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

ANNUAL GENERAL MEETING
Notice of Meeting on **Tuesday, November 28, 2017 at 10:00 AM**
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 2016 fiscal year.

AGENDA

1. **Call to Order**
2. **Approval of Agenda**
3. **Adoption of Minutes of the 2015 Annual General Meeting held on June 14, 2016**
4. **Chair's Report**
5. **Annual Report for 2016 Fiscal Year**
6. **Election of Officers**
7. **New Business**
8. **Adjournment**

To ensure quorum, advise Tracey Shaver 250 537 4448 if you cannot attend.
EXEC-1295039085-1441

Making a difference...together

Minutes of the Annual General Meeting of a combined Highland / Fernwood Water Service Commission, Highland Water Service Commission, Fernwood Water Service Commission, Held June 14, 2016 Portlock Park Meeting Room, 145 Vesuvius Bay Road Salt Spring Island, BC

DRAFT

Present:

Director: Wayne McIntyre
Combined Highland and Fernwood Water Utility: Lorrie Hunt (Chair, Highland Water) Sharon Bywater (Chair, Maliview Sewer), Carol Newmeyer, Eli Trory
Staff: Karla Campbell, Senior Manager SSI Electoral Area; Keith Wahlstrom, Manager, Engineering SSI Electoral Area; Matthew McCrank, Senior Manager, Infrastructure Operations; Dan Robson, Manager, Saanich Peninsula and Gulf Islands Operations, Peggy Dayton, Senior Financial Analyst; Kyu-Chang Jo, Financial Analyst 2; Tracey Shaver, Recording Secretary

1. **Call to Order**
Chair Hunt called the meeting to order at 1:05 pm.

2. **Approval of Agenda**

MOVED by Commissioner Bywater, **SECONDED** by Commissioner Trory,
That the Combined Highland/Fernwood Water Service Commission Annual General Meeting agenda of June 14, 2016 be approved.

CARRIED

3. **Adoption of Minutes of the 2014 (Fiscal Year) Annual General Meeting held September 15, 2015**

MOVED by Commissioner Bywater, **SECONDED** by Commissioner Trory,
That the combined Highland/Fernwood Water and Sewer (Maliview) Service Commission, Annual General Meeting minutes held on September 15, 2015 be approved.

CARRIED

4. **Chair's Report**
Chair Hunt reported that conservation efforts over the past year have made a reduction of 25%. Encourages a simple and clear message be used going forward. Difficulty continues with getting area residents to participate on the commission.

5. **Annual Operations Report for 2015 Fiscal Year**

Staff reviewed a report which was prepared considering the water services as combined and separately. Topics covered in the report included water quality, operations, capital improvements and financial outcomes for the fiscal year of 2015.

6. Election of Officers

Commissioner Newmeyer nominated both Commissioner Bywater and Commissioner Hunt for an additional two year term which was seconded by Commissioner Trory. Commissioners Bywater and Hunt agreed to the nomination and hearing no further nominations were elected by acclimation.

Director McIntyre thanked the Commissioners for their long standing efforts as volunteers for the 333 taxable folios of this combined service area.

7. New Business

No new business reported

8. Adjournment

MOVED by Commissioner Bywater, **SECONDED** by Commissioner Trory,
The Annual General Meeting of the combined Highland/Fernwood Water Service Commissions be adjourned at 2:00 pm.

CARRIED

CHAIR Highland/Fernwood Water

CHAIR Highland Water

CHAIR Fernwood Water

SENIOR MANAGER

Making a difference...together

HIGHLAND/FERNWOOD WATER SERVICE
HIGHLAND WATER SERVICE and FERNWOOD WATER SERVICE
2016 ANNUAL REPORT
Tuesday, November 28, 2017

Introduction

This report provides a summary of the Highland/Fernwood Water Service for 2016. 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 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 2016 and is now scheduled to be done in 2017.

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.

The service obtains its drinking water from St. Mary Lake, a relatively small lake that 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.

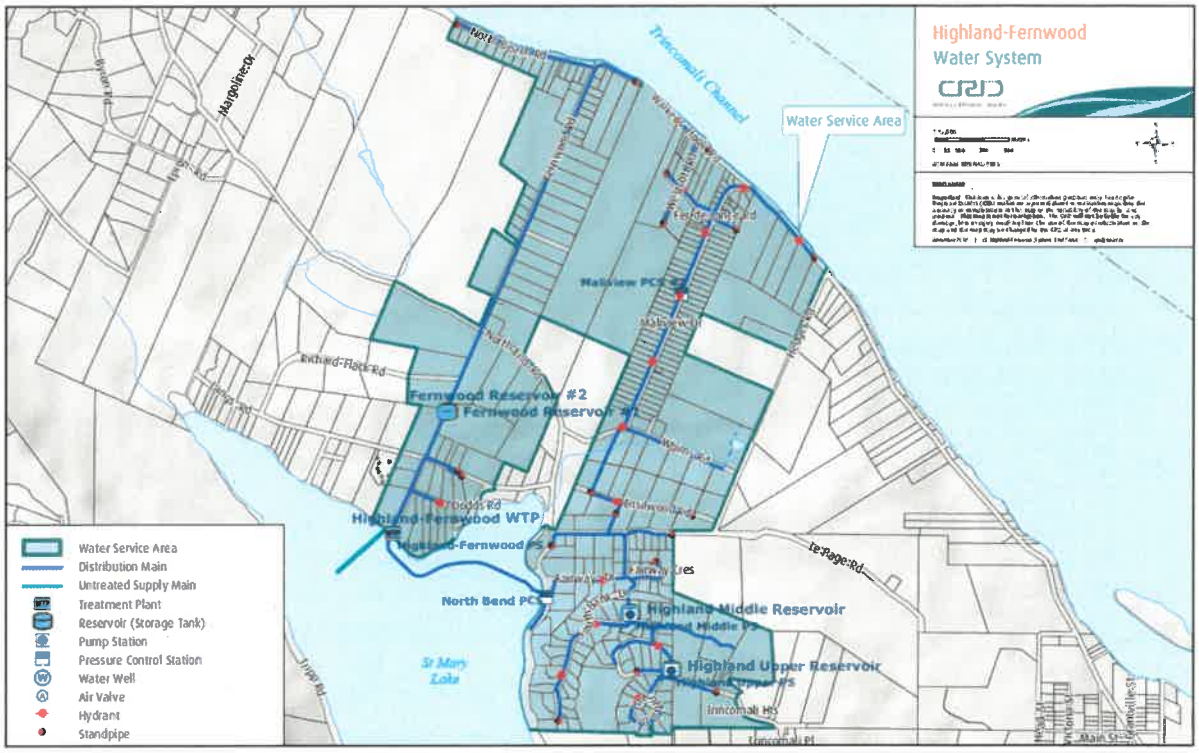

Figure 1: Highland/Fernwood Water Service

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 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 m^3 (40,000 lg) on the Highland system, one 91 m^3 (20,000 lg) on the Highland system, one 45 m^3 (10,000 lg) on the Fernwood system and, one 91 m^3 (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

The Highland/Fernwood Treatment Plant has been operating for over 4 years with the first full year of water production data being 2013.

Annual water production since 2011 is shown in Figure 2. A total of 85,727 m^3 of water was abstracted from St. Mary Lake in 2016. This is 10.4% more than 2015 however, it is suspected

several leaks on the system contributed dramatically to the overall increase.

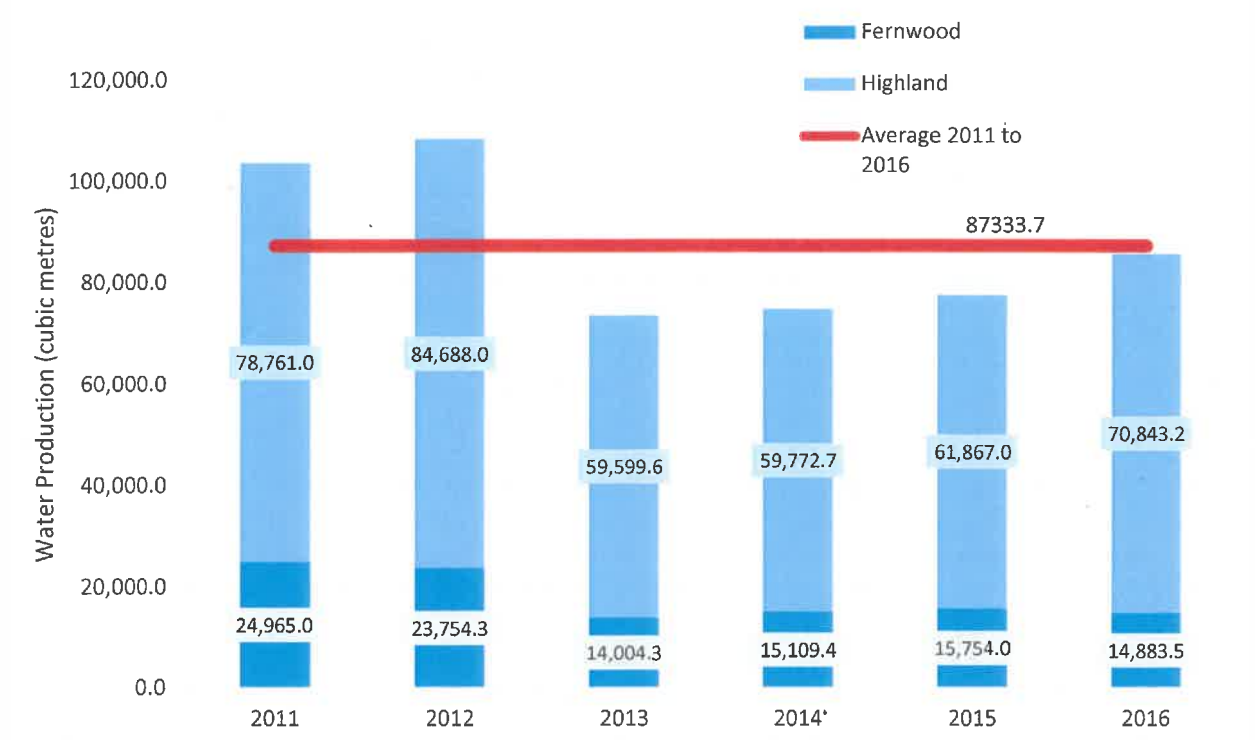

Figure 2: Total Annual Water Production 2011 to 2016

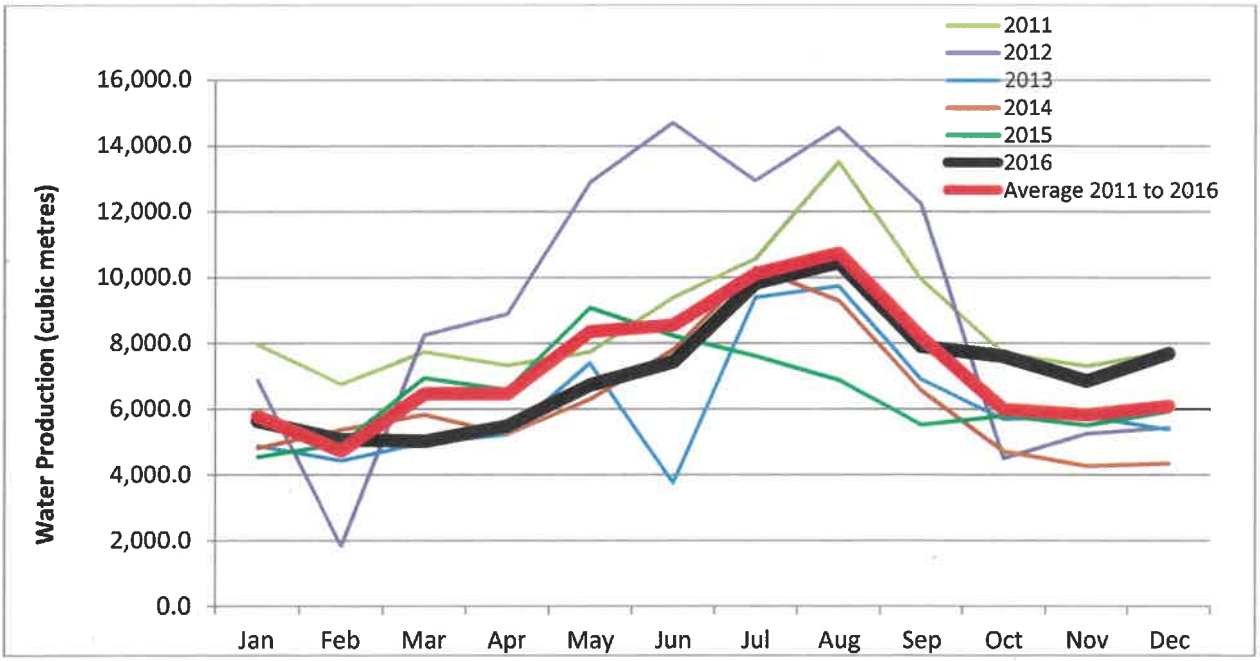

Figure 3: Water Production by Month 2011 to 2016

The Highland/Fernwood Water System is fully metered, and water meters are read every three months. 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 sold (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. Table 1 summarizes the data for the last 4 years.

The volume of water sold was essentially the same from 2015 (51,376 m3) to 2016 (50,965 m3) indicating the request to conserve water has been effective for two consecutive years and that the increase was a result of leaks within the system. The 2015 consumer water use decreased as a result of the drought experienced and the direct appeal to customers to use less water.

Table 1: Non-Revenue Water (Water Produced Versus Water Sold)

Year	2013	2014	2015	2016
Produced (m^3)	73603.9	74882.1	77621.0	85726.7
Metered (m^3)	58263.0	59340.0	51376.0	50965.0
Unmetered (m^3)	15340.9	15542.1	26245.0	34761.7
Unaccounted	20.8%	20.8%	33.8%	40.5%

The amount of non-revenue water is considered high, likely due to leaks within the system as well as the on-going process water requirements for the treatment plant.

The average single-family residence in the Highland/Fernwood Water System used 161 m^3 in 2016, essentially unchanged from the 162 m^3 in 2015.

Monitoring of future years' flows will help determine if the water users are, as with other water service areas, seeing a reduction in water use as a result of conservation efforts and declining indoor water use resulting from the use of low flow fixtures and high efficiency appliances.

An average water demand by residential service connection for water service areas operated by the CRD on Salt Spring Island is shown in **Figure 4.**

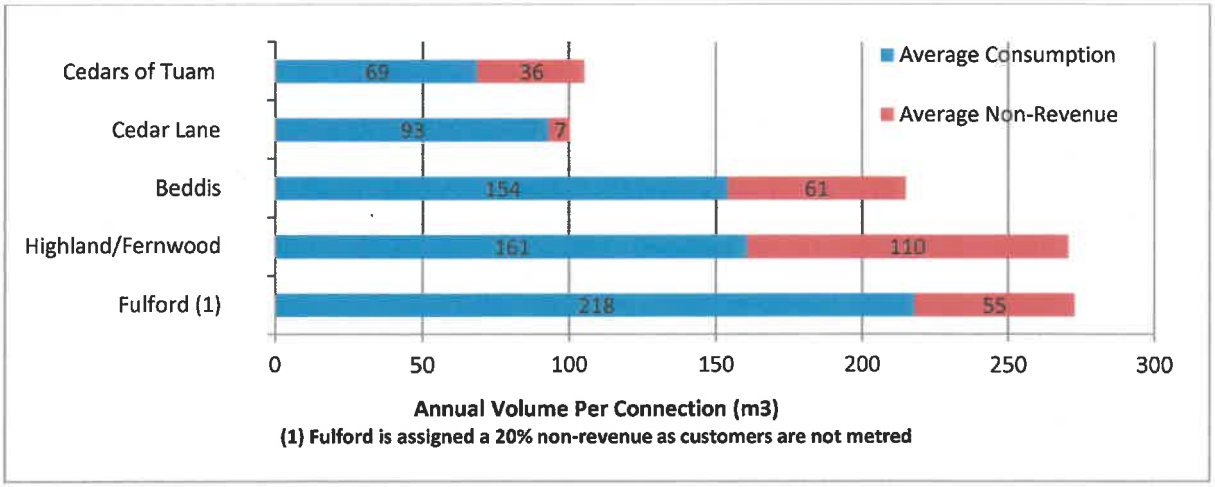

Figure 4: 2016 Average Annual Consumption and Non-Revenue Volumes Per Customer/Connection - CRD Salt Spring Water Systems

Water Quality

In 2016, 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 fall and winter. 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 should be further refined and fine-tuned to eliminate periods of elevated total organic carbon (TOC) in the treated water which can lead to disinfection by-product exceedances, especially during the warm summer season.

The data below provides a summary of the water quality characteristics in 2016:

- 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.
- No *Cryptosporidium* parasites were detected. *Giardia* was detected in very low concentrations.
- The raw water samples indicated low concentrations of iron and manganese during two of the three sampling periods, however elevated manganese concentrations were registered after the fall turnover of St. Mary Lake. If untreated, elevated iron and manganese concentrations can lead to discolouration of the drinking water.
- The raw water was slightly hard (median hardness 41.6 mg/L $CaCO_3$).
- The raw water turbidity (cloudiness) was near 1 NTU during the winter months but consistently over 1 NTU during the rest of the year. Highest raw water turbidity was registered in June with 19 NTU.
- A mean annual total organic carbon concentration of 4.62 mg/L confirms the mesotrophic (semi-productive) to eutrophic (productive) status of St. Mary Lake.
- The treated water was safe to drink.
- The treated water turbidity was typically well below the turbidity limit of 1.0 NTU. Standpipe #19 in the Highland Distribution System exceeded 1 NTU almost every month and even exceeded 5 NTU during January and March. The Fernwood Distribution System sampling station at the end of North Beach Road exceeded 1 NTU between January and May. Regular main line flushing could address these localized exceedances.
- The Fernwood Distribution System sampling station at the end of North Beach Road also registered one TC positive on April 19, 2016 which was not confirmed by an immediate resample.
- The levels of disinfection by-products (THM and HAA) across the Fernwood Distribution System were well below the 100 µg/L and 80 µg/L limits in the GCDWQ.
- The mean annual levels of disinfection by-products (THM and HAA) across the Highland Distribution System were well below the limits in the GCDWQ. However on May 12 the THM concentrations at Standpipe #8 exceeded the GCDWQ limit (121 µg/L). Occasionally elevated levels of total organic carbon (TOC) in the treated water (> 2 mg/L) in combination with a high water age in low flow locations can cause spikes in disinfection by-product concentrations.
- The treated water TOC was moderate to elevated in both distribution systems, ranging from 1.84 to 2.81 mg/L in the Fernwood Distribution System to 1.62 to 3.43 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.

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.

OPERATIONS

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 following table highlights some of the key maintenance tasks performed during this period.

Table 3-signficant operational activities

TASK	NOTES
Service line leak repairs	Water service line leak repairs performed at: • 234 Trincomali Heights • 238 Trincomali Heights • 214 Maliview Road • 131 Fer de Lance • 260 South Bank Drive • 145 Fairway Drive
Raw water intake inspection	This task is part of the annual preventative maintenance program to ensure the intake is free and clear of debris to ensure raw water flows are not restricted.
Exhaust fan replacement	The ventilation fan in the water treatment facility chlorine room failed and required replacement. This equipment is necessary for occupational health and safety reasons when operations safe enter the space to perform maintenance activities.
Air saturator control modifications	The air saturator equipment, an important treatment component at the water treatment plant, required significant operational control adjustments and programing modifications. As a result, ongoing emergency call out response was eliminated.
Emergency raw water intake installation	Treatment plant raw water flows were exceeding the capacity of the existing raw water intake. In order to provide some additional flow to keep up with water demand, a temporary higher capacity raw water intake line was installed.

TASK	NOTES
Valve and electric actuator replacement	Automatic control valves at the water treatment plant continued to cause water treatment processing issues again in 2016. It was concluded that previous repairs did not fully resolve the ongoing problems with this equipment. It was concluded that these valves should be replaced in order to reduce costly emergency response for the service.
Pump repair	Highlands Middle Reservoir pump repairs. Mechanical seal needed to be replacement.

CAPITAL IMPROVEMENTS

Highland/Fernwood Water Capital

There were two capital projects planned for 2016:

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 that the actual construction isn't anticipated until 2019 when funds are expected to be available. The work will be considered in 2017. No additional work was completed on developing the technical portion of the SAM. This project was brought forward to 2017.

2. Safety Equipment ($2,000 allocated, $2,102 spent). Work included purchasing equipment and completion installations so potassium permanganate can be added to the water to reduce precipitate in the system. The project is complete.

Highland Water Capital

There was one capital project planned for 2016:

3. Infrastructure Upgrades- ($173,623 allocated, $42,280 spent). These upgrades were divided into four projects – middle reservoir repair, demolition of old treatment plant, failed blow-off repairs, and failing water service repairs. The replacement of the failed blow-offs were mostly completed and several failing water services were replaced. Repair of the middle reservoir is being reviewed as the costs have become quite high and alternate solutions are being pursued. The demolition of the old treatment plant was not initiated. All uncompleted projects have been brought forward to 2017.

Fernwood Water Capital

There were no capital projects planned for 2016.

2016 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

2016 User Fee charges were $699.94 per Single Family Equivalent (SFE) and 2016 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, 2016 were:

Description	Balance at end of 2016
Maintenance Reserve Account	$6,983
Capital Reserve Fund (1088 102156)	$99,036
Funds remaining to spend on projects in progress (WLA3754)	$964

Highland Water

2016 Parcel Tax charges were $153.79 per Taxable Parcel.

The balances in the Highland Water service capital funds at December 31, 2016 were:

Description	Balance at end of 2016
Funds remaining to spend on projects in progress (WLA3580)	$131,517
Funds remaining to spend on projects in progress (WSV185099)	$18,990

Fernwood Water
2016 Parcel Tax charges were $256.16 per Taxable Parcel.

The balances in the Fernwood Water service capital fund at December 31, 2016 were:

Description	Balance at end of 2016
Funds remaining to spend on projects in progress (WSV185147)	$5,254

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)**
CRD water system emergency call centre: **1-250-474-9630 (toll)**
CRD local operator (Ganges Wastewater Treatment Plant): **250-537-4314**
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.

The toll free number for reporting emergencies was piloted in 2016. Its use was monitored and evaluated during the year and it has been decided to continue using it. Periodic reviews will be undertaken, but there is presently no plan to terminate its use.

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

KW/ts

CAPITAL REGIONAL DISTRICT

HIGHLAND / FERNWOOD WATER
Statement of Operations (Unaudited)
For the Year Ended December 31, 2016

	2016	2015
Revenue		
Transfers from government	55,000	55,000
User Charges	223,462	202,932
Sale - Water	62,593	53,283
Other revenue from own sources:		
Interest earnings	1	
Other revenue	3,687	5,887
Transfer from Operating Reserve Account		21,300
Total revenue	344,743	338,402
Expenses		
General government services	14,414	13,450
Contract for Services	22,416	15,697
CRD Labour and Operating costs	171,465	176,329
Debt Servicing Costs	41,382	41,365
Other expenses	91,451	72,831
Total expenses	341,128	319,673
Net revenue (expenses)	3,615	18,729
Transfers to own funds:		
Capital Reserve Fund	-	-
Operating Reserve Account	2,500	11,720
Annual surplus (deficit)	1,115	7,009
Accumulated deficit, beginning of year	(33,811)	(40,820)
Accumulated deficit, end of year	$ (32,696)	(33,811)

CAPITAL REGIONAL DISTRICT

HIGHLAND / FERNWOOD WATER
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2016

	Capital Reserve 2016	2015
Beginning Balance	96,710	39,112
Transfer from Operating Budget	-	-
Transfers from completed capital projects	-	74,067
Interest Income	4,326	4,831
Transfer to Capital Project	(2,000)	(21,300)
Ending Balance	99,036	96,710

	Operating Reserve 2016	2015
Beginning Balance	7,069	-
Transfer from/(to) Operating Budget	(87)	7,069
Interest Income	87	-
Ending Balance	7,069	7,069

CAPITAL REGIONAL DISTRICT

HIGHLAND WATER
Statement of Operations (Unaudited)
For the Year Ended December 31, 2016

	2016	2015
Revenue		
Transfers from government	37,114	37,058
Other revenue from own sources:		
Interest earnings	42	42
Other revenue	133	119
Total revenue	37,289	37,219
Expenses		
General government services	1,700	1,700
Debt Servicing Costs	35,591	35,578
Total expenses	37,291	37,278
Net revenue (expenses)	(2)	(59)
Annual surplus (deficit)	(2)	(59)
Accumulated surplus (deficit), beginning of year	46	(205)
Accumulated surplus (deficit), end of year	$ 44	(263)

CAPITAL REGIONAL DISTRICT

FERNWOOD WATER
Statement of Operations (Unaudited)
For the Year Ended December 31, 2016

	2016	2015
Revenue		
Transfers from government	19,227	18,958
Other revenue from own sources:		
Interest earnings	20	20
Other revenue	65	58
Total revenue	19,312	19,036
Expenses		
General government services	1,600	1,600
Debt Servicing Costs	17,714	17,707
Total expenses	19,314	19,307
Net revenue (expenses)	(2)	(271)
Annual surplus (deficit)	(2)	(271)
Accumulated surplus, beginning of year	23	294
Accumulated surplus, end of year	$ 21	23