Fernwood and Highland Water Service

2025 Annual Report

CRD | Drinking Water

INTRODUCTION

This report provides a summary of the Fernwood and Highland Water Service for 2025. 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 a new water treatment plant and 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 m^3 per year and store up to 30,800 m^3. 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 321of those parcels connected to the service.

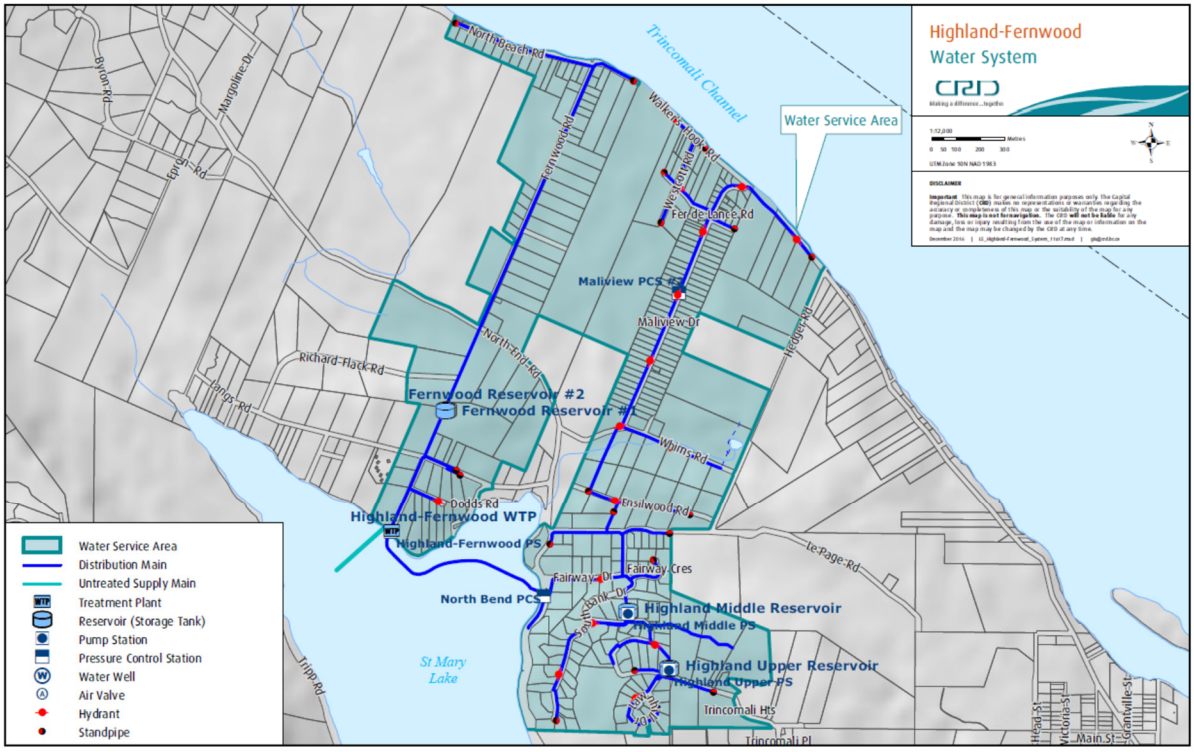

Figure 1: Fernwood and Highland Water Service

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, seasonal chemical pre-oxidation, ultraviolet disinfection, then chlorination prior to being pumped, via the distribution system to four different reservoirs. The WTP design flow rate is 11.3 L/sec (150 Igpm);
- one raw water pump station on Maycock Road, adjacent to the lake. (flow rate of two pumps running is 4.6 L/sec (60 Igpm);
- approximately 12,000 m of water distribution pipe
- 4 water reservoirs – one 180 m^3 (40,000 Ig) on the Highland system, one 91 m^3 (20,000 Ig) on the Highland system, one 45 m^3 (10,000 Ig) on the Fernwood system and, one 91 m^3 (20,000 Ig) 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, 89,480 cubic meters (m^3) of water was extracted (water production) from St. Marys Lake in 2025; a 14% increase from the previous year and a 22% increase from the five-year rolling average. Water demand (customer water billing) for the service totalled 54,798 m^3 of water; a 1% decrease from the previous year and a 6% increase from the five-year rolling average.

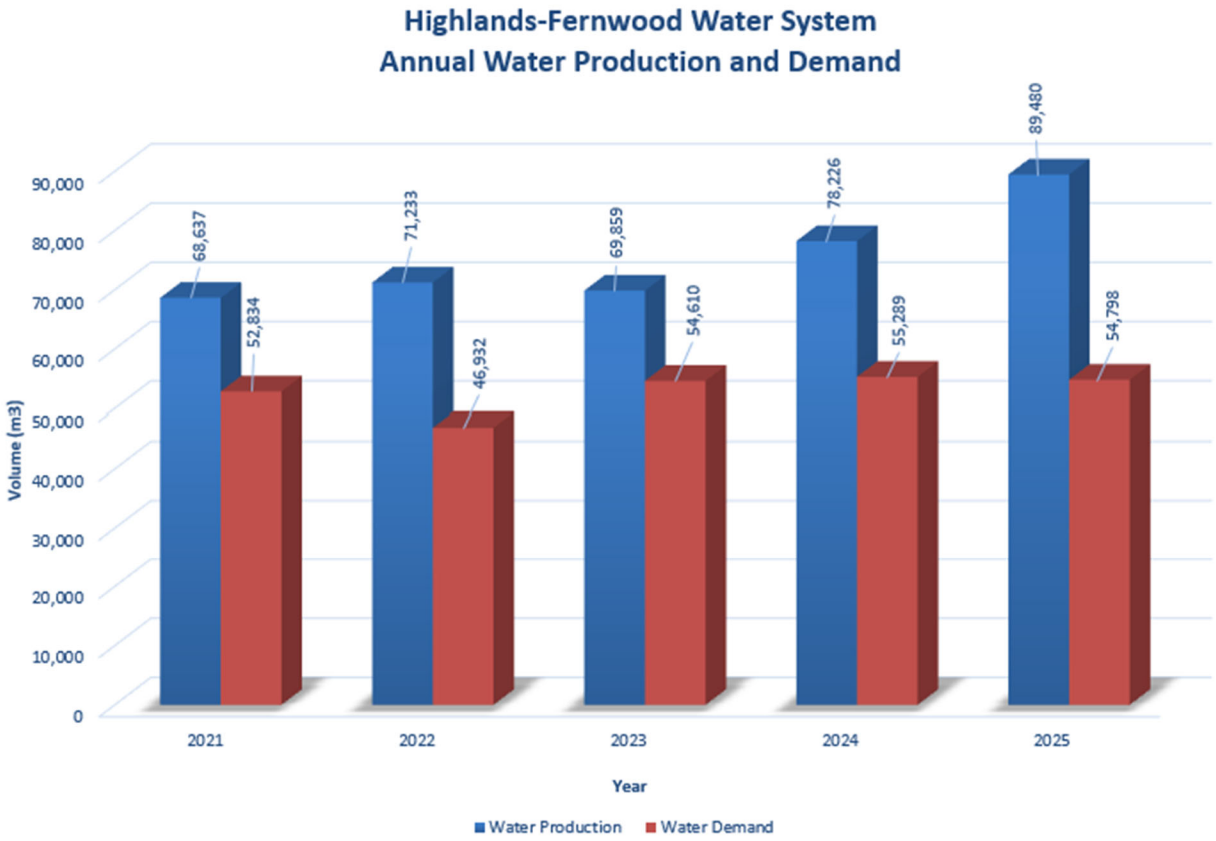

Figure 2: Fernwood and Highland Water Service Annual Water Production and Demand

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 daily pattern and a seasonal monthly pattern where the monthly total flow peaks during the summer months. The 2025 monthly flow information is indicative of this seasonal pattern. A notable increase in production above previous averages between March and October 2025. This increase is due to a combination of several leaks in the system as well as additional water flushing as part of the response to the manganese water quality advisory issued. Many water repairs were conducted in 2025 and identified in the Operational Highlights section of this report.

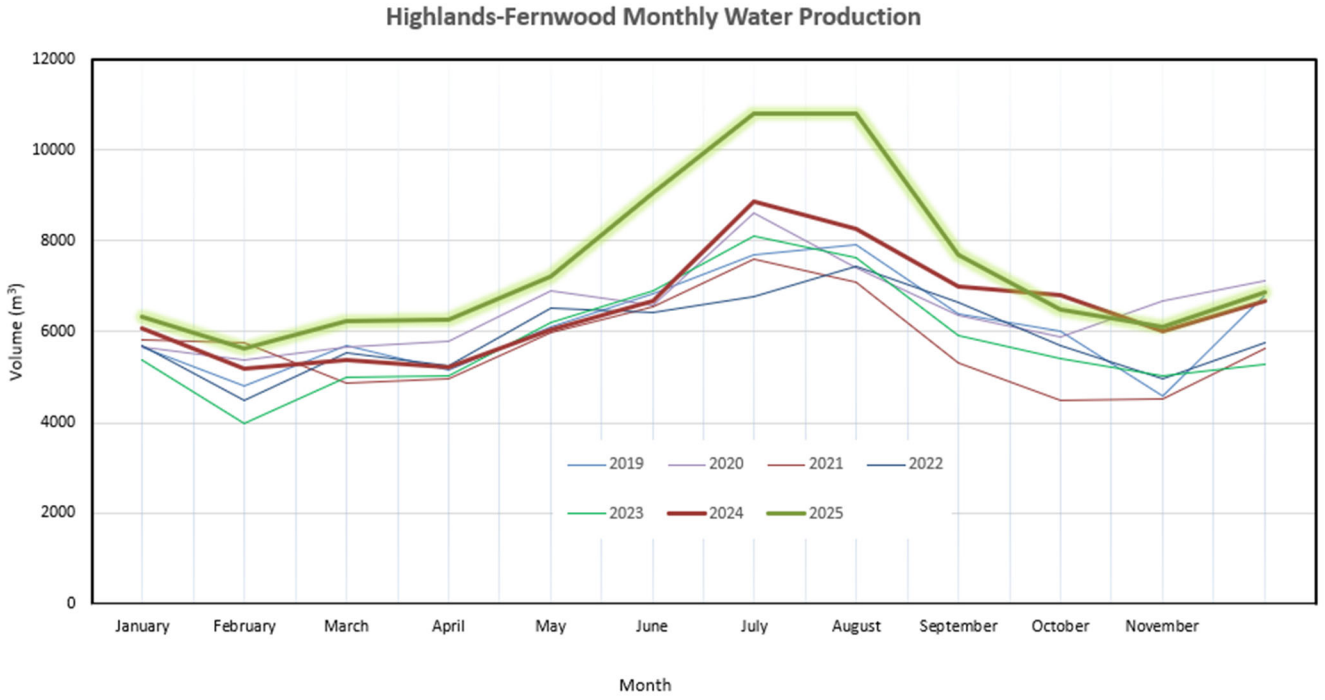

Figure 3: Fernwood and Highland Water Service Monthly Water Production

The Fernwood and Highland Water System is fully metered. 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 39%. This represents a 9.5% increase from the previous year. This increase is largely due to additional water system flushing during the operational response to manganese as well as several repaired leaks in the distribution system.

WATER QUALITY

In 2025, 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 one water main break that led to partial Boil Water Advisories (BWA): August 20 – 22. Also, St. Mary Lake experienced an almost continuous cyanobacteria bloom from February to October (except for mid-June to mid-July). Various species of potentially toxin producing cyanobacteria were responsible for this bloom, 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.

A new intake located deeper in St. Mary Lake was commissioned in January 2025. Drawing water from this deeper zone led to high iron and manganese concentrations in the raw water when anoxic conditions developed in the stratified lake in July 2025. A manganese Water Quality Advisory was issued for the entire system from July 11 to August 11. Drinking water was also discoloured during this period and again during a second episode in November. An emergency shallow intake was used from August 1 to November 5 to address the elevated metal concentrations and associated discolouration. In addition, iron and manganese treatment was commissioned on November 6 to prevent similar events in the future.

The data below provides a summary of the water quality characteristics in 2025:

Raw Water:

- Raw water generally showed low levels of total coliform and *E. coli* during cold-weather periods, with pronounced spikes in the summer.
- No parasitic *Cryptosporidium* oocysts or *Giardia* cysts were detected.
- Analyses of raw water samples showed low iron and manganese concentrations from January to June, followed by sharply elevated concentrations of both metals in July. Manganese in particular reached levels not previously recorded in the raw water entering the treatment plant, peaking at 618 µg/L on July 23. This increase resulted from using a new deep-water intake for the first time during the summer season, which extracted water from an anoxic zone in the seasonally stratified St. Mary Lake. Anoxic conditions promote the release of iron and manganese from lake sediments. After switching to a newly installed shallow emergency intake on August 1st, that supplied water from a higher and more oxygenated layer of the water column, concentrations of both metals declined. Iron and manganese concentrations rose again in November following the lake turnover event, reaching 141 µg/L for manganese and 96 µg/L for iron. This seasonal increase in metal concentrations after turnover was consistent with historical patterns.
- The raw water was slightly hard (median hardness 39.2 mg/L $CaCO_3$).
- Raw water turbidity was generally below or near 1 NTU, with occasional higher values during the summer and winter months (for example, up to 1.5 NTU in February and up to 2.1 NTU in September). These periods of elevated turbidity were typically associated with strong cyanobacteria blooms or rain driven runoff events.
- 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 involving several species occurred almost continuously from winter through fall in St. Mary Lake. One pronounced bloom lasted from February 11 to June 13, followed by another from July 15 to October 16. Although these blooms included species capable of producing toxins, no cyanotoxins (microcystin) were detected in the raw water entering the treatment plant.

Treated Water:

- Parts of the Highland Distribution System were subject to a precautionary Boil Water Advisory (BWA) due to a main break event between August 20 and 22.
- The treated water was safe to drink outside the period covered by the BWA, and no indicator bacteria were detected in any Fernwood Distribution System sample throughout the year. The Highland Distribution System recorded one sample with a low concentration of total coliforms on September 2. A resample collected shortly afterward was free of coliform bacteria, indicating that there was no actual drinking water contamination.
- Treated water turbidity remained well below the 1.0 NTU limit throughout most of the year across the systems. A few distribution system samples in the Fernwood and Highland systems showed elevated turbidity during periods of increased iron and manganese concentrations. These metals precipitate after contact with chlorine and can accumulate in low flow areas of the distribution systems, leading to localized turbidity increases. Flushing was carried out to remove the accumulated particles.
- Levels of the regulated disinfection by-product trihalomethanes (THM) were well below the GCDWQ limit of 100 µg/L across both the Fernwood and Highland Distribution Systems. Haloacetic acids (HAA) were not tested in 2025. When THM concentrations remain low, HAA testing is conducted only every five years to confirm baseline conditions. The most recent HAA testing was completed in 2021.
- The treated water total organic carbon concentration (TOC) in both distribution systems was similar to previous years, ranging from 1.5 to 2.4 mg/L in the Fernwood Distribution System, and 1.5 to 2.6 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 across both distribution systems were high during July water quality event and elevated during the lake turnover event in November. Both periods saw the typical iron and manganese induced drinking water discolouration, but during the July event the manganese concentrations even exceeded the GCDWQ health limit and a Water Quality Advisory was issued between July 11 to August 11. During the November event, potassium permanganate treatment was introduced at the water treatment plant, which ensured that any exceedances were limited to the GCDWQ aesthetic objective only.
- Water colour values exceeded the aesthetic objective during the periods of elevated manganese, but also in individual distribution system samples in February and May due to sedimentation issues in low flow areas.
- Water temperature exceeded the aesthetic objective from June to October.

Table 1, 2 and 3 below provide a summary of the 2025 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 Electoral Area Services Water Operations staff in 2025:

Emergency response to water system breaks at:

- 314 Fernwood Rd shutoff water for leak repair on private side
- 143 Maliview Dr service line repair
- 272 Maliview Dr water main break and hydrant replacement
- 890 Walkers Hook Rd watermain break
- 110 Southbank Rd watermain break
- 214 Maliview Rd watermain break
- 105 Fernwood Rd service line repair
- 150 Maliview Dr service line repair
- 120 Lawnhill Dr service line repair
- 260 Southbank Dr service line repair
- Manganese water quality response

Treatment Plant:

- Raw water pump shaft seal replacement
- Replaced pump room heater due to failure
- Chlorine room electrical repairs and ventilation
- Air saturator pressure control repair
- Chlorine analyzer probe replacement and recalibrations

Distribution System:

- 196 Maliview Dr service line replacement to property line
- 315 Fernwood Rd meter replacement due to failure
- 320 Maliview Dr main valve repair
- 124 Fer de Lance main valve repair
- 273 Maliview Dr service line replacement due to leak
- 1128 North Beach Rd service meter leak repair
- 188 Langs Rd Standpipe replacement due to leak
- Upper reservoir pressure pump replacement due to failure
- Maliview Dr pressure reducing valve repairs

CAPITAL IMPROVEMENTS

The following are capital projects in progress or completed in 2025:

19-01 Water Intake and Screen
The Water Intake and Screen project was completed in early 2025 with the implementation of the permanent new intake.

19-03 Safe Work Procedures
The safe work procedures have been implemented as needed and the project has been closed. Going forward procedures will be included in operations budgeting.

21-02 Power Generation Equipment Design
This project is completed and closed with the design phase delivered.

22-03 Safety Improvement for H&F WTP
The anchors were installed above the WTP equipment. The project is completed and closed.

24-06 Spares for Chlorine and Coagulant Pumps
This project is to purchase critical spares.

24-04 Safety Chain Replacement WTP
This chain was replaced with a railing and is complete and closed.

21-01 Public Engagement
The public engagement project is for support of the public engagement and borrowing process. It remains open while the borrowing process is still unresolved for critical projects.

24-05 Reservoir 1 Repair roof top Railing
The anchor points on Fernwood Reservoir 1 were installed to replace the railing. Operator training will complete the project.

The Capital Projects Financial Summary for 2025 can be found in Appendix A.

Upcoming Projects in 2026 include:

- Water main replacement strategy – reserve and debt funded unsuccessfully
- Fernwood Pump Station demolition – reserve funded
- SCADA Design project for critical controls upgrade – design phase reserve funded
- SCADA controls upgrade – construction phase CWF and debt funded unsuccessfully
- Highland Middle Reservoir assessment – reserve funded
- Pressure Reducing Valve design and construction – CWF and reserve funded
- Intake Location and Sampling program – CWF and reserve funded

2025 FINANCIAL REPORT

Please refer to the attached 2025 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 *emergency* call centre: **1-855-822-4426 (toll free)**
1-250-474-9630 (toll)

CRD water system *general enquiries* (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.

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Appendix A: 2025 Capital Projects List -Financial Summary
Appendix B: 2025 Statement of Operations and Reserve Balances

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

Table 1: 2025 Summary of Raw Water Test Results, Highland / Fernwood Water System										
PARAMETER		**2025 ANALYTICAL RESULTS**				**CANADIAN GUIDELINES**	**2015 - 2024 ANALYTICAL RESULTS**			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum	Range Maximum	≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum	Range Maximum
ND means Not Detected by analytical method used										
Physical/Biological Parameters										
Carbon, Total Organic	mg/L as C	**4.1**	4	3.3	4.7		3.98	35	2.8	5.67
Colour, True	TCU	**11**	18	6	20		7	146	3	25
Hardness as $CaCO_3$	mg/L	**38.9**	9	36.9	39.7	No Guideline Required	38.65	38	28.1	46.1
pH	pH units	Not tested in 2025				7.0 - 10.5 AO	7.7	20	7.18	8.9
Turbidity	NTU	**1.1**	18	0.35	2.1		1.3	178	0.33	19
Water Temperature	°C	**10**	29	4	24	15°C AO	15	219	5	25
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	**34**	19	1	790		150	176	<1	4000
E. coli	CFU/100 mL	**< 1**	19	< 1	25		< 1	177	<1	180
Hetero. Plate Count, 7 day	CFU/1 mL	Last analyzed in 2013					Last analyzed in 2013			
Algal Toxins										
Microcystin (Abraxis)	ug/L	<1	24	<1	<1	1.5	<1	100	<1	<1
Cryptosporidium, Total oocysts	oocysts/100 L	**<1**	2	<1	<1	Zero detection desirable	< 1	18	<1	1.92
Giardia, Total cysts	cysts/100 L	**<1**	2	<1	<1	Zero detection desirable	< 1	18	<1	1.2
Metals										
Aluminum	ug/L as Al	**< 3**	9	< 3	11.6	2900 MAC / 100 OG	6.8	38	< 3	41.8
Antimony	ug/L as Sb	**< 0.5**	9	< 0.5	< 0.5	6 MAC	< 0.5	38	0.05	< 0.5
Arsenic	ug/L as As	**0.64**	9	0.28	1.04	10 MAC	0.48	38	0.32	0.85
Barium	ug/L as Ba	**14**	9	11.7	22.3	100 MAC	12.65	38	< 1	15.1
Beryllium	ug/L as Be	**< 0.1**	9	< 0.1	< 0.1		< 0.1	38	< 0.01	< 0.1
Bismuth	ug/L as Bi	**< 1**	9	< 1	< 1		< 1	38	< 0.005	< 1
Boron	ug/L as B	**< 50**	9	< 50	54	5000 MAC	< 50	38	43	343
Cadmium	ug/L as Cd	**< 0.01**	9	< 0.01	< 0.01	7 MAC	< 0.01	38	< 0.005	0.056
Calcium	mg/L as Ca	**9.97**	9	9.45	10.4	No Guideline Required	9.96	38	8.51	12.3
Chromium	ug/L as Cr	**< 1**	9	< 1	< 1	50 MAC	< 1	38	< 0.1	1.5
Cobalt	ug/L as Co	**< 0.2**	9	< 0.2	0.22		< 0.2	38	0.0264	1.23
Copper	ug/L as Cu	**0.63**	9	0.5	2.35	2000 MAC / ≤ 1000 AO	1.185	38	< 0.5	4.55
Iron	ug/L as Fe	**48.4**	9	< 5	483	≤ 100 AO	21	38	6	176
Lead	ug/L as Pb	**< 0.2**	9	< 0.2	0.34	5 MAC	< 0.2	38	0.0954	0.36
Lithium	ug/L as Li	**7.7**	9	7	8.3		7.9	26	6.4	11.5
Magnesium	mg/L as Mg	**3.39**	9	3.16	3.46	No Guideline Required	3.275	38	1.09	3.83
Manganese	ug/L as Mn	**136**	9	5.3	618	120 MAC / ≤ 20 AO	23.45	38	5.4	110
Molybdenum	ug/L as Mo	**< 1**	9	< 1	< 1		< 1	38	0.059	4.4
Nickel	ug/L as Ni	**< 1**	9	< 1	< 1		< 1	38	0.298	5.9
Potassium	mg/L as K	**0.861**	9	0.794	0.908		0.828	38	0.305	0.963
Selenium	ug/L as Se	**< 0.1**	9	< 0.1	0.51	50 MAC	< 0.1	38	< 0.04	0.14
Silicon	ug/L as Si	**1870**	9	< 100	2250		1790	38	345	6780
Silver	ug/L as Ag	**< 0.02**	9	< 0.02	< 0.02	No Guideline Required	< 0.02	38	< 0.005	0.062
Sodium	mg/L as Na	**19.6**	9	18.2	21.4	≤ 200 AO	19.5	38	17.9	87.3
Strontium	ug/L as Sr	**98.2**	9	90.4	106	7000 MAC	95.35	38	36.7	116
Sulphur	mg/L as S	**3.9**	9	3.6	4.7		4.35	38	< 3	8.7
Tin	ug/L as Sn	**< 5**	9	< 5	< 5		< 5	38	< 0.2	< 5
Titanium	ug/L as Ti	**< 5**	9	< 5	< 5		< 5	38	0.82	< 5
Thallium	ug/L as Tl	**< 0.01**	9	< 0.01	< 0.01		< 0.01	38	< 0.002	< 0.05
Uranium	ug/L as U	**< 0.1**	9	< 0.1	< 0.1	20 MAC	< 0.1	38	0.0026	< 0.1
Vanadium	ug/L as V	**< 5**	9	< 5	< 5		< 5	38	< 0.2	< 5
Zinc	ug/L as Zn	**< 5**	9	< 5	7.3	≤ 5000 AO	< 5	38	1.98	24.2
Zirconium	ug/L as Zr	**< 0.1**	9	< 0.1	< 0.1		< 0.1	38	< 0.1	< 0.5

Table 2: 2025 Summary of Treated Water Test Results, Fernwood Distribution System										
PARAMETER		2025 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2015 - 2024 ANALYTICAL RESULTS			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum	Range Maximum	≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum	Range Maximum
ND means Not Detected by analytical method used										
Physical Parameters										
Hardness as $CaCO_3$	mg/L	**39.5**	27	36.6	47.6		38.9	91	34.1	49.1
Carbon, Total Organic	mg/L as C	**1.9**	8	1.5	2.4		1.8	67	1.1	3
Colour, True	TCU	**< 2**	36	1	8		< 2	135	1.8	8
pH	pH units	Not tested in 2025					7	19	6.55	8.1
Turbidity	NTU	**0.15**	38	0.05	14	1 MAC and ≤ 5 AO	0.17	368	0.05	8.6
Water Temperature	°C	**12**	120	4.5	24	15°C AO	14	795	4	26
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	**< 1**	73	< 1	< 1	0 MAC	< 1	536	<1	9
E. coli	CFU/100 mL	**< 1**	73	< 1	< 1	0 MAC	< 1	536	<1	< 2
Hetero. Plate Count, 7 day	CFU/1 mL	Not tested in 2025				No Guideline Required	< 10	73	<1	800
Algal Toxins										
Microcystin (Abraxis)	ug/L	Not tested in 2025				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 Cl2	**1.035**	140	0.23	2.2	No Guideline Required	1.16	1321	0.2	4.5
Chlorine, Total Residual	mg/L as Cl_2	**1.48**	4	1.03	1.95	No Guideline Required	1.43	780	0.29	3.5
Disinfection By-Products										
Trihalomethanes (THMs)										
Bromodichloromethane	ug/L	**10.65**	4	8.7	13		14.5	40	6.94	20.6
Bromoform	ug/L	**< 1**	4	< 1	< 1		< 1	40	< 0.1	< 1
Chloroform	ug/L	**18**	4	14	21		22.5	40	12.7	45
Chlorodibromomethane	ug/L	**4.05**	4	3.4	4.9		5.75	40	2.19	9.07
Total Trihalomethanes	ug/L	**33**	4	26	39	100 MAC	40	40	23	73
Haloacetic Acids (HAAs)										
HAA5	ug/L	Not tested in 2025				80 MAC	#N/A	#N/A	#N/A	#N/A
Metals										
Aluminum	ug/L as Al	**10.8**	27	< 3	98.4	2900 MAC / 100 OG	9.6	91	3.1	389
Antimony	ug/L as Sb	**< 0.5**	27	< 0.5	< 0.5	7 MAC	< 0.5	91	< 0.5	< 0.5
Arsenic	ug/L as As	**0.38**	27	0.2	0.67	10 MAC	0.32	91	0.2	0.76
Barium	ug/L as Ba	**13.4**	27	10.8	19.9	100 MAC	12.1	91	9.9	16.4
Beryllium	ug/L as Be	**< 0.1**	27	< 0.1	< 0.1		< 0.1	91	< 0.1	< 0.1
Bismuth	ug/L as Bi	**< 1**	27	< 1	< 1		< 1	91	< 1	< 1
Boron	ug/L as B	**< 50**	27	< 50	54	5000 MAC	< 50	91	< 50	68
Cadmium	ug/L as Cd	**< 0.01**	27	< 0.01	0.025	7 MAC	< 0.01	91	< 0.01	0.016
Calcium	mg/L as Ca	**10.3**	27	9.51	13.8	No Guideline Required	10.3	91	8.57	15.3
Chromium	ug/L as Cr	**< 1**	27	< 1	< 1	50 MAC	< 1	91	< 1	< 1
Cobalt	ug/L as Co	**< 0.2**	27	< 0.2	< 0.2		< 0.2	91	< 0.2	0.93
Copper	ug/L as Cu	**3.51**	27	0.26	13.4	2000 MAC / ≤ 1000 AO	4.64	91	0.39	83.2
Iron	ug/L as Fe	**36.8**	27	< 5	159	≤ 100 AO	27.1	91	< 5	770
Lead	ug/L as Pb	**0.28**	27	< 0.2	1.67	5 MAC	0.37	95	< 0.2	78.1
Lithium	ug/L as Li	**7.8**	27	7.1	9.3		7.4	53	6.5	11.7
Magnesium	mg/L as Mg	**3.28**	27	2.35	3.54	No Guideline Required	3.16	91	2.52	3.7
Manganese	ug/L as Mn	**17.7**	27	< 1	789	120 MAC / ≤ 20 AO	2.4	91	< 1	270
Molybdenum	ug/L as Mo	**< 1**	27	< 1	< 1		< 1	91	< 1	< 1
Nickel	ug/L as Ni	**< 1**	27	< 1	< 1		< 1	91	< 1	< 1
Potassium	mg/L as K	**0.841**	27	0.785	1.01		0.811	91	0.693	0.911
Selenium	ug/L as Se	**< 0.1**	27	< 0.1	< 0.1	50 MAC	< 0.1	91	< 0.1	< 0.1
Silicon	ug/L as Si	**1950**	27	< 100	2460		1780	91	322	3700
Silver	ug/L as Ag	**< 0.02**	27	< 0.02	< 0.02	No Guideline Required	< 0.02	91	< 0.02	0.02
Sodium	mg/L as Na	**22.2**	27	19.6	24.3	≤ 200 AO	22	91	19.3	25.4
Strontium	ug/L as Sr	**97.9**	27	87.1	107	7000 MAC	95.3	91	85.9	113
Sulphur	mg/L as S	**4**	27	3.1	5.7		4.1	91	3.2	5.9
Tin	ug/L as Sn	**< 5**	27	< 5	< 5		< 5	91	< 5	< 5
Titanium	ug/L as Ti	**< 5**	27	< 5	< 5		< 5	91	< 5	< 5
Thallium	ug/L as Th	**< 0.01**	27	< 0.01	< 0.01		< 0.01	91	< 0.01	0.042
Uranium	ug/L as U	**< 0.1**	27	< 0.1	< 0.1	20 MAC	< 0.1	91	< 0.1	< 0.1
Vanadium	ug/L as V	**< 5**	27	< 5	< 5		< 5	91	< 5	< 5
Zinc	ug/L as Zn	**14**	27	< 5	41.9	≤ 5000 AO	17.8	91	< 5	76.2
Zirconium	ug/L as Zr	**< 0.1**	27	< 0.1	< 0.1		< 0.1	91	< 0.1	< 0.5

Table 3: 2025 Summary of Treated Water Test Results, Highland Distribution System										
PARAMETER		2025 ANALYTICAL RESULTS				CANADIAN GUIDELINES	2015 - 2024 ANALYTICAL RESULTS			
Parameter Name	Units of Measure	Annual Median	Samples Analyzed	Range Minimum	Range Maximum	≤ = Less than or equal to	Median	Samples Analyzed	Range Minimum	Range Maximum
ND means Not Detected by analytical method used										
Physical Parameters										
Hardness as $CaCO_3$	mg/L	**41.45**	30	36.4	57.3		46.5	35	39.8	55
Carbon, Total Organic	mg/L as C	**1.85**	8	1.5	2.6		1.8	73	0.85	4.04
Colour, True	TCU	**3**	37	< 2	19		< 2	135	< 2	11
pH	pH units	Not tested in 2024					7.35	4	7.2	8.1
Turbidity	NTU	**0.325**	60	0.1	3.7	1 MAC and ≤ 5 AO	0.3	379	<0.14	11.3
Water Temperature	°C	**12.5**	229	3.5	22.5	15°C AO	12	1300	4	23.5
Microbial Parameters										
Indicator Bacteria										
Coliform, Total	CFU/100 mL	**< 1**	169	< 1	1	0 MAC	< 1	1138	<1	209
E. coli	CFU/100 mL	**< 1**	169	< 1	< 1	0 MAC	< 1	1138	<1	1
Hetero. Plate Count 7 day	CFU/1 mL	Not tested in 2025				No Guideline Required	30	58	<10	310
Algal Toxins										
Microcystin (Abraxis)	ug/L	Not tested in 2025				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 Cl2	**0.82**	235	0.2	2	No Guideline Required	0.91	2165	0.06	4.2
Chlorine, Total Residual	mg/L as Cl_2	Not tested in 2025				No Guideline Required	1.12	1208	0.18	2.9
Disinfection By-Products										
Trihalomethanes (THMs)										
Bromodichloromethane	ug/L	**14**	8	9.1	16		20.5	81	<0.1	31.9
Bromoform	ug/L	**< 1**	8	< 1	< 1		< 1	80	< 0.1	4.2
Chloroform	ug/L	**26**	8	14	34		39.5	83	15.3	90.2
Chlorodibromomethane	ug/L	**5.1**	8	3.5	5.3		8.1	81	<0.1	15.5
Total Trihalomethanes	ug/L	**45.5**	8	27	54	100 MAC	52.5	78	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	**14.7**	30	< 3	45.6	2900 MAC / 100 OG	16.4	35	< 3	58.8
Antimony	ug/L as Sb	**< 0.5**	30	< 0.5	< 0.5	6 MAC	< 0.5	35	< 0.5	< 0.5
Arsenic	ug/L as As	**0.37**	30	0.21	0.78	10 MAC	0.3	35	0.22	0.48
Barium	ug/L as Ba	**13.2**	30	8.7	17.8	100 MAC	10.8	35	6.7	14.3
Beryllium	ug/L as Be	**< 0.1**	30	< 0.1	0.14		< 0.1	35	< 0.1	< 0.1
Bismuth	ug/L as Bi	**< 1**	30	< 1	< 1		< 1	35	< 1	< 1
Boron	ug/L as B	**< 50**	30	< 50	61	5000 MAC	< 50	35	< 50	68
Cadmium	ug/L as Cd	**< 0.01**	30	< 0.01	0.136	7 MAC	< 0.01	35	< 0.01	< 0.01
Calcium	mg/L as Ca	**11.2**	30	9.35	18.6	No Guideline Required	16	35	11.1	19.9
Chromium	ug/L as Cr	**< 1**	30	< 1	< 1	50 MAC	< 1	35	< 1	< 1
Cobalt	ug/L as Co	**< 0.2**	30	< 0.2	< 0.2		< 0.2	35	< 0.2	< 0.2
Copper	ug/L as Cu	**4.305**	30	1.7	66.7	2000 MAC / ≤ 1000 AO	3.48	35	2.02	8.89
Iron	ug/L as Fe	**51.85**	30	< 5	172	≤ 100 AO	91.7	35	40.9	591
Lead	ug/L as Pb	**0.215**	30	< 0.2	2.16	5 MAC	0.24	35	< 0.2	1.35
Lithium	ug/L as Li	**7.65**	30	6.3	8.6		7.3	19	6.4	8.2
Magnesium	mg/L as Mg	**3.025**	30	1.32	3.58	No Guideline Required	1.74	35	0.95	3.16
Manganese	ug/L as Mn	**27.2**	30	1.2	172	120 MAC / ≤ 20 AO	2.4	35	< 1	57.9
Molybdenum	ug/L as Mo	**< 1**	30	< 1	< 1		< 1	35	< 1	< 1
Nickel	ug/L as Ni	**< 1**	30	< 1	< 1		< 1	35	< 1	< 1
Potassium	mg/L as K	**0.843**	30	0.758	0.993		0.799	35	0.721	0.925
Selenium	ug/L as Se	**< 0.1**	30	< 0.1	0.16	50 MAC	< 0.1	35	< 0.1	< 0.1
Silicon	ug/L as Si	**2035**	30	1240	2960		2020	35	1190	3740
Silver	ug/L as Ag	**< 0.02**	30	< 0.02	< 0.02	No Guideline Required	< 0.02	35	< 0.02	< 0.02
Sodium	mg/L as Na	**21.55**	30	20	23.8	≤ 200 AO	21.9	35	19.9	24.1
Strontium	ug/L as Sr	**103**	30	88	119	7000 MAC	101	35	89.3	115
Sulphur	mg/L as S	**3.9**	30	3.2	4.7		4.4	35	3.3	5.7
Tin	ug/L as Sn	**< 5**	30	< 5	< 5		< 5	35	< 5	< 5
Titanium	ug/L as Ti	**< 5**	30	< 5	< 5		< 5	35	< 5	< 5
Thallium	ug/L as Th	**< 0.01**	30	< 0.01	0.013		< 0.01	35	< 0.01	< 0.01
Uranium	ug/L as U	**< 0.1**	30	< 0.1	0.13	20 MAC	< 0.1	35	< 0.1	< 0.1
Vanadium	ug/L as V	**< 5**	30	< 5	< 5		< 5	35	< 5	< 5
Zinc	ug/L as Zn	**11.95**	30	< 5	93.1	≤ 5000 AO	7.2	35	< 5	60.7
Zirconium	ug/L as Zn	**< 0.1**	30	< 0.1	< 0.1		< 0.1	35	< 0.1	< 0.5

2.621 - Highland/F nw o d Wat (SSI) e

Capital P ts - Financial Summary

Updat d @ 31/12/2025

Y a	P t# e	Capital Plan# e	Statu e	apital P t D s ipti n	T tal P t Budg t	Sp ndin		unding S u s		T tal Funding in Pla
						Exp nditu A tuals	R maining Sp nding	CRF	CWF	
2019	CE.677.750e	9-0	e e	ter Intake and Scree e	27,000	89,260 e	7,740 e	4,000	143,000 e	27,000
2019 e	CE.699.450	19-02e	Close	afe Work Procedure e	e 7,000	,441 e	,559 e	7,000		7,000
2021 e	CE.735.450e	1-0e	lose	ower generation equipment - Desig e	9,000	3,548 e	,452 e	9,000 e		9,000
2023 e	CE.677.4601 e	22-03 e	Close	afety Improvement for H&F WT e	0,000	1,402 e	8,598 e	e	40,000 e	0,000
2024	CE.677.460	4-0	e	pares, Chlorine & Coagulent Pump e	2,000	64 e	1,836 e	2,000		2,000
2024	CE.677.4603 e	24-04e e	Close e	afety chain replacement WT e	3,000	2,696e	04 e	13,000		3,000
2024	CE.677.450e	1-0e	e	ublic Engagement High/Fern Wate e	0,000	1 e	9,919 e	0,000		0,000
2024 e	CE.677.510 e	4-0 e	e e	eservoir 1. Repair roof top railin e	5,500 e	8,086 e	(2,586)* e	15,500 e		5,500
				T tal e	**33,500** e	**02,678** e	**30,822**	**50,500** e	**83,000** e	**33,500**

**T mporary d ficit at 2025 y ar end. $8,000 additional funding in 2026. ee*

CAPITAL REGIONAL DISTRICT

HIGHLANDS/FRANCOIS/WESTWOOD WATER
Statement of Operations (Unaudited)
For the Year Ended December 31, 2025

	2025	2024
Revenue		
Transfers from government	87,756	77,630
User Charges	435,886	412,749
Sale - Water	68,676	76,599
Other revenue from own sources:		
Interest earnings	377	567
Transfer from Operating Reserve Fund	10,623	20,000
Other revenue	4,074	1,756
Total Revenue	607,392	589,301
Expenses		
General government services	19,365	17,462
Contract for Services	30,122	14,103
CRD Labour and Operating costs	266,304	268,014
Debt Servicing Costs	34,405	34,431
Supplies	40,311	31,362
Other expenses	88,545	92,048
Total Expenses	479,052	457,420
Net revenue (expenses)	128,340	131,881
Transfers to own funds:		
Capital Reserve Fund	128,340	76,076
Operating Reserve Fund	-	55,805
Annual surplus/(deficit)	-	-
Accumulated surplus/(deficit), beginning of year	-	-
Accumulated surplus/(deficit), end of year $	-	-

CAPITAL REGIONAL DISTRICT

HIGHLAND WATER
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2025

	Capital Reserve	
	2025	**2024**
Beginning Balance	116,563	111,444
Transfer from Operating Budget	128,340	76,076
Transfer from Completed Capital Projects	18,724	43,356
Transfer to Capital Project	(13,770)	(117,500)
Interest Income	6,293	3,187
Ending Balance	256,150	116,563

	Operating Reserve	
	2025	**2024**
Beginning Balance	141,568	101,101
Transfer from Operating Budget	-	55,805
Transfer to Operating Budget	(10,623)	(20,000)
Interest Income	6,345	4,662
Ending Balance	137,290	141,568

CAPITAL R) I AL)STRICT

HI)HLA) WAT)R
Statement of erations (Unaudited
For the Year)nded)ecember 31, 2025)

	2025)	2024
Revenue		
Transfers from government)	8,544	31,726
Other revenue from own sources:		
Interest earnings)	59	116
MFA Debt Reserve Earning)	63	4,087
Total Revenue)	8,666	35,928
xpenses		
General government services)	23	27
Debt Servicing Costs)	13,825	30,834
Total Expenses)	13,848	30,861
et revenue (expenses	5,182)	5,068
Ann)al s)rpl $ (deficit	(5,182)	5,068
Accumulated surplus/(deficit), beginning of year)	5,240	172
Acc)mulated s)rpl $ (deficit , end of year $)	58	5,240

CAPITAL R) I AL)STRICT

F R)WO) WAT)R
Statement of erations (Unaudited
For the Year nded ecember 31, 2025)

	2025)	2024)
Revenue		
Transfers from government)	5,034	14,621
Other revenue from own sources:		
Interest earnings)	63	41
MFA Debt Reserve Earning)	2,160	1,653
Total Revenue)	7,257	16,315
xpenses		
General government services)	11	13
Debt Servicing Costs)	6,993	14,281
Total Expenses)	7,004	14,294
et revenue (expenses	53	2,021
Ann)al s)rpl $/(deficit	253	2,021
Accumulated surplus/(deficit), beginning of year)	2,091	70
Acc)mulated s)rpl $/(deficit)end of year $)	2,344	2,091