

Port Renfrew Utility System

2017 Annual Report

CRD | **Drinking Water**

Introduction

This report provides a summary of the Port Renfrew Utility Services for the year 2017. This report includes a description of services as well as a summary of the water, sewer, street lighting, and refuse disposal services in terms of operations, maintenance, capital upgrades, and finances for each service.

Port Renfrew Utility Services Committee

The Port Renfrew Utility Services Committee (PRUSC) has authority delegated by the Capital Regional District (CRD) Board for provision of water, sewer, street lighting and refuse disposal for the Port Renfrew community. Refuse disposal service is also provided to the Pacheedaht First Nation under a service delivery agreement. This Annual Report relates to the services provided under the authority of the PRUSC.

WATER SERVICE

Service Description

The community of Port Renfrew is comprised of rural residential as well as commercial and institutional development and is located in the Juan de Fuca Electoral Area of the CRD. The Port Renfrew water service was originally owned by a forestry company and was transferred to the CRD in 1989 to service the Beach Camp area. In 2002, the water service area was extended to include the Snuggery Cove area and again in 2016 to include the lands to the south of Beach Camp. The water service consists of approximately 250 parcels encompassing a total area of approximately 98.3 hectares. Of the 198 parcels, 168 (269.33 Single Family Equivalents (SFE)) were customers to the water system in 2017.

Water Supply

Initial data shows that the well level and temperature in the winter months (October to March) is very steady. The water level has an average depth of 30.1 meters with an 8 meter variation from low level to high level. The water has an average temperature of 9°C with a minimum temperature of 8.52°C and a maximum temperature of 9.72°C.

Water Production and Demand

Referring to Figure 2, 73,456 m³ of water was extracted (water production) from the well in 2017; a substantial increase of 37% over the previous year and a 29% increase from the 5 year average. The monthly comparison of treated water volumes produced for the years 2013 to 2017 inclusive shows the continued trend of higher production in the summer months. However the voluntary conservation efforts of the community have minimized the increase for the past few years. Singular spikes in monthly well extraction are largely attributable to recorded water main and service failures.

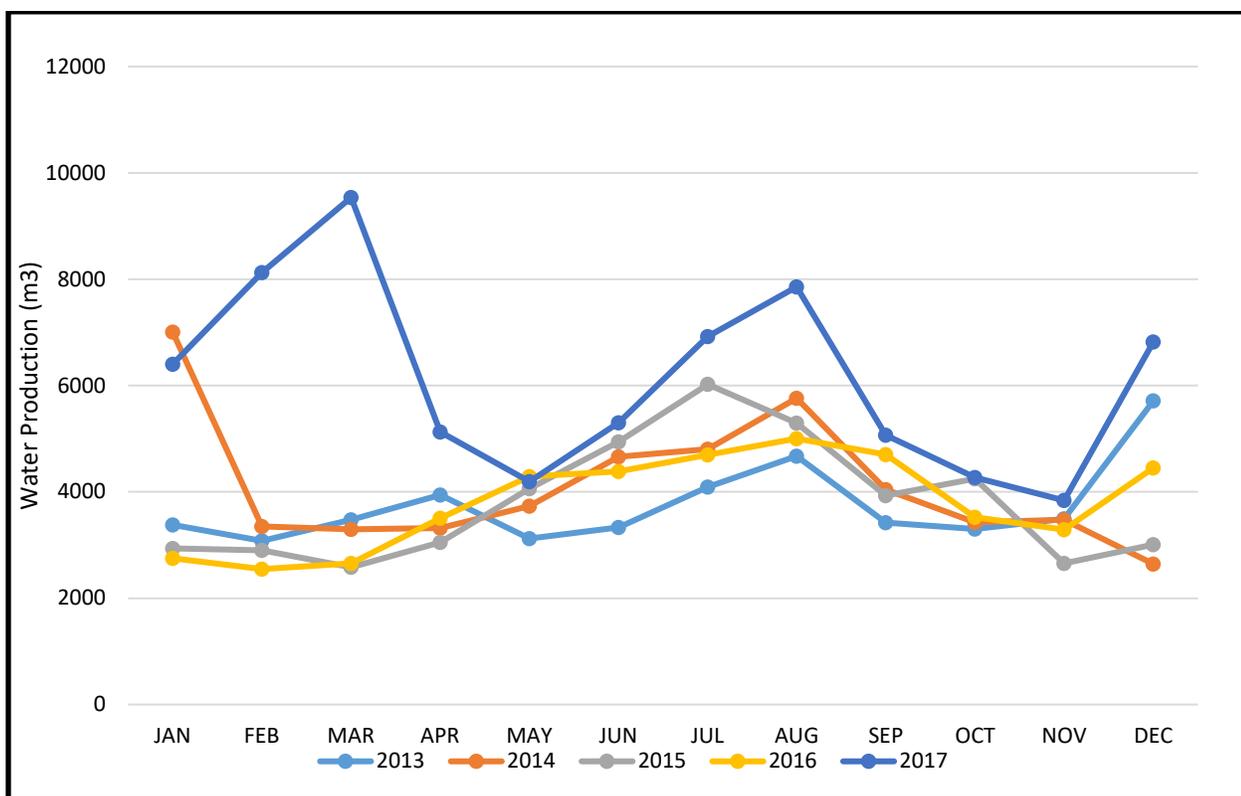


Figure 2: Port Renfrew Utility Water Service Monthly Water Production

Drinking Water Quality

The analytical results (biological, chemical and physical parameters) of water samples collected in 2017 from the Port Renfrew water system indicated that the drinking water was of good quality and generally within Guidelines for Canadian Drinking Water Quality health-related regulatory and aesthetic limits, including disinfection by-products.

On August 22, 2017, the water quality monitoring program registered an exceedance in manganese concentrations in a water sample from Osprey Place. Elevated manganese concentrations can lead to unpleasant water discolorations but do not pose a health risk. Investigations into this occurrence will be conducted to rule out or address a possible cross connection in the area of Osprey Place. Elevated manganese concentrations were not found in the source water nor in any other parts of the water system.

After an accidental loss of chlorination at the treatment plant in early November, the chlorine residuals in the distribution system dropped. As a result of this, system parts with high water age experienced bacteria regrowth in the pipes and two water samples (November 8 and 10) tested positive for total coliform bacteria. Emergency repairs to the chlorination system and extensive system flushing was successful in removing stale and underchlorinated water from the system.

While the treated water temperature did exceed the aesthetic limit of 15°C during the summer months, this had no other negative impact on the drinking water quality.

Typical Port Renfrew drinking water quality characteristics for 2017 are summarized as follows:

Raw Water

- Source water from the well was typically free of any total coliform and *E. coli* bacteria; only one raw water sample exhibited a very low concentration of total coliform bacteria.
- The well water was low in iron and manganese concentrations, slightly hard and had a slightly basic pH of 8.43.

Treated Water

- Two samples in different locations (November 8 and 10) tested positive for total coliform bacteria after an operational issue with the chlorination system. A contamination of the drinking water was ruled out during this event. The water delivered to the customers was safe to drink throughout the year.
- Turbidity was well under 1 NTU.
- The mean annual free chlorine concentration in the distribution system was an acceptable 0.44 mg/L.

Water Quality data collected from this drinking water system can be reviewed on the CRD website:

<https://www.crd.bc.ca/about/data/drinking-water-quality-reports/juan-de-fuca-water-quality-reports/port-renfrew-water-quality-reports>

Water Service Operational Highlights

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

- Multiple water main breaks/leaks in the Beach Camp area
- Multiple pipe breaks/repairs during construction and replacement of a section of water main
- Water main check valve replacement
- The replacement of one fire hydrant

Water Service Capital Project Updates

The Capital Projects that were completed in 2017 included:

1. Strategic Asset Management Plan – a comprehensive assessment of the water system is proposed for the future, but in the interim, the capacity and reliability study prepared for the system in 2015 will be used to guide future water system improvements.
2. Water Main Extension – the distribution system was extended to service lands along Powder Main Road. This work was fully funded by the developer and the works were turned over to the CRD when certified complete. The work included approximately 170 m of 150 mm diameter water main and service piping.
3. Supply Main Replacement Project – A portion of the supply main from the Water Treatment Plant to Port Renfrew was replaced in 2017.

Figure 4 shows Port Renfrew sewer flow trends over the last six years. The flows in 2017 were approximately 6.4% lower than 2016 but approximately the same as the 5-year average.

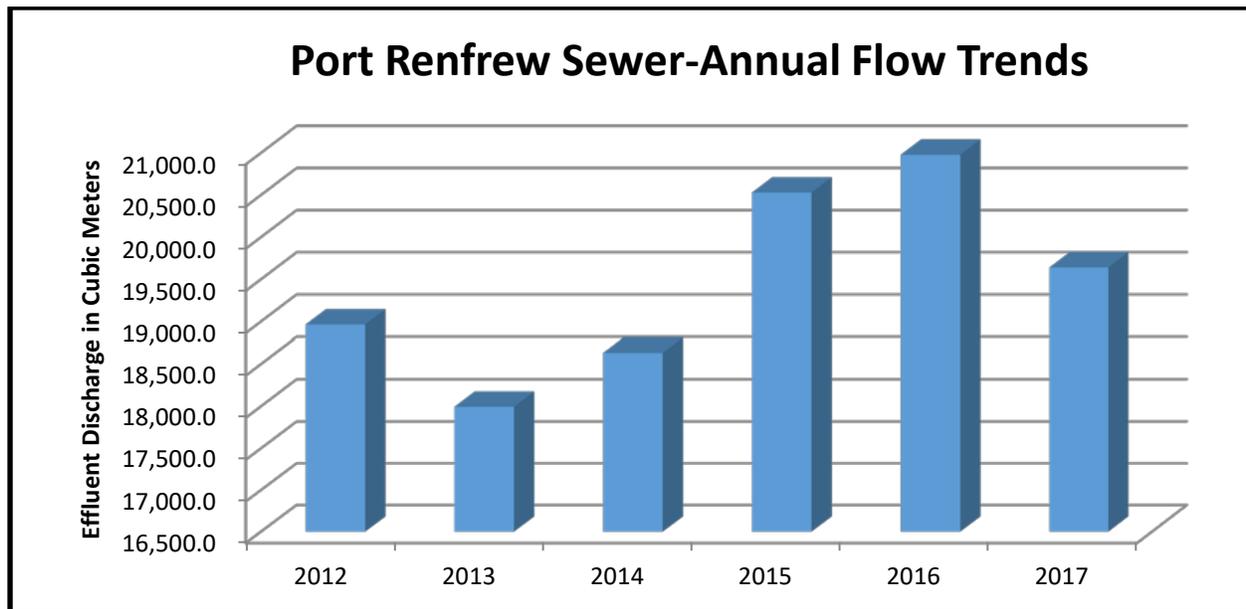


Figure 4: Port Renfrew Sewer Flow Trends 2012-2017

Treated Effluent Discharge Quality

Regulatory Compliance – Wastewater

Flow and effluent quality are assessed for compliance with the provincial discharge permit on a daily and monthly basis, respectively. Mean daily flows in 2017 were in the upper range of flows measured since 2007, but there were no exceedances of the allowable total daily flow maximum. There was one exceedance of permitted effluent quality limits, with the total suspended solids (TSS) sample from July 2017 being slightly over the limit. All other samples and parameters met effluent quality requirements, although it should be noted that effluent sampling often did not take place during peak flow events, when treatment efficiency is more likely to be challenged, as grab samples are collected once per month on a pre-scheduled basis.

Receiving Water

Routine receiving water monitoring was not required at the Port Renfrew WWTP in 2017. This monitoring is only required every 4 years unless there are planned bypasses, plant failures/overflows, or wet weather overflows that exceed 3 days duration in the winter or 1 day duration in the summer. No such events occurred in 2017. The routine sampling last took place in 2016 and is next required in 2020.

Sewer Service Operational Highlights

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

- There was only one operational issue of note (sewer blockage) in 2017 which therefore allowed staff to focus on preventative maintenance programs.

Sewer Service Capital Project Updates

There have been no capital expenditures on the wastewater system for a few years now and only one was proposed in 2017 which is to complete a Strategic Asset Management Plan (SAMP). A SAMP will include

information from past studies on condition and age of the existing infrastructure and recommend a prioritized list of infrastructure replacements, which will serve as the basis for future capital spending plans. The SAMP was initiated in 2017 and is anticipated to be completed in 2018.

In future years it is expected that funds will need to be borrowed to replace parts of the aging sewer system and to increase the capacity of the treatment plant, to accommodate the increasing wastewater flows.

STREET LIGHTING SERVICE

Street lighting service is provided in the area of Port Renfrew known as Beach Camp. The street lights are operated and maintained by BC Hydro, and costs are recovered through a parcel tax and user charge on parcels in the area where the service is provided. There were no significant issues with this service in 2017.

REFUSE DISPOSAL SERVICE

The Port Renfrew Refuse Disposal service serves 332 properties (289 residential folios) within the service area and is funded through direct tax requisition based on the value of each property. The Pacheedaht First Nation also utilizes the facility through fee-for-service agreement. The tonnages of materials received and transferred at the Port Renfrew facility in 2017 are as follows:

Garbage	183 tonnes (4.5% increase from 2016)
Recyclables:	
Paper fibres	22 tonnes (10% increase from 2016)
Glass/metal/plastic containers	4 tonnes (33% decrease from 2016)
Polystyrene	0.2 tonnes (no change from 2016)
Scrap metal	39 tonnes (7.2% decrease from 2016)
Kitchen scraps	20 tonnes (9.6% decrease from 2016)
Total recyclables	85 tonnes (4.5% decrease from 2016)

Financial Report

Please refer to the attached *Statement of Operations* for Port Renfrew Street Lighting, Water, Snuggery Cove Water, Sewer and Refuse Disposal services. Revenue includes parcel taxes (Transfers from Government), fixed user fees (User Charges), interest on savings (Interest Earnings), 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.

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CAPITAL REGIONAL DISTRICT

PORT RENFREW WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
Revenue		
Transfers from government	52,740	52,740
User Charges	53,376	53,543
Water Sales	-	500
Fees and Charges		
Other revenue from own sources:		
Interest earnings	81	267
Other revenue	57	92
Total revenue	<u>106,254</u>	<u>107,142</u>
Expenses		
General government services	5,190	5,080
CRD Labour and Operating costs	85,467	54,173
Debt Servicing Costs		
Other expenses	20,954	11,400
Total expenses	<u>111,611</u>	<u>70,653</u>
Net revenue (expenses)	(5,357)	36,489
Transfers to own funds:		
Capital Reserve Fund	-	43,609
Annual surplus (deficit)	(5,357)	(7,120)
Accumulated surplus, beginning of year	-	7,120
Accumulated deficit, end of year	<u>\$ (5,357)</u>	<u>-</u>

CAPITAL REGIONAL DISTRICT

Port Renfrew WATER
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2017

	Capital Reserve	
	2017	2016
Beginning Balance	187,250	126,883
Transfer from Operating Budget	-	43,609
Transfers from completed capital projects		14,752
Interest Income	1,963	2,006
Transfer to Capital Projects	(105,000)	-
Ending Balance	<u>84,213</u>	<u>187,250</u>

CAPITAL REGIONAL DISTRICT

SNUGGERY COVE WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
Revenue		
Transfers from government	23,785	23,700
Other revenue from own sources:		
Interest earnings	10	8
Other revenue	99	138
Total revenue	<u>23,894</u>	<u>23,846</u>
Expenses		
General government services	830	810
Debt Servicing Costs	22,960	22,999
Other Expenses	127	102
Total expenses	<u>23,917</u>	<u>23,911</u>
Annual surplus (deficit)	(23)	(65)
Accumulated surplus, beginning of year	(15)	50
Accumulated deficit, end of year	<u>\$ (38)</u>	<u>(15)</u>

CAPITAL REGIONAL DISTRICT

**Port Renfrew Sewer
Statement of Operations (Unaudited)
For the Year Ended December 31, 2017**

	2017	2016
Revenue		
Transfers from government	40,295	40,295
User Charges	41,614	41,146
Other revenue from own sources:		
Interest earnings	170	146
Other revenue	1,588	45
Total revenue	<u>83,667</u>	<u>81,632</u>
Expenses		
General government services	2,810	2,710
Contract for Services	2,870	-
CRD Labour and Operating costs	44,134	58,253
Debt Servicing Costs		
Other expenses	19,634	13,512
Total expenses	<u>69,448</u>	<u>74,475</u>
Net revenue (expenses)	14,219	7,157
Transfers to own funds:		
Capital Reserve Fund	21,879	11,836
Annual surplus (deficit)	(7,660)	(4,679)
Accumulated surplus, beginning of year	7,660	12,339
Accumulated surplus, end of year	<u>\$ -</u>	<u>7,660</u>

CAPITAL REGIONAL DISTRICT

**Port Renfrew SEWER
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2017**

	Capital Reserve	
	2017	2016
Beginning Balance	43,791	6,897
Transfer from Operating Budget Community Works Funds	21,879	11,836
Transfers from completed capital projects	-	24,859
Interest Income	482	199
Transfer to Capital Projects	(10,000)	-
Ending Balance	<u>56,152</u>	<u>43,791</u>

CAPITAL REGIONAL DISTRICT

PORT RENFREW STREET LIGHTING Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
Revenue		
Transfers from government	3,535	3,535
User Charges	3,574	3,574
Other revenue from own sources:		
Interest earnings	34	21
Other revenue	465	558
Total revenue	<u>7,608</u>	<u>7,688</u>
Expenses		
General government services	450	390
Electricity	6,294	6,073
Other expenses	104	105
Total expenses	<u>6,848</u>	<u>6,568</u>
Net revenue (expenses)	760	1,120
Annual surplus (deficit)	760	1,120
Accumulated surplus, beginning of year	2,800	1,683
Accumulated surplus, end of year	<u>\$ 3,560</u>	<u>2,803</u>

CAPITAL REGIONAL DISTRICT

PORT RENFREW REFUSE Statement of Operations (Unaudited) For the Year Ended December 31, 2017

	2017	2016
Revenue		
Transfers from government	31,200	31,200
Recovery from Pacheedaht FN	33,454	32,709
Recovery from CRD Solid Waste	15,000	15,000
Recyclables Sales	8,945	4,816
Other revenue from own sources:		
Interest earnings	111	369
Other revenue	339	415
Total revenue	<u>89,049</u>	<u>84,509</u>
Expenses		
General government services	3,090	2,759
Contract for Services	71,528	70,633
Utilities & Telecommunications	2,336	1,885
Other expenses	235	3,723
Total expenses	<u>77,189</u>	<u>79,000</u>
Net revenue (expenses)	11,860	5,509
Transfers to own funds:		
Equipment Replacement Fund	1,020	1,020
Capital Reserve Fund	10,840	23,559
Annual surplus (deficit)	-	(19,070)
Accumulated deficit, beginning of year	-	19,070
Accumulated surplus, end of year	<u>\$ -</u>	<u>-</u>

CAPITAL REGIONAL DISTRICT

**Port Renfrew Refuse
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2017**

	Capital Reserve	
	2017	2016
Beginning Balance	33,806	10,091
Transfer from Operating Budget	10,840	23,559
Interest Income	463	156
Ending Balance	<u>45,109</u>	<u>33,806</u>