



Making a difference...together

**HIGHLAND / FERNWOOD WATER SERVICE COMMISSION  
HIGHLAND WATER SERVICE COMMISSION  
FERNWOOD WATER SERVICE COMMISSION**

**ANNUAL GENERAL MEETING**

Notice of Meeting on **Monday, June 11, 2018 at 1:00 PM**

Creekside Meeting Room, Suite 108 121 McPhillips Ave, Salt Spring Island, BC

Wayne McIntyre

Sharon Bywater

Eli Trory

Lorrie Hunt

Carol Newmeyer

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**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 2017 fiscal year.

**AGENDA**

- 1. Call to Order**
- 2. Approval of Agenda**
- 3. Adoption of Minutes of the 2016 Annual General Meeting held on November 28, 2017**
- 4. Chair's Report**
- 5. Annual Report for 2017 Fiscal Year**
- 6. Election of Officers**
- 7. New Business**
- 8. Adjournment**

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*To ensure quorum, advise Tracey Shaver 250 537 4448 if you cannot attend.*

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Making a difference...together

**Minutes of the 2016 Annual General Meeting of the Highland/Fernwood, Highland and Fernwood Local Water Service Commissions**  
**Held Tuesday November 28, 2017, in the Creekside Meeting Room, Suite 108- 121 McPhillips Ave, Salt Spring Island, BC**

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**DRAFT**

**Present:** **CRD Director:** Wayne McIntyre  
**Commission Members:** Eli Trory, Lorries Hunt, Sharon Bywater; Carol Newmeyer  
**Staff:** Karla Campbell, Senior Manager SSI Electoral Area; Dan Robson, Manager, Saanich Peninsula and Gulf Islands Operations; Peggy Dayton, Senior Financial Analyst; Dan Ovington, Manager Parks and Recreation; Tracey Shaver, Recording Secretary

**1. Call to Order**

Chair Hunt called the meeting to order at 10:00 am.

**2. Approval of Agenda**

**MOVED** by Commissioner Bywater, **SECONDED** by Commissioner Trory,  
That the combined Highland/Fernwood Water Service Commission 2016 Annual General agenda of November 28, 2017 be approved.

**CARRIED**

**3. Adoption of Minutes of the 2015 Annual General Meeting held on June 14, 2016.**

**MOVED** by Commissioner Trory, **SECONDED** by Commissioner Bywater,  
That the combined Highland/Fernwood Water Service Commission Minutes of 2015 Annual General Meeting be approved.

**CARRIED**

**4. Chair's Report**

Chair Hunt briefly reported:

- Year of the Leaks! 40% water loss
- Equipment failures and age of plant and service lines
- Perception that there was less rain in the fall
- Conservation efforts should continue
- Desperately need volunteers to participate on Commission

**5. Report**

**5.1 Annual Report for 2016 Fiscal Year**

Staff presented the various sections of the AGM report for 2016 Fiscal Year.

- Metered water revenue is up

- Unmetered water use is higher and the leaks are harder to find
- 41 % unaccounted for; in small systems the acceptable amount is generally 15 to 20%
- 6 repairs on leaks; additional attempts to detect leaks are being made at night when usage is low and by listening for sound vibrations at valves.
- SAMP to give direction on repairs or replacements needs
- Uncompleted capital projects brought forward to 2017

**6. Election of Officers**

Nominations were called for from the floor for volunteers. None being heard, it was advised that if there is not enough local participation from the service area the annual operating reports and budget decisions will be heard and decided on by the CRD Electoral Area Services Committee.

Carol Newmeyer and Eli Trory reluctantly agreed to extend their terms as commission members.

**7. New Business**

Emergency notification system being worked on.

- Residents sign up to receive information via email, text or phone.
- Specific messages related to areas in the EASC

**8. Adjournment**

**MOVED** By Commissioner Bywater, **SECONDED** by Commissioner Trory,  
That the meeting adjourn at 11:04 am.

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**CHAIR**

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**SENIOR MANAGER**



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**HIGHLAND/FERNWOOD WATER SERVICE  
HIGHLAND WATER SERVICE and FERNWOOD WATER SERVICE  
2017 ANNUAL REPORT  
June 11, 2018**

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## **Introduction**

This report provides a summary of the Highland/Fernwood Water Service for 2017. 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.

The AGM content in this report is for the combined Highland and Fernwood Water Utility. This utility has been operating as a combined entity since 2012; however, a joint commission has not been established at this time. A bylaw to formally establish the commission is in progress, but is not complete. Therefore, all discussions and motions are assumed to be independently supported by the Fernwood Water Service Commission and the Highland Water and Sewer Service Commission unless specifically indicated otherwise. For the purpose of this report, the term Commission refers to the Fernwood Water Service Commission and the Highland Water and Sewer Service Commission working together as a single commission.

## **Service Description**

The Highland/Fernwood Water Service is a semi-rural residential community located on Salt Spring Island and includes servicing Fernwood Elementary School.

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.

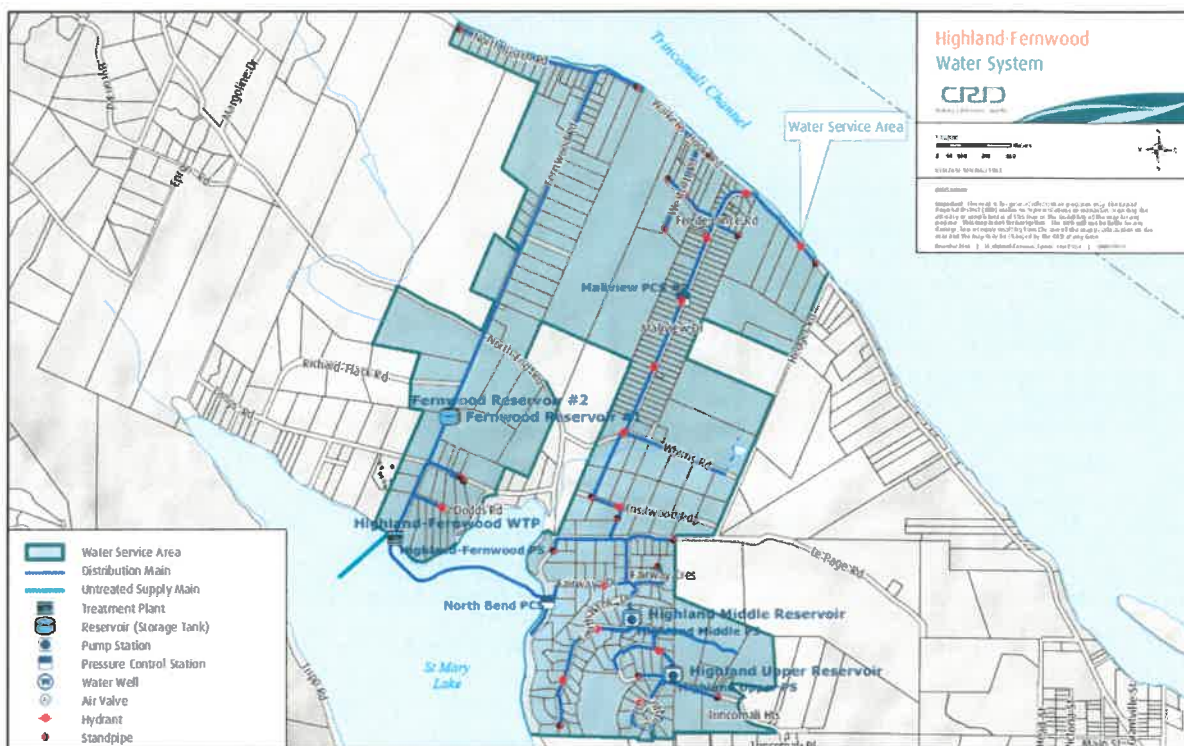
The Fernwood service was created in the 1970's by a private developer and was converted to the Fernwood Improvement Water District in 1984. It then became a CRD service in 1989.

Water service to Highland and Maliview are administered by the Highland Water and Sewer Local Services Commission and water service to Fernwood is administered by the Fernwood Water Local Service Commission. The intent is to establish a single commission to administer the merged service, but this has not been completed at the end of 2017 and is now scheduled to be done in 2018.

Previously, the two water services operated on separate treatment and distribution systems both drawing water from St. Mary Lake. As of mid-September 2012, both service areas are supplied through a single water treatment plant and interconnected distribution systems. A new operating budget was established in 2013 to accommodate the single treatment plant and combined distribution systems.

The Highland/Fernwood Water Service (Figure 1) is comprised of 333 parcels of land with 319 of those parcels connected to the service.

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<sup>3</sup> per year and store up to 30,800 m<sup>3</sup>. St. Mary Lake is subject to seasonal water quality changes and is affected by periodic algae blooms.



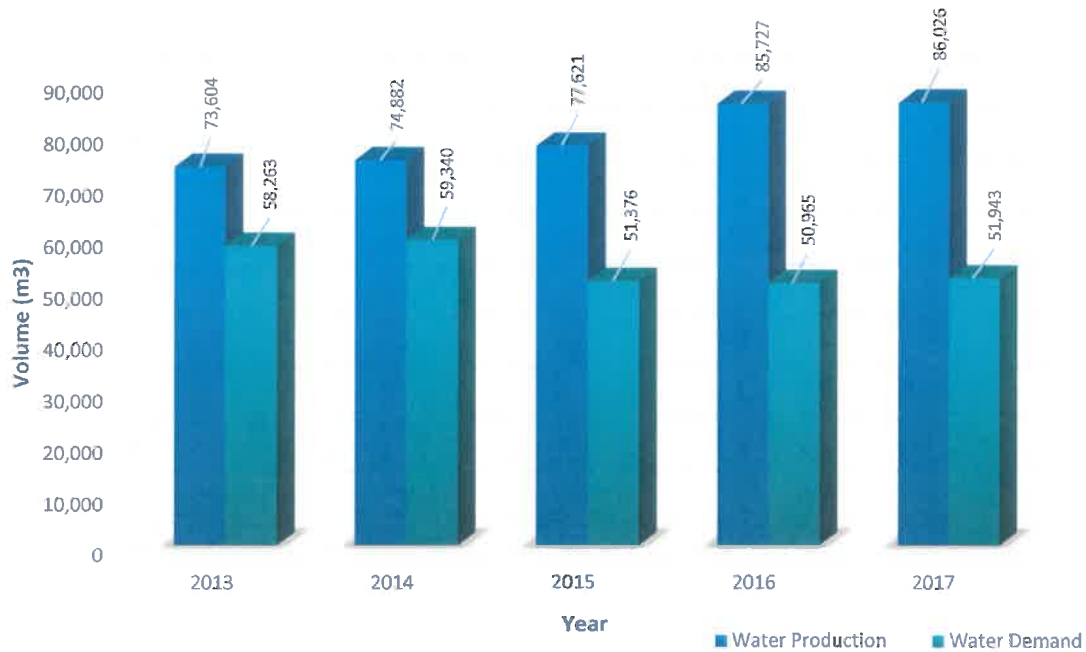
**Figure 1: Highland/Fernwood Water Service**

The Highland/Fernwood 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 l/gpm);
- one raw main water pump station on Maycock Road, adjacent to the lake. (flow rate of two pumps running is 4.6 l/sec (60 l/gpm);
- approximately 12,000 m of water distribution pipe;
- 4 water reservoirs – one 180 m<sup>3</sup> (40,000 lg) on the Highland system, one 91 m<sup>3</sup> (20,000 lg) on the Highland system, one 45 m<sup>3</sup> (10,000 lg) on the Fernwood system and, one 91 m<sup>3</sup> (20,000 lg) on the Fernwood system;
- 2 water system booster pumps – on Highland system, 1 at each 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.

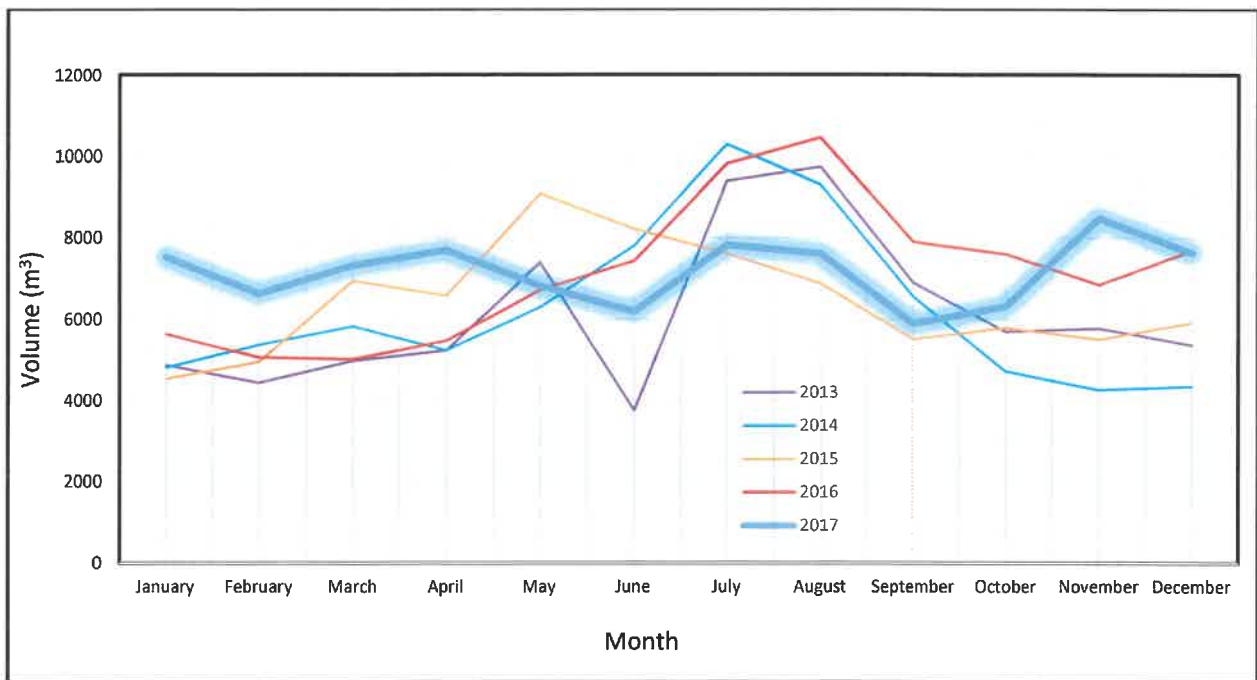
### Water Production and Demand

Referring to Figure 2, 80,026 cubic meters (m<sup>3</sup>) of water was extracted (water production) from St. Marys Lake in 2017; a less than 1% increase from the previous year and is 2% more than the five year average. Water demand (customer water billing) for the service totalled 51,943 m<sup>3</sup> of water; a 2% increase from the previous year and a 6% decrease from the four year average.



**Figure 2: Highland/Fernwood 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 is greatest during the summer months. However, the 2017 water production data information does not depict this type of trending. This is primarily the result of significant water system leaks that influence and skew monthly production data.



**Figure 3: Highlands Water Service Monthly Water Production**

The Highland/Fernwood Water System is fully metered, and water meters are read quarterly. Water meter data enables water production and consumption to be compared in order 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 40%. Water loss is estimated to be approximately 35% which is considered high for a small water system such as Highland/Fernwood.

## Water Quality

In 2017, 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 Canadian Drinking Water Quality Guideline (GCDWQ) limit for turbidity of 1 nephelometric turbidity unit (NTU) was exceeded on a number of occasions throughout the year at a few sampling stations that are characterized as low flow locations. A regular distribution pipe flushing program should address this issue. Staff observed significant algal events, including cyanobacteria blooms, in St. Mary Lake throughout the entire year. During these events, the Highland/Fernwood water treatment plant has proven its ability to remove most of the organic matter/compounds as well as cyanotoxins supplied with the raw lake water to the plant. The treatment process was successful in reducing the concentration of total organic carbon (TOC) in the raw water by approximately 50% which resulted in very low concentrations of harmful disinfection by-products in the treated water throughout the system.

The data below provides a summary of the water quality characteristics in 2017:

### Raw Water:

- The raw water exhibited typically low concentrations of total coliform and *E. coli* bacteria throughout the cold weather periods and higher spikes during the summer.
- *Cryptosporidium* and *Giardia* parasites were detected in very low concentrations in August.
- The analyses of raw water samples indicated low concentrations of iron and manganese.
- The raw water was slightly hard (median hardness 39.1 mg/L CaCO<sub>3</sub>).
- The raw water turbidity (cloudiness) was near 1 NTU during most months but well over 1 NTU between June and September. Highest raw water turbidity was registered in August with 4.04 NTU.
- A mean annual total organic carbon concentration of 5.00 mg/L confirms the mesotrophic (semi-productive) to eutrophic (productive) status of St. Mary Lake.
- A sustained cyanobacteria bloom in St Mary Lake regularly produced potentially harmful cyanotoxins which were detected in the raw water entering the treatment plant. Since September 2017, no raw water sample at the Highland/Fernwood Treatment Plant tested positive for cyanotoxins despite the continued cyanobacteria bloom in the lake.

### Treated Water:

- The treated water was safe to drink; no indicator bacteria were detected in any sample throughout the year.
- The treatment plant was successful in removing all cyanotoxins from the water. No treated water sample tested positive for these toxins.
- 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, Standpipe #19 in the Highland Distribution System exceeded 1 NTU almost every month and exceeded 3 NTU on several occasions. The Fernwood Distribution System sampling station at the end of North Beach Road

exceeded 1 NTU consistently between February and July. Regular main line flushing could address these localized exceedances.

- The levels of disinfection by-products (THM) across the Fernwood and the Highland Distribution System were well below the 100 µg/L limit in the GCDWQ. Haloacetic acids (HAA) were not tested in 2017 due to a history of concentrations consistently well below the GCDWQ limit of 80 µg/L.
- The treated water TOC in both distribution systems was lower than in previous years, ranging from 2.04 to 2.40 mg/L in the Fernwood Distribution System, and 1.75 to 2.50 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.
- Elevated iron and/or manganese concentrations, which can lead to water discoloration, have been periodically an issue at the far ends of both distribution systems where water age is high and low flow velocities facilitate higher sedimentation rates. Regular main line flushing could address these localized exceedances.

Water Quality data collected from these two distribution systems can be reviewed on the following CRD websites:

<https://www.crd.bc.ca/about/data/drinking-water-quality-reports/salt-spring-island-water-quality-reports/highland-water-quality-reports>.

<https://www.crd.bc.ca/about/data/drinking-water-quality-reports/salt-spring-island-water-quality-reports/fernwood-water-quality-reports>.

## Operational Highlights

CRD's Integrated Water Services, Saanich Peninsula and Gulf Island Operations, is responsible for the day to day operations of the water system. Salt Spring Island based operations staff perform regular weekly routine operational visits to several locations including the water treatment facility, reservoirs and various water distribution system sites to ensure the water system is functioning properly. Additional support is provided by Peninsula Operations staff including the electrical and mechanical maintenance groups as required. The list below highlights some of the operations during 2017:

- Emergency water distribution system leak detection response.
- Water system leak repair Southbank Road.
- Water system leak repair Fairway Drive.
- Water system leak investigation North End Rd.
- Emergency replacement of water treatment facility water level transducer electronic equipment.
- Replacement of automated electrical actuated valve water processing equipment.
- Troubleshooting and repairs to the air saturator water processing equipment.

## CAPITAL IMPROVEMENTS

### Highland/Fernwood Water Capital

There was one capital project planned for 2017:

1. Undertake Intake Assessment and Design – (\$20,000 allocated, \$0 spent). Only minor overview work was completed on this project due to limited staff resources and the fact that



the actual construction isn't anticipated until 2019 when funds are expected to be available. The work will be carried forward to 2018.

### Highland Water Capital

There were four capital projects planned for 2017:

2. Infrastructure Upgrades - (\$173,623 allocated). These upgrades were divided into four projects:
  - 2.1. Highlands Middle Reservoir repairs (\$80,000 allocated \$486 spent): Work did not advance in 2017.
  - 2.2. Demolition of abandoned Highlands Treatment Plant (\$35,000 allocated \$1,840 spent): Some advancement of this work completed 2017.
  - 2.3. Failed Blow-offs (standpipe) repairs (\$45,000 allocated \$33,626 spent): Work is complete.
  - 2.4. Failing Water Service Repairs (\$13,623 allocated \$11,546 spent): Water services are being repaired/replaced as they fail. Project budget is almost spent.

All uncompleted projects have been brought forward to 2018.

### Fernwood Water Capital

There were no capital projects planned for 2017.

## 2017 FINANCIAL REPORT

Please refer to the attached [\*Statement of Operations\*](#). Revenue includes parcel taxes (Transfers from Government), fixed user fees (User Charges), consumption based revenue (*Water Sales*), interest on savings (Interest Earnings), a transfer from the maintenance reserve account, and miscellaneous revenue such as late payment charges (Other Revenue).

Expenses includes 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 includes 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 includes all other costs to administer and operate the water system, including insurance, supplies, water testing and electricity.

The difference between Revenue and Expenses is reported as Net Revenue (expenses). Any transfers to or from capital or reserve accounts 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) that is carried forward to the following year.

### Highland/Fernwood Water

2017 User Fee charges were \$814.94 per Single Family Equivalent (SFE) and 2017 Parcel Tax charges were \$173.84 per Taxable Parcel.

The balances in the Highland / Fernwood Water service capital funds and reserve accounts at December 31, 2017 were:

Description	Balance at end of 2017
Operating Reserve Fund	\$31,425
Capital Reserve Fund	\$97,553

**Highland Water**

2017 Parcel Tax charges were \$153.88 per Taxable Parcel.

The balances in the Highland Water service capital funds at December 31, 2017 were:

Description	Balance at end of 2017
Funds remaining to spend on projects in progress (WLA3580)	\$126,300
Funds remaining to spend on projects in progress (WSV185099)	\$18,990

**Fernwood Water**

2017 Parcel Tax charges were \$256.46 per Taxable Parcel.

The balances in the Fernwood Water service capital fund at December 31, 2017 were:

Description	Balance at end of 2017
Funds remaining to spend on projects in progress (WSV185147)	\$5,326

**Water System Problems - Who to Call:**

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

<b>CRD water system emergency call centre:</b>	<b>1-855-822-4426 (toll free)</b>
<b>CRD water system emergency call centre:</b>	<b>1-250-474-9630 (toll)</b>
<b>CRD local operator (Ganges Wastewater Treatment Plant):</b>	<b>250-537-4314</b>
<b>CRD water system general enquiries (toll free):</b>	<b>1-800-663-4425</b>

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

Submitted by:	Matt McCrank, M.Sc., P.Eng., Senior Manager, Infrastructure Operations
	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
	Rianna Lachance, BCom, CPA, CA, Senior Manager Financial Services
	Karla Campbell, Senior Manager, Salt Spring Island Electoral Area

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Attachment: Statement of Operations

## CAPITAL REGIONAL DISTRICT

### HIGHLAND / FERNWOOD WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
<b>Revenue</b>		
Transfers from government	55,000	55,000
User Charges	260,787	223,462
Sale - Water	62,344	62,593
Other revenue from own sources:		
Interest earnings	32	1
Other revenue	1,064	3,687
Transfer from Operating Reserve Account		
<b>Total revenue</b>	<b>379,226</b>	<b>344,743</b>
<b>Expenses</b>		
General government services	15,410	14,414
Contract for Services	29,539	22,416
CRD Labour and Operating costs	150,359	171,465
Debt Servicing Costs	41,337	41,382
Other expenses	77,047	91,451
<b>Total expenses</b>	<b>313,692</b>	<b>341,128</b>
<b>Net revenue (expenses)</b>	<b>65,534</b>	<b>3,615</b>
Transfers to own funds:		
Capital Reserve Fund	8,810	-
Operating Reserve Fund	24,028	2,500
<b>Annual surplus (deficit)</b>	<b>32,696</b>	<b>1,115</b>
Accumulated deficit, beginning of year	(32,696)	(33,811)
<b>Accumulated deficit, end of year</b>	<b>\$ (0)</b>	<b>(32,696)</b>

## CAPITAL REGIONAL DISTRICT

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### HIGHLAND / FERNWOOD WATER Statement of Reserve Balances (Unaudited) For the Year Ended December 31, 2017

	<b>Capital Reserve</b>	
	<b>2017</b>	<b>2016</b>
<b>Beginning Balance</b>	99,036	96,710
Transfer from Operating Budget	8,810	-
Transfers from completed capital projects	975	-
Interest Income	3,348	4,326
Transfer to Capital Project	(14,616)	(2,000)
<b>Ending Balance</b>	<u>97,553</u>	<u>99,036</u>

	<b>Operating Reserve</b>	
	<b>2017</b>	<b>2016</b>
<b>Beginning Balance</b>	6,983	4,395
Transfer from/(to) Operating Budget	24,028	2,500
Interest Income	414	87
<b>Ending Balance</b>	<u>31,425</u>	<u>6,983</u>

## CAPITAL REGIONAL DISTRICT

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### HIGHLAND WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
<b>Revenue</b>		
Transfers from government	37,137	37,114
Other revenue from own sources:		
Interest earnings	51	42
Other revenue	96	133
Total revenue	<u>37,284</u>	<u>37,289</u>
<b>Expenses</b>		
General government services	1,720	1,700
Debt Servicing Costs	<u>35,554</u>	<u>35,591</u>
Total expenses	<u>37,274</u>	<u>37,291</u>
<b>Net revenue (expenses)</b>	10	(2)
<b>Annual surplus (deficit)</b>	10	(2)
Accumulated surplus (deficit), beginning of year	44	46
<b>Accumulated surplus (deficit), end of year</b>	<u>\$ 54</u>	<u>44</u>

## CAPITAL REGIONAL DISTRICT

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### FERNWOOD WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
<b>Revenue</b>		
Transfers from government	19,250	19,227
Other revenue from own sources:		
Interest earnings	24	20
Other revenue	47	65
Total revenue	<u>19,321</u>	<u>19,312</u>
<b>Expenses</b>		
General government services	1,620	1,600
Debt Servicing Costs	17,696	17,714
Total expenses	<u>19,316</u>	<u>19,314</u>
<b>Net revenue (expenses)</b>	5	(2)
<b>Annual surplus (deficit)</b>	5	(2)
Accumulated surplus, beginning of year	21	23
<b>Accumulated surplus, end of year</b>	<u>\$ 26</u>	<u>21</u>