Making a difference...together

CEDAR LANE WATER SERVICE
2018 ANNUAL REPORT
April 18, 2019

Introduction

This report provides a summary of the Cedar Lane Water Service for 2018. 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

The Cedar Lane Water Utility is a rural residential community located on Salt Spring Island. The service was created in 1970 and became a CRD service in 2007. The Cedar Lane Water Utility (Figure 1) is comprised of 37 parcels of land of which all are connected to the system.

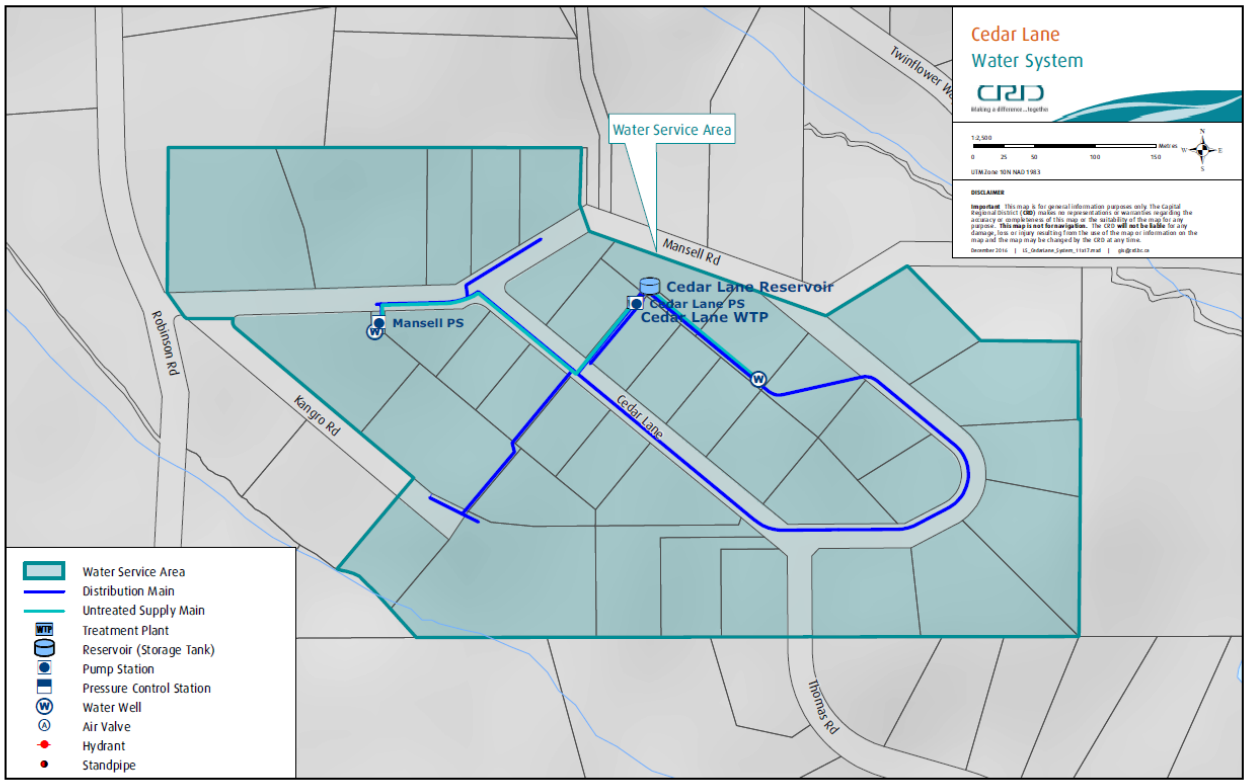

Figure 1: Cedar Lane Water Service

The Cedar Lane water system is primarily comprised of:

- two ground water source wells (#1 and #5)
- a water treatment plant (WTP) that provides primary disinfection with ultraviolet (UV) radiation and residual disinfection using sodium hypochlorite;
- 1 water reservoir – 136 m^3 (30,000 Ig);
- 1,260 metres of water distribution pipe;
- fire hydrant, standpipes, and gate valves;
- water service connections complete with water meters**.**

Water Production and Demand

Referring to Figure 2, 3,887 cubic meters (m^3) of water was extracted (water production) from two ground water wells in 2018; a 1% increase from the previous year and is 2% increase from the five year average. Water demand (customer water billing) for the service totaled 3,507 m^3 of water; a 1% decrease from the previous year and a 4% decrease from the five year average.

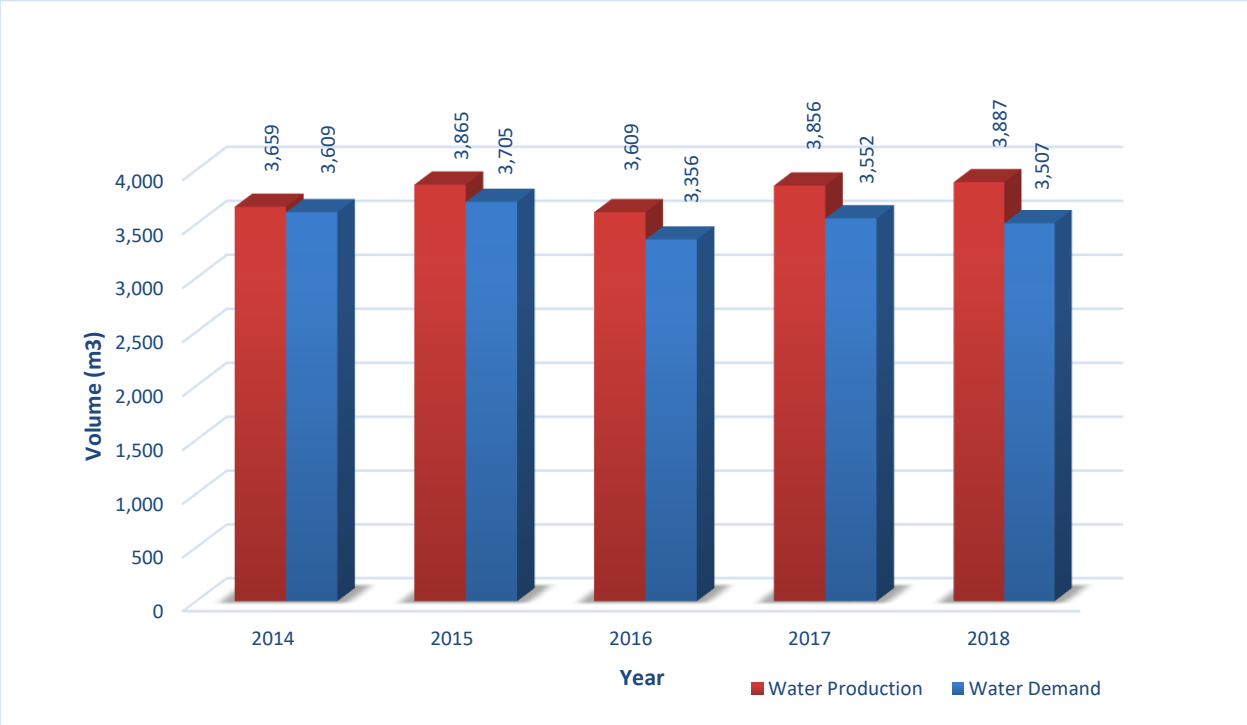

Figure 2: Cedar Lane Water Service Annual Water Production and Demand

Water production by month for the past five years is shown in Figure 3. Water consumption, for most water systems, is greatest during the summer months. Water usage for Cedar Lane is fairly consistent throughout the year likely the result of conservative indoor and outdoor water use.

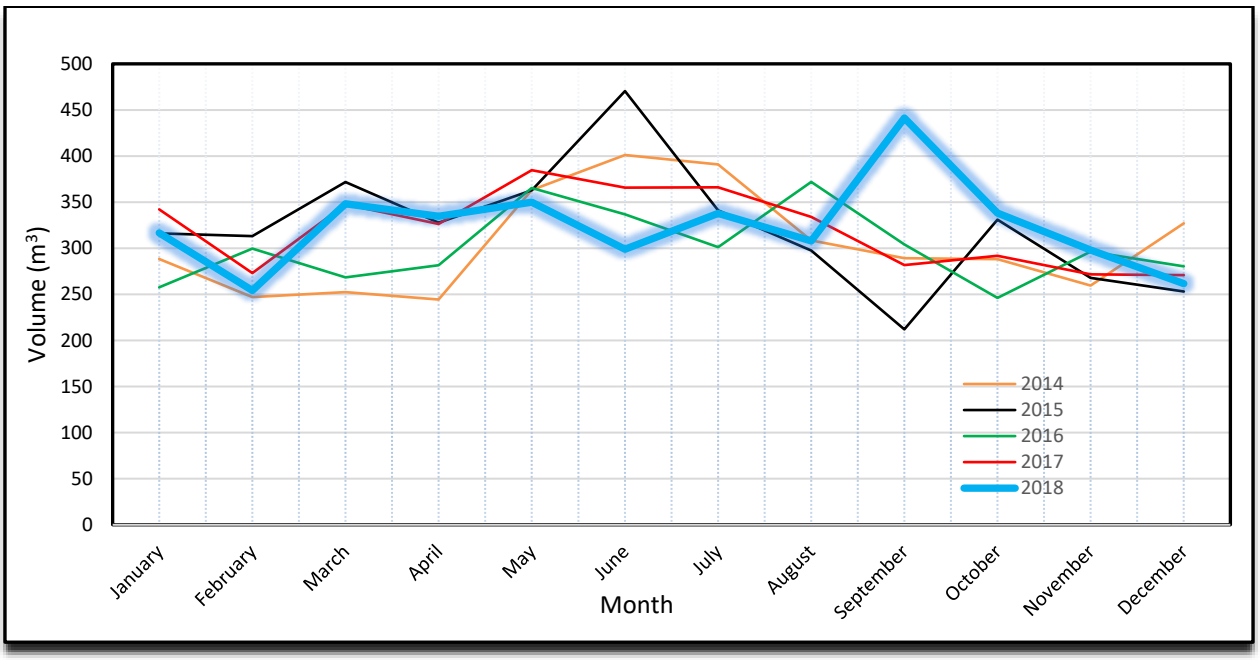

Figure 3: Cedar Lane Water Service Monthly Water Production

The Cedar Lane Water System is fully metered, and water meters are read quarterly. Water meter information 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 11%. Water loss is estimated to be approximately 7% which is considered to be acceptable for a small water system such as Cedar Lane.

Water Quality

The analytical results (biological, chemical and physical parameters) of water samples collected in 2018 from the Cedar Lane Water System indicated that the water was safe to drink. Naturally high manganese concentrations in the well water remain untreated and regularly exceed the aesthetic limits established in the Guidelines for Canadian Drinking Water Quality (GCDWQ). Associated precipitates have been a significant nuisance problem in parts of the Cedar Lane water system and cause discolouration of the drinking water.

Typical Cedar Lane Water System drinking water quality characteristics for 2018 are summarized as follows:

- Source water from both wells was free of any *E. coli* bacteria.
- Well #1 registered several positive total coliform result during March, April and December, and Well #5 in several samples from October to December. The bacteria concentrations were very low in all samples but one in April from Well #1 which recorded an unusual total coliform concentration of 75 CFU/100mL.

- Source water can be characterized as hard (~145 mg/L $CaCO_3$).
- Both wells exhibited elevated iron and especially high manganese concentrations.
- Treated water was safe to drink and had no confirmed presence of total coliform or *E. coli* bacteria. Two samples in April and May tested positive for total coliforms but immediate resamples could not confirm the bacteria presence.
- Free chlorine residual concentrations were acceptable and within the desired range (i.e., 0.26 – 1.25 mg/L)
- Disinfection by-products: trihalomethanes (THM) were well below the GCDWQ limit of 100 μg/L, haloacetic acids (HAA) were not tested in 2018 due to a history of very low concentrations in this system.
- Metals were typically below limits except for elevated manganese concentrations (mean annual 74.6 μg /L) that regularly led to discoloration of the drinking water (aesthetic issue).

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

Operational Highlights

The following is a summary of the major operational issues that were addressed during the 2018 operating period:

- Corrective maintenance well no 1 pump.
- Replacement of well no 5 pump.
- Replacement of chlorine analyzer probe membrane.
- Corrective maintenance well no 5 pressure transducer
- Standpipe water leak repair.
- Emergency response to Dec 20th windstorm event.

CAPITAL IMPROVEMENTS

There were two projects planned for 2018:

1. Asset Management Plan, ($5,000 allocated, $4,547 spent). Asset management plan will recommend a prioritized list of infrastructure replacements, which will serve as the basis for future capital spending plans. Additional funds may be required for staff to complete the plan. This work will continue into 2019.

2. Abandon unused wells ($10,000 allocated, $0 spent). The original system drilled five wells, and two (well #1 and #5) are in production and operate separately. Wells that are no longer in use must be closed to avoid potential future aquifer contamination. Abandoning a well must be in accordance with Groundwater Protection Regulations. This work will be carried over to 2019.

2018 FINANCIAL REPORT

Please refer to the attached S*tatement 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.

2018 User Fee charges were $854.86 per Single Family Equivalent (SFE) and 2018 Parcel Tax charges were $605.05 per Taxable Parcel.

The balances in the Cedar Lane Water service capital funds and reserve accounts at December 31, 2018 were:

Description	**Balance at end of 2018**
Operating Reserve Fund	$20,831
Capital Reserve Fund	$84,599

Water System Problems - Who to Call:

To report any event or to leave a message regarding the Cedar Lane 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)**
North Salt Spring Waterworks District (contract operator): **250 537-9902**
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.

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

CAPITAL REGIONAL DISTRICT

CEDAR LANE WATER
Statement of Operations (Unaudited)
For the Year Ended December 31, 2018

	2018	2017
Revenue		
Transfers from government	21,266	22,660
User Charges	31,631	28,671
Sale - Water	8,799	8,941
Other revenue from own sources:		
Interest earnings	23	45
Other revenue	1,029	209
Transfer from Operating Reserve Account	8,831	-
Transfer from Water Reserve Fund	24,024	-
Total revenue	95,603	60,525
Expenses		
General government services	3,230	3,040
Contract for Services	22,614	15,313
CRD Labour and Operating costs	17,091	5,263
Debt Servicing Costs	37,778	15,683
Other expenses	13,890	17,115
Total expenses	94,603	56,414
Net revenue (expenses)	1,000	4,112
Transfers to own funds:		
Capital Reserve Fund	-	4,002
Operating Reserve Fund	1,000	110
Annual surplus (deficit)	0	(0)
Accumulated surplus, beginning of year	-	-
Accumulated surplus, end of year	$ 0	(0)

CAPITAL REGIONAL DISTRICT

CEDAR LANE WATER
Statement of Reserve Balances (Unaudited)
For the Year Ended December 31, 2018

	Capital Reserve 2018	2017
Beginning Balance	106,463	87,406
Transfer from Operating Budget	-	4,002
Transfers from completed capital projects	-	13,839
Interest Income	2,159	1,216
Transfer to Capital Project	(24,024)	-
Ending Balance	84,599	106,463

	Operating Reserve 2018	2017
Beginning Balance	27,982	27,155
Transfer from/(to) Operating Budget	(7,831)	110
Interest Income	680	717
Ending Balance	20,831	27,982