

Port Renfrew Utility System

2019 Annual Report

CRD | Drinking Water, Wastewater, Street Lighting and Refuse

Introduction

This report provides a summary of the Port Renfrew Utility Services for the year 2019 and includes a description of services and 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, located in the Juan de Fuca Electoral Area of the CRD, is comprised of rural residential and commercial and institutional development. 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 211 parcels, 195 (307.58 Single Family Equivalents (SFE)) were customers to the water system in 2019.



Figure 1: Map of the Water Service Area.

The Port Renfrew water system is primarily comprised of:

- One groundwater well, related pumping and control equipment and building.
- Disinfection process equipment (chlorine) and an aeration tower/scrubber for hydrogen sulfide reduction to improve water taste and odour.
- One steel storage tank (total volume is 454 m³ or 120,000 US gallons).
- Distribution system (4,400 m network of 150 mm and 100 mm diameter asbestos cement (AC) water mains to the Beach Camp area and a 2,200 m network of 150 mm and 100 mm PVC water mains to the Snuggery Cove area).
- Other water system assets: 195 service connections, 25 hydrants and an auxiliary generator.

Water Supply

2019 data shows that the water level in the winter, when at its highest, was 22 metres above the well pump, and in the summer at its lowest point was 15.7 metres above the pump. The water has an average temperature of 8.9°C (Celsius), with a minimum temperature of 8.7°C, and a maximum temperature of 9.5°C.

Water Production and Demand

Referring to Figure 2, 56,634 m³ of water was extracted (water production) from the well in 2019; an increase of 7% over the previous year and 2.5% above the 5 year average. The monthly comparison of treated water volumes, produced for the years 2013 to 2019 inclusive, shows the continued trend of higher production in the summer months.

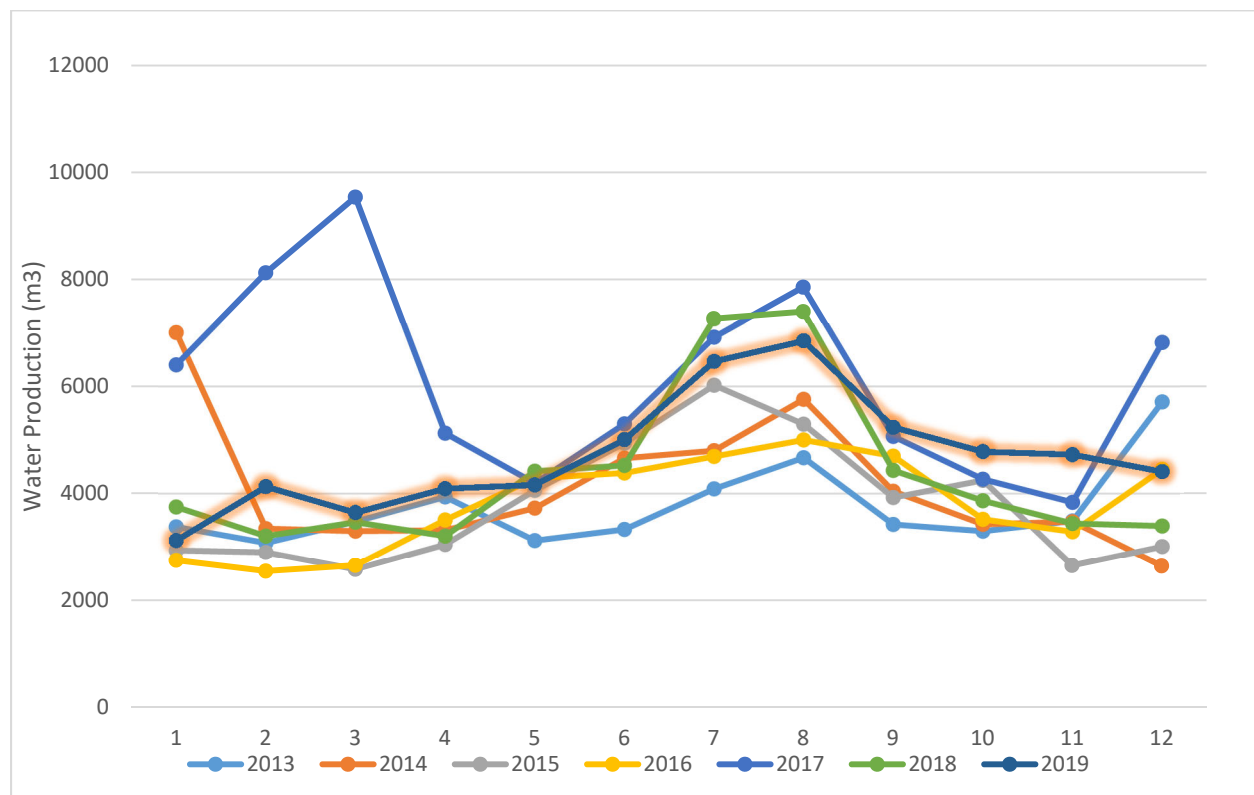


Figure 2: Water Service Monthly Water Production

Drinking Water Quality

The analytical results (biological, chemical and physical parameters) of water samples collected in 2019 from the Port Renfrew water system indicated that the drinking water was of good quality and within Guidelines for Canadian Drinking Water Quality (GCDWQ) health-related regulatory and aesthetic limits, including disinfection by-products. There were also no system operations related water quality events in 2019.

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 2019 are summarized as follows:

Raw Water

- Source water from the well was typically free of any total coliform and *E. coli* bacteria with the exception of a very low total coliform bacteria concentration in 1 of 13 samples.
- The well water was low in iron and manganese concentrations, slightly hard and had a slightly basic pH of 8.40.
- The median raw water turbidity was below the detection limit of 0.14 NTU.

Treated Water

- The water delivered to the customers was safe to drink throughout the year. All 67 compliance samples from the distribution system in 2019 were free of total coliform and *E. coli* bacteria.
- The mean annual free chlorine concentration in the distribution system was an acceptable 0.33 mg/L.
- The average annual disinfection by-product TTHM concentration was well below the GCDWQ limit.

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>

Water Service Operational Highlights

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

- Fire hydrant servicing.
- The new larger booster pumps were installed.
- Repaired water leak on Wickaninnish Rd.

Water Service Capital Project Updates

The Capital Projects that were completed in 2019 includes:

- Completion of the Hydro Pole Upgrade Project to the Water Treatment Plant including replacement of hydro poles 2 & 6, pole 7 with cross arms, pole 5 with added push pole and straighten pole 4.

- Tree trimming to Hydro Specifications along the entire length of the high voltage line feeding the Water Treatment Plant.

SEWER SERVICE

Service Description

The Port Renfrew sewer system serves 88 properties in the Beach Camp and localized residential area above and has continued to operate reliably in the past year, although the wastewater treatment plant (WWTP) had difficulty processing peak flow events. The treatment process consists of an extended aeration facility and a steel outfall which discharges treated effluent to the San Juan River estuary under a Ministry of Environment permit. The 88 properties are comprised of 94.77 Single Family Equivalents (SFE's).

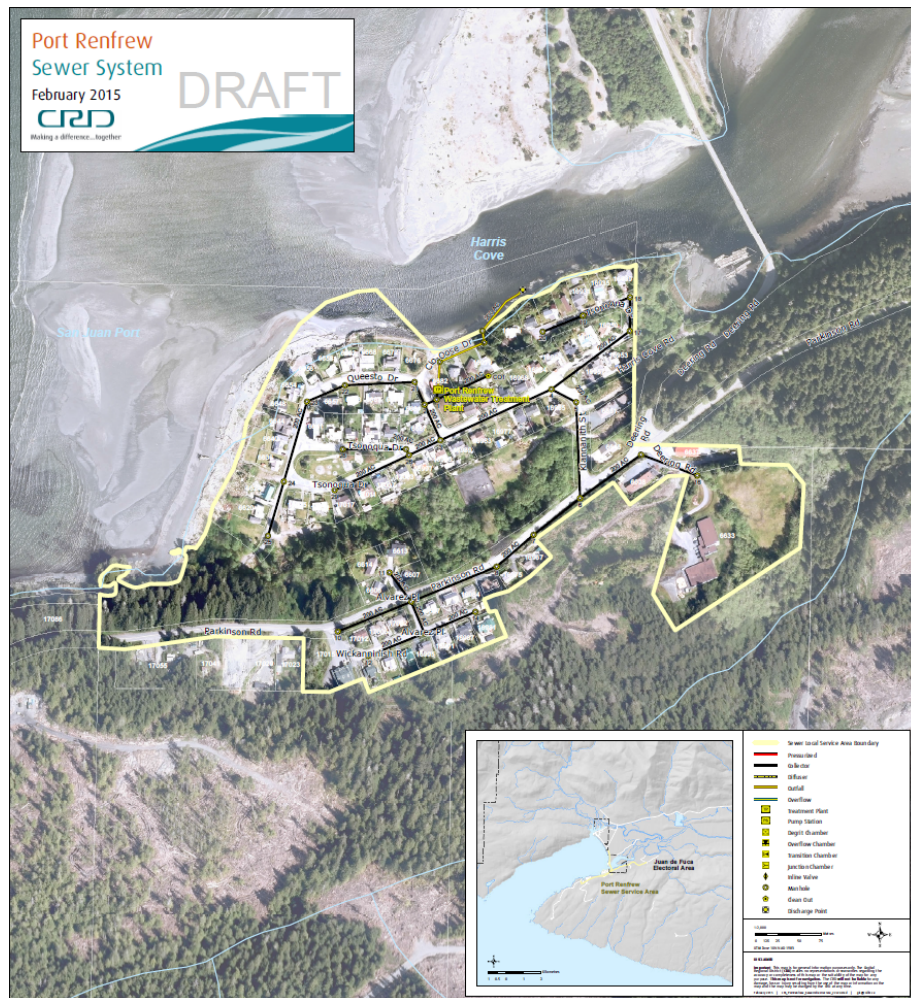


Figure 3: Map of the Sewer Service Area.

A sewage volume of 17,974 m³ was treated and discharged in 2019 which equates to an average of 189 m³/SFE. Sewage flows in Port Renfrew went down by 10% from 2018 which can be influenced by annual rainfall and tourist numbers. During the rainy season, inflow and infiltration water enters the sewer system through cracks and defects in the pipes and manholes that were installed in the 1960's.

Figure 4 shows Port Renfrew sewer flow trends over the last eight years.

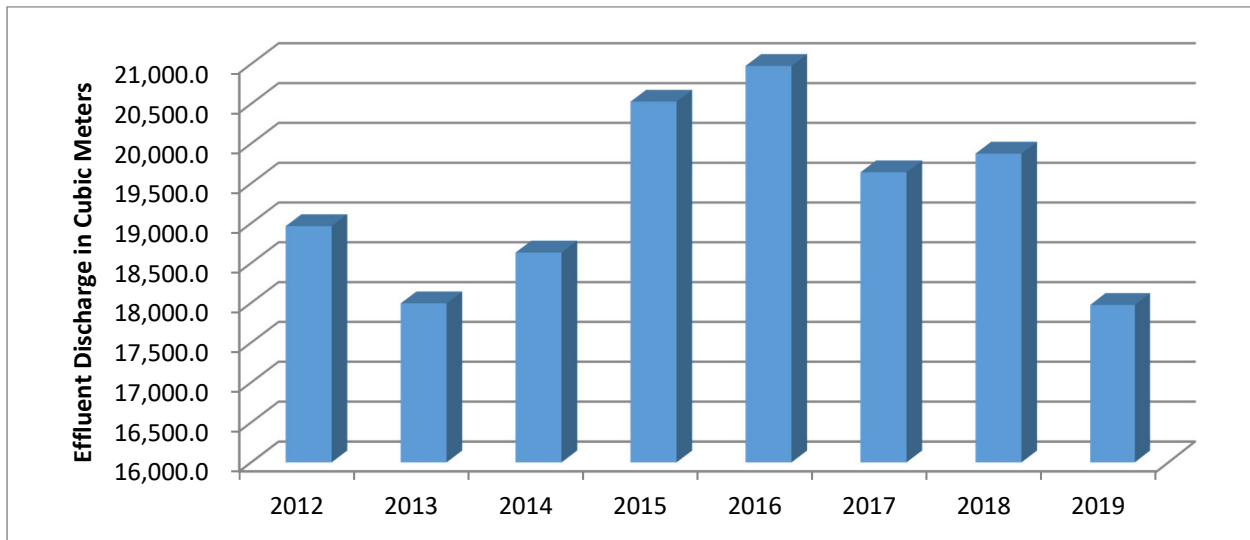


Figure 4: Port Renfrew Sewer Flow Trends 2012-2019

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 2019 were similar to flow rates recorded since 2007; flow exceeded the permitted daily maximum on a single day in January 2019 due to heavy rains. There was also a single exceedance of permitted effluent quality limits, with the total suspended solids (TSS) sample from February 2019 being three times the permitted limit. A resample collected later in the month was well below 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 2019. 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. The routine sampling is next required during summer 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:

- Higher than normal grit removal from the treatment plant.
- Replace hydro pole to the WWTP.
- Remove, inspect and repair jammed waste water pump.
- Replace fuel injection pump on backup generator at WWTP.
- Rebuild air piping in aeration tank at WWTP.
- Sewer repair for ambulance station.

Sewer Service Capital Project Updates

A Strategic Asset Management Plan (SAMP) is being developed and 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.

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.

The Capital Project updates for 2019 include:

- WWTP Structural Assessment – The project will be completed in 2020 by retaining a consultant to carry out the structural assessment.
- WWTP Roof Replacement – The project will be completed by a contractor in 2020.

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 2019.

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 a fee-for-service agreement. The tonnages of materials received and transferred at the Port Renfrew facility in 2019 are as follows:

Garbage		179 tonnes (1% increase from 2018)
Recyclables	Paper fibres	27 tonnes (13% decrease from 2018)
	Glass/metal/plastic containers	6 tonnes (14% decrease from 2018)
	Polystyrene	0.3 tonnes (no change from 2018)
	Scrap metal	34 tonnes (3% decrease from 2018)
	Kitchen scraps	17 tonnes (26% decrease from 2018)
	<u>Total recyclables</u>	<u>84 tonnes (12% decrease from 2018)</u>

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 for 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 cost 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 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.

Submitted by:	Matt McCrank, M.Sc., P.Eng., Senior Manager, Infrastructure Operations Ian Jesney, P.Eng., Senior Manager, Infrastructure Engineering Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence	Ted Robbins, BSc, C.Tech, General Manager, Integrated Water Services

Attachment: 2019 Financial Summary Statement of Operations



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CAPITAL REGIONAL DISTRICT

PORT RENFREW WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2019

	2019	2018
Revenue		
Transfers from government	55,570	53,260
User Charges	59,688	60,959
Water Sales	500	-
Other revenue from own sources:		
Interest earnings	603	195
Other revenue	19,355	1,980
Total Revenue	135,717	116,394
Expenses		
General government services	5,362	5,500
CRD Labour and Operating costs	74,111	63,863
Other expenses	12,949	37,551
Total Expenses	92,422	106,914
Net revenue (expenses)	43,295	9,480
Transfers to own funds:		
Capital Reserve Fund	43,295	4,123
Annual surplus (deficit)	-	5,357
Accumulated surplus(deficit), beginning of year	-	(5,357)
Accumulated deficit, end of year	\$ -	(0)

CAPITAL REGIONAL DISTRICT

PORT RENFREW WATER Statement of Reserve Balances (Unaudited) For the Year Ended December 31, 2019

	Capital Reserve	
	2019	2018
Beginning Balance	62,461	84,215
Transfer from Operating Budget	43,295	4,123
Transfers from completed capital projects	11,661	-
Interest Income	1,538	1,823
Transfer to Capital Projects	(46,000)	(27,700)
Ending Balance	72,955	62,461

CAPITAL REGIONAL DISTRICT

SNUGGERY COVE WATER Statement of Operations (Unaudited) For the Year Ended December 31, 2019

	2019	2018
Revenue		
Transfers from government	1,719	23,860
Other revenue from own sources:		
Interest earnings	-	15
Transfer from capital fund	18,848	-
Other revenue	6,011	112
Total Revenue	26,578	23,988
Expenses		
General government services	712	880
Debt Servicing Costs	17,505	22,974
Other Expenses	245	177
Total Expenses	18,462	24,030
Annual surplus (deficit)	8,116	(43)
Accumulated surplus, beginning of year	(81)	(39)
Accumulated deficit, end of year	\$ 8,034	(81)

CAPITAL REGIONAL DISTRICT

PORT RENFREW SEWER Statement of Operations (Unaudited) For the Year Ended December 31, 2019

	2019	2018
Revenue		
Transfers from government	45,620	44,750
User Charges	46,875	45,953
Other revenue from own sources:	-	-
Interest earnings	18	217
Other revenue	1,067	966
Total Revenue	93,581	91,887
Expenses		
General government services	3,338	2,990
Contract for Services	3,060	231
CRD Labour and Operating costs	60,186	55,355
Other expenses	26,776	17,993
Total Expenses	93,361	76,569
Net revenue (expenses)	220	15,318
Transfers to own funds:		
Capital Reserve Fund	220	15,318
Annual surplus (deficit)	(0)	(0)
Accumulated surplus, beginning of year	-	-
Accumulated surplus, end of year	(0)	(0)

CAPITAL REGIONAL DISTRICT

PORT RENFREW SEWER Statement of Reserve Balances (Unaudited) For the Year Ended December 31, 2019

	Capital Reserve	
	2019	2018
Beginning Balance	57,548	56,152
Transfer from Operating Budget	220	15,318
Transfers from completed capital projects	-	-
Interest Income	1,060	1,077
Transfer to Capital Projects	(39,000)	(15,000)
Ending Balance	19,828	57,548

CAPITAL REGIONAL DISTRICT

PORT RENFREW STREET LIGHTING Statement of Operations (Unaudited) For the Year Ended December 31, 2019

	2019	2018
Revenue		
Transfers from government	2,040	3,610
User Charges	2,087	3,653
Other revenue from own sources:	-	-
Interest earnings	76	83
Other revenue	402	438
Total Revenue	4,605	7,783
Expenses		
General government services	495	478
Electricity	6,508	6,418
Other expenses	62	57
Total Expenses	7,065	6,953
Net revenue (expenses)	(2,460)	830
Annual surplus (deficit)	(2,460)	830
Accumulated surplus, beginning of year	4,403	3,573
Accumulated surplus, end of year	\$ 1,943	4,403

CAPITAL REGIONAL DISTRICT

PORT RENFREW REFUSE Statement of Operations (Unaudited) For the Year Ended December 31, 2019

	2019	2018
Revenue		
Transfers from government	31,860	31,256
Recovery from Pacheedaht FN	34,486	33,707
Recovery from CRD Solid Waste	15,000	15,000
Recyclables Sales	6,403	9,998
Other revenue from own sources:		
Interest earnings	297	133
Other revenue	3,194	1,305
Total Revenue	91,240	91,399
Expenses		
General government services	3,319	3,280
Contract for Services	71,098	74,573
Utilities & Telecommunications	2,195	2,077
Other expenses	268	209
Total Expenses	76,879	80,140
Net revenue (expenses)	14,361	11,259
Transfers to own funds:		
Equipment Replacement Fund	4,000	2,000
Capital Reserve Fund	10,361	9,259
Annual surplus (deficit)	-	0
Accumulated deficit, beginning of year	-	-
Accumulated surplus,	\$ -	0

CAPITAL REGIONAL DISTRICT

PORT RENFREW REFUSE Statement of Reserve Balances (Unaudited) For the Year Ended December 31, 2019

	Capital Reserve	
	2019	2018
Beginning Balance	55,443	45,110
Transfer from Operating Budget	10,361	9,259
Interest Income	1,560	1,073
Ending Balance	67,364	55,443

	Equipment Replacement Fund	
	2019	2018
Beginning Balance	29,443	28,865
Transfer from Operating Budget	4,000	2,000
Purchases from ERF	-	(2,006)
Interest Income	408	584
Ending Balance	33,851	29,443