4	0.3	0.4	10 MAC	0.29	31	0.22	0.48
Barium	ug/L as Ba	10.9	4	10.2	12.8	100 MAC	10.8	31	6.7	14.3
Beryllium	ug/L as Be	< 0.1	4	< 0.1	< 0.1		< 0.1	31	< 0.1	< 0.1
Bismuth	ug/L as Bi	< 1	4	< 1	< 1		< 1	31	< 1	< 1
Boron	ug/L as B	< 50	4	< 50	68.0	5000 MAC	< 50	31	< 50	52
Cadmium	ug/L as Cd	< 0.01	4	< 0.01	< 0.01	7 MAC	< 0.01	31	< 0.01	< 0.01
Calcium	mg/L as Ca	17.45	4	15.6	19.9	No Guideline Required	15.8	31	11.1	19.1
Chromium	ug/L as Cr	< 1	4	< 1	< 1	50 MAC	< 1	31	< 1	< 1
Cobalt	ug/L as Co	< 0.2	4	< 0.2	< 0.2		< 0.2	31	< 0.2	< 0.2
Copper	ug/L as Cu	2.8	4	2.1	3.5	2000 MAC / ≤ 1000 AO	3.65	31	2.0	8.9
Iron	ug/L as Fe	79.3	4	65.0	122.0	≤ 100 AO	96	31	40.9	591
Lead	ug/L as Pb	< 0.2	4	< 0.2	0.2	5 MAC	0.25	31	< 0.2	1.4
Lithium	ug/L as Li	7.7	4	6.4	8.1		7.1	15	6.6	8.2
Magnesium	mg/L as Mg	1.6	4	1.3	1.7	No Guideline Required	1.8	31	1.0	3.2
Manganese	ug/L as Mn	2.5	4	< 1	4.0	120 MAC / ≤ 20 AO	2.4	31	< 1	57.9
Molybdenum	ug/L as Mo	< 1	4	< 1	< 1		< 1	31	< 1	< 1
Nickel	ug/L as Ni	< 1	4	< 1	< 1		< 1	31	< 1	< 1
Potassium	mg/L as K	0.86	4	0.8	0.9		0.788	31	0.72	0.90
Selenium	ug/L as Se	< 0.1	4	< 0.1	< 0.1	50 MAC	< 0.1	31	< 0.1	< 0.1
Silicon	ug/L as Si	2290	4	1550	2860		1970	31	1190	3740
Silver	ug/L as Ag	< 0.02	4	< 0.02	< 0.02	No Guideline Required	< 0.02	31	< 0.02	< 0.02
Sodium	mg/L as Na	22.2	4	20.7	23.4	≤ 200 AO	21.9	31	19.9	24.1
Strontium	ug/L as Sr	106	4	99	111	7000 MAC	101	31	89.3	115
Sulphur	mg/L as S	3.8	4	3.3	4.1		4.5	31	3.3	5.7
Tin	ug/L as Sn	< 5	4	< 5	< 5		< 5	31	< 5	< 5
Titanium	ug/L as Ti	< 5	4	< 5	< 5		< 5	31	< 5	< 5
Thallium	ug/L as Th	< 0.01	4	< 0.01	< 0.01		< 0.01	31	< 0.01	< 0.01
Uranium	ug/L as U	< 0.1	4	< 0.1	< 0.1	20 MAC	< 0.1	31	< 0.1	< 0.1
Vanadium	ug/L as V	< 5	4	< 5	< 5		< 5	31	< 5	< 5
Zinc	ug/L as Zn	< 5	4	< 5	6.8	≤ 5000 AO	7.9	31	< 5	60.7
Zirconium	ug/L as Zn	< 0.1	4	< 0.1	< 0.1		< 0.1	31	< 0.1	< 0.5

CAPITAL REGIONAL DISTRICT

HIGHLAND / FERNWOOD WATER

Statement of Operations (Unaudited)

For the Year Ended December 31, 2024

	2024	2023
Revenue		
Transfers from government	77,630	75,000
User Charges	412,749	390,378
Sale - Water	76,599	68,396
Other revenue from own sources:		
Interest earnings	567	529
Transfer from Operating Reserve Fund	20,000	-
Other revenue	1,756	1,531
Total Revenue	589,301	535,834
Expenses		
General government services	17,462	16,949
Contract for Services	14,103	14,074
CRD Labour and Operating costs	268,014	206,293
Debt Servicing Costs	34,431	34,399
Supplies	31,362	47,048
Other expenses	92,048	74,381
Total Expenses	457,420	393,144
Net revenue (expenses)	131,881	142,690
Transfers to own funds:		
Capital Reserve Fund	76,076	75,000
Operating Reserve Fund	55,805	67,690
Annual surplus/(deficit)	-	-
Accumulated surplus/(deficit), beginning of year	-	-
Accumulated surplus/(deficit), end of year	\$ -	-

CAPITAL REGIONAL DISTRICT

HIGHLAND / FERNWOOD WATER

Statement of Reserve Balances (Unaudited)

For the Year Ended December 31, 2024

	Capital Reserve	
	2024	2023
Beginning Balance	111,444	41,340
Transfer from Operating Budget	76,076	75,000
Transfer from Completed Capital Projects	43,356	-
Transfer to Capital Project	(117,500)	(10,000)
Interest Income	3,187	5,104
Ending Balance	116,563	111,444

	Operating Reserve	
	2024	2023
Beginning Balance	101,101	30,566
Transfer from Operating Budget	55,805	67,690
Transfer to Operating Budget	(20,000)	-
Interest Income	4,662	2,845
Ending Balance	141,568	101,101

CAPITAL REGIONAL DISTRICT

HIGHLAND WATER

Statement of Operations (Unaudited) For the Year Ended December 31, 2024

	2024	2023
Revenue		
Transfers from government	31,726	31,795
Other revenue from own sources:		
Interest earnings	116	173
MFA Debt Reserve Earning	4,087	172
Total Revenue	35,929	32,140
Expenses		
General government services	27	43
Debt Servicing Costs	30,834	32,044
Total Expenses	30,861	32,087
Net revenue (expenses)	5,068	53
Annual surplus/(deficit)	5,068	53
Accumulated surplus/(deficit), beginning of year	172	119
Accumulated surplus/(deficit), end of year	\$ 5,240	172

CAPITAL REGIONAL DISTRICT

FERNWOOD WATER

Statement of Operations (Unaudited)

For the Year Ended December 31, 2024

	2024	2023
Revenue		
Transfers from government	14,621	14,658
Other revenue from own sources:		
Interest earnings	41	70
MFA Debt Reserve Earning	1,653	85
Total Revenue	16,315	14,813
Expenses		
General government services	13	26
Debt Servicing Costs	14,281	14,763
Total Expenses	14,294	14,789
Net revenue (expenses)	2,021	24
Annual surplus/(deficit)	2,021	24
Accumulated surplus/(deficit), beginning of year	70	46
Accumulated surplus/(deficit), end of year	\$ 2,091	70