

Sunshine Coast Regional District 2019 Utility Services Annual Report



Submitted July 2020

Sunshine Coast Water Systems

The Sunshine Coast Regional District (SCRD) supplies water to approximately 23,000 residents from Langdale to Earls Cove, which are located within the traditional territories of the *shíshálh* and Skwxwu7mesh First Nations. Water is supplied for drinking, fire protection, industry, and irrigation. This involves the operation and maintenance of the Langdale, Soames Point, Grantham's Landing, Eastbourne (Keats Island), Regional Water, South Pender Harbour, Cove Cay, Egmont and North Pender Harbour Water Systems.

Regional Water System is the largest water system and supplies over 90% of the Sunshine Coast's residents and businesses within the regional water services area. The Chapman Creek watershed is approximately 7150 hectares in size. The surface area of Chapman Lake is approximately 34 hectares. Seasonally the system is supplemented with water from Gray Creek and Chaster Well.

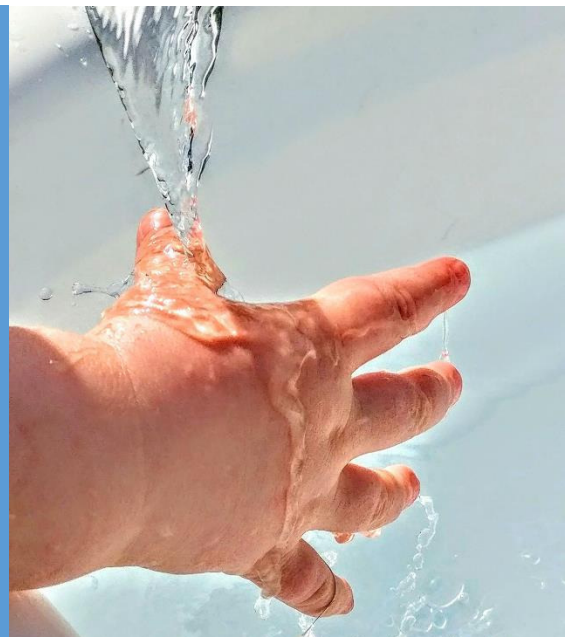
North Pender Harbour Water System is an independent system, operated and maintained by the SCRD since 2007. The source for this system is Garden Bay Lake, with Hotel Lake as a secondary supply for emergency use only.

South Pender Harbour Water System is an independent system which has been operated and maintained by the SCRD since 2008. The source for this system is McNeill Lake which is supplied water from Harris Lake.

Combined, the SCRD Water Systems consist of over 379 km of watermains, 16 storage reservoirs, 15 pump stations, 29 pressure reducing valve stations, 1145+ fire hydrants, 10 chlorination stations and approximately 11,475 water connections.

The following 2019 Utility Services Annual Report covers the period between January 1, 2019 and December 31, 2019.

The SCRD is committed to providing drinking water which exceeds regulatory requirements. We take pride in serving the needs of our community while meeting the challenges of water supply and protection, community outreach and education, water conservation, and new regulations.



Water Quality Monitoring

Sampling

Every week, water samples are taken from sites throughout our water systems as a part of our operating permit with Vancouver Coastal Health and a comprehensive water quality monitoring program. These samples are tested for total coliforms and E.coli coliforms. The samples are analyzed at a Provincial Laboratory in Vancouver and results are sent to the SCRD Utility Services Division and the Vancouver Coastal Health Office. The presence of total coliforms indicates bacterial contamination; E.coli coliforms indicate bacterial contamination from human or animal waste. Sampling error can contaminate samples and cause elevated coliform results. In the event of a failed sample result, technicians re-sample the problem location.

2019 Results

A total of 1535 total coliform and E. coli samples were collected throughout the Sunshine Coast water systems. The frequency of sampling met the requirements for the permit conditions and met the Drinking Water Protection Regulations. Three samples tested positive for total coliform in the Chapman water system. These are believed to have been caused by sample error. One sample from the Granthams Landing water system detected total coliform. Upon this occurrence, the reservoir was isolated until results of resampling were received. The cause was attributed to sampling contamination during heavy rains. A single sample in the North Pender water system detected the presence of total coliform, the resample showed no total coliform, therefore the cause of the failed result was sample contamination. One sample from the South Pender Harbor water system detected the presence of total coliform. Sample error is suspected, as resampling showed no issues. Three samples detected total coliform in the Langdale water system. These results are presumed to have been caused by sampling error. In 2019, Vancouver Coastal Health (VCH) conducted annual inspections and the SCRD passed with no violations to the operating permits.

The SCRD collected samples for semi-annual potability analysis and quarterly Disinfection Byproducts analysis to ensure that the physical, chemical, and organic parameters of the water systems complied with Canadian Drinking Water Guidelines. More detailed results can be found on the SCRD website at www.scrd.ca/quality.

Sample Location	Samples Collected	Coliform Positives	E.coli Positives
Cove Cay	76	0	0
Eastbourne	126	0	0
Egmont	102	0	0
Chapman	647	3	0
Granthams Landing	53	1	0
North Pender Harbour	200	1	0
Soames	75	0	0
South Pender Harbour	175	1	0
Langdale	81	3	0
Total	1535	9	0

Compliance

Vancouver Coastal Health Operating Permit

The SCRD is in compliance with the conditions of the operating permits. These include:

- Annual review and update of the Emergency Response Plan.
- Bacteriological sampling frequency is semi-monthly from 59 sites for a total of 1535 samples this year.
- Provide and make public, within six months of the end of the calendar year, an Annual Report.
- Well Protection Plan for each groundwater system.



Emergency Response Plans

The SCRD has an Emergency Response Plan (ERP) for each of its water systems. Under the *Drinking Water Protection Act*, the SCRD ensures that the ERPs are updated and maintained to comply with the SCRD's Operating Permit issued by Vancouver Coastal Health Authority (VCH) and to conform to the BC Emergency Response Management System framework.

ERPs are used in the event of an emergency within a water system. The ERP documents are readily available to management, trained water system operators and health officers. They layout the necessary actions to be taken during and after specific emergencies

In 2019 the SCRD updated the ERPs for all of the water systems and submitted them to VCH where they were reviewed and approved.

Well Protection Plan

In 2016 Associated Engineering was hired by the SCRD to develop Well Protection Plans (WPP), as required by the Water Sustainability Act. These WPPs identify all characteristics of the aquifer the well is drilled into and any potential threats to the groundwater supply sources and document measures to mitigate them. The objective of the WPP is to ensure the safety of the Langdale, Chaster, Soames Point, Granthams and Eastbourne (Keats Island) drinking water systems.



Getting to Know Your Utility Operations Superintendent, Codi Abbott.

What is something that surprises people about our water systems?

I find people are always surprised when they take a tour of the Chapman Water Treatment Plant. Seeing the plant in person helps people to understand all the work that goes into making the water safe to drink.

What is your favourite part of your role?

My favourite part of my role is the variety of work I get to do.

Water Concerns

Leaks

If a water leak is outside of your property line or is coming out of the water connection, contact the SCRD at [604-885-6806](tel:604-885-6806). If the leak is inside the property line it is the homeowner's responsibility to repair the leak. The SCRD does not work on private property.

Water Discolouration

Maintenance of the distribution system, hydrant-use, construction and watermain breaks can cause temporary water discolouration. This occurs when the flow or pressure has changed in the watermain. During this time, flushing your cold water tap will return water clarity. Normal conditions are typically restored within 24 hours. Scheduled flushing and maintenance is publicized in advance in order to provide early notification. You can report water quality concerns by calling the SCRD at [604-885-6806](tel:604-885-6806).

Did you know?

*1 drip of water
leaking every
second wastes over
20 Liters a day.*

More information related to water and wastewater can be found at www.scrd.ca/Water

System Improvements

Daniel Point Reservoir

A chlorine analyzer was added to the North Pender Harbour Water System at the [Daniel Point Reservoir](#). This allows for the remote real-time monitoring and notification of chlorine residual levels. Maintaining the correct levels of chlorine residual is necessary to ensure safe drinking water. The previous manual process required operators on site, this instrument helps to maintain ideal levels, improves water quality safety, reduces costs incurred by operators on site, improve efficiency, and increases our compliance with the Canadian Drinking Water Guidelines and Vancouver Coastal Health.

Soames

The [Soames Point Water System](#) is now utilizing a “Supervisory Control and Data Acquisition” system (SCADA). This system continuously records information about the status of equipment and is monitored and adjusted remotely by a technician. The SCADA system is able to immediately alert an operator if any specification moves outside of its normal operating range.

Chapman

New online instrumentation was added to the [Chapman Water Treatment Plant](#). This included the incorporation of an additional chlorine analyzer, replacement of all online turbidity meters, streaming current meters, pH meters and particle counters. These instruments enhance water quality control and monitoring, increase efficiency, and strengthen our water safety.

South Pender

The South Pender Harbour Water Treatment Plant received new a new online streaming current meter, this online instrument helps operators optimize chemical addition to the water.



Chapman WTP instrumentation upgrade

System Improvements

Wastewater Projects

- A new drainage field for the [Merrill Crescent Community Wastewater Treatment System](#) was installed. This new system includes improvements to the ground disposal field and system reliability.
- A new wastewater treatment facility was constructed for the [Square Bay Wastewater Service Area in 2018 with final commissioning taking place in 2019](#). This new facility uses Upflow Sludge Blanket Filtration (USBF) biological treatment technology, sand filtration, and UV disinfection. Throughout 2019, the treatment plant's biological process was optimized by SCRD operators. The effluent quality exceeds all wastewater regulation standards.
- A new treatment system and drainage field were installed for the [Canoe Road Community Wastewater System](#). This new system utilizes cocoa pod husks to treat the incoming raw sewage before it enters the disposal field.



Watermain Projects

- The 200 mm asbestos cement watermain on [Henry Road](#) between Russell Road and Reed Road was replaced with a 200 mm ductile iron watermain. This section is now connected to a higher pressure zone, improving service pressure and fire flows.
- The 200 mm steel watermain crossing Chapman Creek below the [Chapman Creek Bridge](#) was replaced with a new 200 mm HDPE watermain.
- The [South Pender Harbour](#) water system received \$2,049,915.01 in improvements. This included the installation of 2,283.6m of 200mm ductile iron water mains and 16 hydrants.
- The [North and Pender Harbour](#) water systems received \$1,557,333.45 in improvements. This included the installation of 1,332.5m of 200mm ductile iron water mains and 11 hydrants.

Our Water

Chapman Water System

Ninety percent of Sunshine Coast residents get their water from the Chapman Creek Watershed. This includes Chapman Lake and Edwards Lake.

Water from Chapman and Edwards Lakes travels for half a day, over 16 kilometers, down Chapman Creek before reaching the water treatment plants intake. Once the water is treated, it spreads out to 330 kilometers of water mains and 11 reservoirs.

Chapman Lake and Edwards Lake are located in the traditional territory of the *shíshálh* Nation. A dam at each lake stores water for the dry summer season when Chapman Creek is low, water leaving the lake is controlled to ensure flow needs are met for the environmental needs (salmon spawning) and for consumption. In 1995, the Tetrahedron Provincial Park was formed to protect these lakes and their watersheds.

Snow Surveys

The SCRCD carries out snow surveys in the Tetrahedron Provincial Park at the end of each snow month. Typically, surveys are conducted in February, March, April and May. The snow depth is manually measured and recorded at two locations that were set by the Provincial Snow Survey Program: the Chapman and Edwards Snow Courses. In addition, the Snow Water Equivalent (SWE) is also calculated. This is a measure of the volume of water contained in an area of snow.

Customarily, almost all of the season's snowpack has accumulated by April 1st. Data gained from the snow surveys enables the SCRCD to make water management decisions through forecasting the amount of snow meltwater in the upper Chapman Creek watershed and the rate of snow melt. Furthermore, a weather station located in the Chapman Creek watershed enables the SCRCD to compare current and past data for more informed predictions. Data from this weather station exhibits how temperature and rainfall affect snow melt. These factors directly influence flow rates in Chapman Creek. Fluctuation in snow melt corresponds to the temperature changes from day to night. However, rain is the chief factor affecting the summer water supply.

Know Your Water

See where your drinking water comes from and learn what it takes to ensure it is safe and clean. Contact us for more information on upcoming tours of the Chapman Water Treatment Plant at infrastructure@scrd.ca or 604-885-6806.

Contact Us

Sunshine Coast Regional District
1975 Field Road Sechelt, BC
V0N 3A1

604-885-6800
Visit www.scrd.ca

