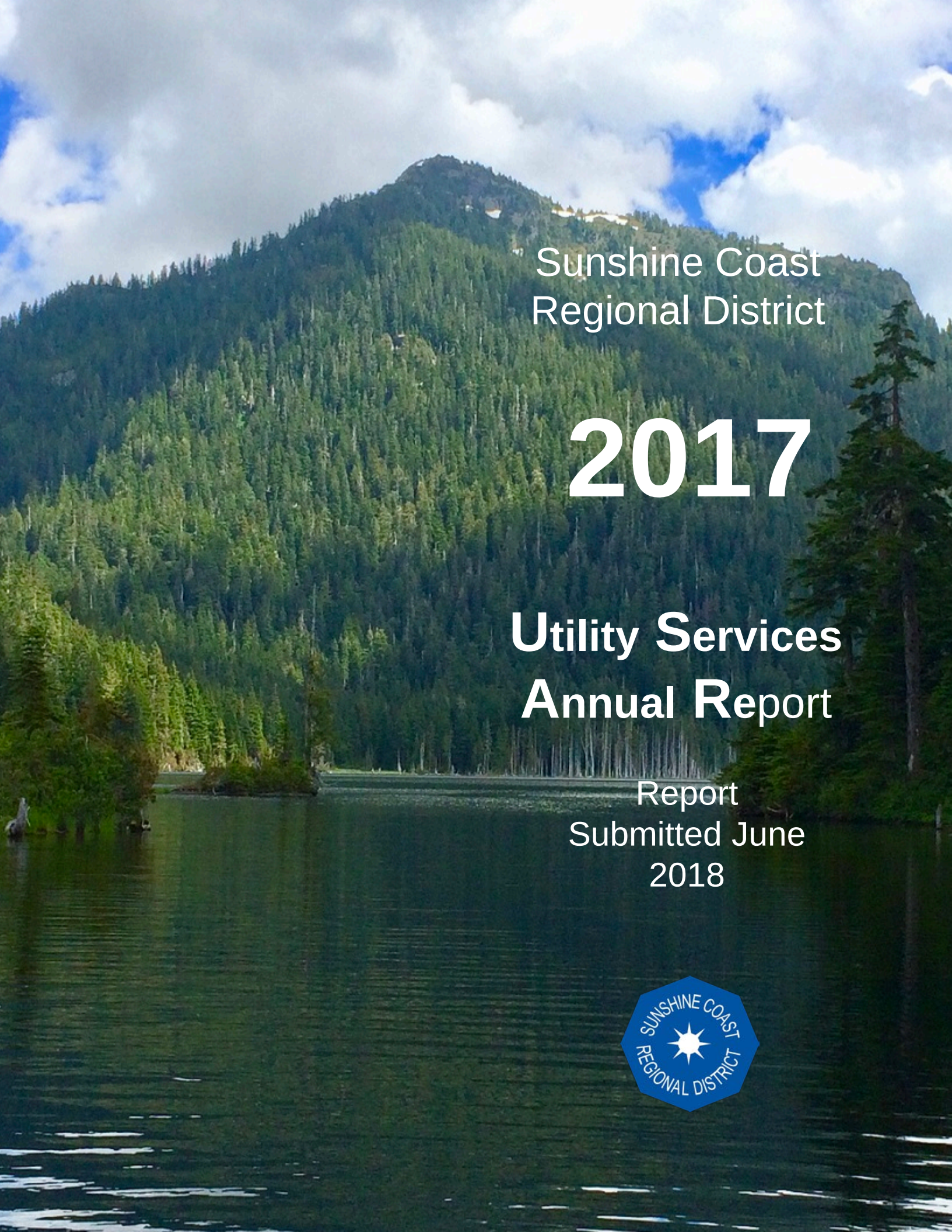


Sunshine Coast
Regional District

2017

Utility Services Annual Report

Report
Submitted June
2018

About Us

The Sunshine Coast Regional District (SCRD) provides water supply services to approximately 23,000 residents from Langdale to Earl's Cove, which are located within the traditional territories of the *shíshálh* and Skwxwu7mesh First Nations. This includes operations and maintenance of the Langdale, Soames Point, Granthams Landing, Eastbourne (Keats Island), Chapman / Gray Creek including the Chapman Creek Water Treatment Plant, the South Pender Harbour Water Treatment Plant , Cove Cay, Egmont and the North Pender Harbour Water Systems. These water supplies are also used for fire protection, industrial use and irrigation.

Chapman 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.

North Pender Harbour Water System is an independent system, operated and maintained by the SCRD since 2007. The sources 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.

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.

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 55 sites for a total of 1537 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 system.

QUALITY FIRST

Once again we are proud to present our 2017 Utility Services Annual Report covering the period between January 1, 2017 and December 31, 2017.

The SCRD is committed to delivering the highest quality drinking water possible. We remain vigilant in meeting the challenges of new regulations, source water protection, water conservation and community outreach and education while continuing to serve the needs of our customers.

We hope you find the information provided in this report informative and helpful.

Emergency Response Plans

The Sunshine Coast Regional District (SCRD) has Emergency Response Plans (ERP) for all of its water systems. Under the *Drinking Water Protection Act*, the SCRD ensures that the ERPs are updated and maintained to comply with the Vancouver Coastal Health Authority (VCH) and to conform to the BC Emergency Response Management System framework.

In 2017 the SCRD updated the ERPs for all of our water systems and submitted them to VCH where they were reviewed and approved.

ERPs are used in the event of an emergency within a water system and the ERP documents are readily available to trained water system operators and health officers.

ERPs provide the necessary actions to be taken during specific emergencies and following an emergency including notifying VCH.

Protecting Your Water

Well Protection Plans (WPP) are a requirement in the SCRD's Operating Permits as issued by Vancouver Coastal Health Authority.

In 2016, the SCRD developed a WPP for all well sources operated by the SCRD. The goal of the WPP is to improve the safety of drinking water systems for Langdale, Chaster, Soames, Granthams and Eastbourne (Keats Island) water supply sources. The WPP identified hazards that may threaten the quality of the groundwater supply source, ranked the hazards according to risk and developed actions to mitigate risks. The WPP is currently being implemented.

Where Does Our Water Come From?

Fifteen percent of Sunshine Coast residents get their water from groundwater or the lakes in the Egmont and Pender Harbour areas and wells on the South Coast. The other 85% get water from the Chapman Watershed, which includes Chapman Lake and Edwards Lake. Most of the Sunshine Coast is a dry ecosystem. These lakes are the exceptions in the wet forest zones.

They are located in the traditional territory of the *shíshálh* Nation. In 1978 the SCRD built a dam at Chapman Lake and one in 1991 at Edwards Lake to help store water for the dry summer season when Chapman Creek is low and sometimes dry. In 1995, the Tetrahedron Provincial Park was formed and protected these headwaters.

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

Regional Water Metering and Watermain Upgrades

Adopted in 2013, the Comprehensive Regional Water Plan outlines the actions needed for increasing water supply in combination with universal water metering to manage demand.

Water metering will help the SCRD and water users improve their leak detection abilities as well as better understand water consumption. Water metering is widely recognized as an industry best practice. Many cities and regional districts across Canada have already made the move towards metering. It is common for communities to realize a reduction in water consumption by 20% to 30% after universal metering.

Phase 3 is the final phase of meter installations. It involves installing water meters at every SCRD water user in the Sechelt area. The other electoral areas using SCRD water have already had meters installed between 2014 and 2017.

In 2017, close to 1000 private leaks were resolved saving over 2,300,000 litres of water per day.

In November 2016 an application for funding under the Clean Water and Wastewater Fund grant program was submitted.

It was announced in March 2017 that the SCRD was successful in receiving funding towards watermain upgrade projects in the North and South Pender Harbour water service areas. The total funding awarded was $3.3M.

This project is currently underway with an expected completion date of March 2019.

Water Customer Service

SCRD water customers can report water quality concerns by calling 604-885-6806. The SCRD makes every effort to provide timely follow-up.

Discolouration of water is the most common complaint. Activities such as maintenance of the distribution system, hydrant-use, construction and water main breaks, can cause water to turn brown, rust-like or cloudy. The discolouration is temporary and indicates sediment has been disturbed in the water main. Water clarity is quickly restored, but requires flushing of cold water taps. Normal conditions are typically achieved within 24 hours.

The SCRD works diligently to restore water clarity, however, some of these cases require extra time or strategies before this can be done. Cases involving aesthetic properties such as taste and odour can be more challenging to investigate since each person has a unique level of sensitivity. The SCRD will use water quality data from a location on private property which is closest to the service connection or from a nearby sampling station to determine the cause of the complaint.

SCRD staff value water quality and strive to provide excellent customer service while handling cases. Nevertheless, some matters, such as water quality concerns from private-side plumbing are beyond the SCRD's jurisdiction. If residents want to test water quality on private-side, and the impacts of internal plumbing systems, residents can contact local water testing labs.

SCRD water quality results are reported through the SCRD's website. Results can be found here, http://www.scrd.ca/Quality.

2017 Water Conservation Efforts

The goal of the SCRD's Water Conservation Program is to reduce the rate of drinking water consumption by promoting water efficient practices and technology thus reducing the impacts on local streams and groundwater aquifers, and deferring both the need for expensive new water supply, storage and treatment infrastructure

A few characteristics made the summer of 2017 unique:

- Snowpack: a good snowpack combined with precipitation meant a wet start to the summer
- Late drought: The fall rains were very late to start. Even when some rain started in late October, it took until mid-November for Chapman lake to fully recharge, the latest ever recorded.
- Environmental Flow Needs: The newly required minimum flows in Chapman Creek meant water was being released more quickly than before, resulting in using our accessible water 20 to 30 days quicker.
- Siphon for additional water: With the water situation becoming severe in October, the SCRD installed a short term siphon system at Chapman Lake to avoid running out of water.

Communications and Advertising

Effective communication with the community is important to increase awareness about the importance of water conservation, educate community members on the water system, and respond to inquiries. At every Stage of the Drought Management Plan, a media release, the SCRD web-site, social media channels, and three road-side signs are updated. At Stage 2, the daily water consumption charts and targets are added to the web-site and social media streams. At Stage 3 and 4, five additional sandwich board signs are placed along the highway and a targeted mail-out is sent to affected water users.

Outreach and education efforts include participation in community events as well as tours of the Water Treatment Plant.

The new water meters allowed the SCRD to help people learn about their water use and identify leaks on private properties. Hundreds of people received letters informing them of leaks and some spoke with SCRD staff about how to find and resolve these leaks. During 2017, close to 1000 private leaks were resolved saving over 2,300,000 litres of water per day going forward.

1. SCRD water use has decreased 4% between 2010 and 2017.

2. Peak daily demand, which is the day of the year when water use is the highest, has gone down by 22% between 2010 and 2017.

3. Under the *Water Sustainability Act*, the SCRD is legislatively required to ensure a flow of 200 litres per second in Chapman Creek for the environment.

PROJECTS

Drought and Climate Change

Climate change is decreasing summer precipitation and making the start of fall rains less predictable. Stage 4 (Severe) water restrictions were implemented in 2015 and 2017.

In 2017 an emergency siphon system was deployed to ensure the associated water supply could be maintained. The siphon system is designed as an emergency measure and cannot be relied on as a long term measure for an increased drawdown of the lake.

Chapman Lake Expansion Project

The goal of the Chapman Lake Supply Expansion project is to access five additional meters of water in Chapman Lake.

The current channel and weir allow access to three meters of the 30 meters deep lake. The project will create roughly 1 million additional cubic meters of water accessibility, roughly doubling the current Chapman Lake supply. This will provide additional water to support municipal supply, environmental flows for fish and ecosystems, and fire protection during periods of drought.

Estimated timeline:

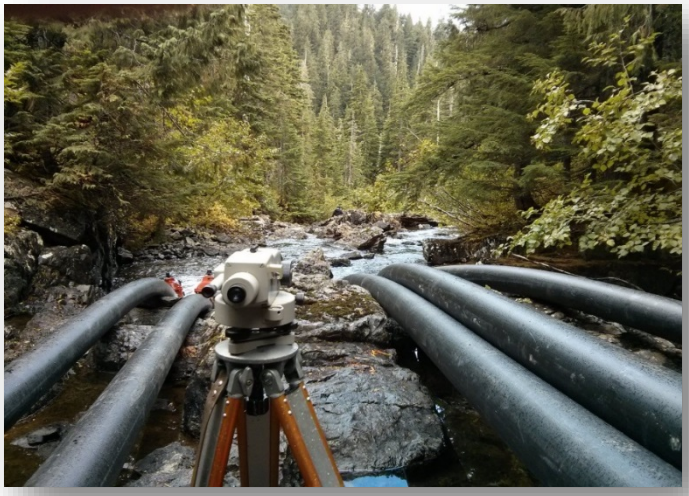
- Ministry of Environment and Climate Change Strategy (BC Parks) Legislative amendment to Tetrahedron Park: Spring 2019
- Park Use Permit (BC Parks) and Water License (Ministry of Forests, Lands, Natural Resource Operations and Rural Development): Spring 2019
- Outlet pipe construction: Summer 2019
- Commissioning: Fall 2019

Groundwater Investigation

The goal of the groundwater investigation project is to develop additional groundwater wells to significantly supplement the supply from Chapman Creek.

Four sites were identified with the highest probability of yielding a volume of water significant enough to justify development costs. The sites are located at Mahan Road, Bridge at Gray Creek, Soames Point, and Dusty Road.

In 2018 test wells will be drilled on the identified sites and subsequently tested for maximum yield, water quality and sustainable yield. Depending on these results, the SCRD could develop one or more production wells on one or more of these sites subject to meeting the licensing requirements under the Water Sustainability Act.



RAW WATER RESERVOIR

The development of a Raw Water Reservoir is recommended in the Comprehensive Regional Water Plan to address the Regional Water System's storage capacity deficit. The siting and design of this reservoir will require a complex, multi-phased project.

The Raw Water Reservoir is built upon the Comprehensive Regional Water Plan's elements to meet the community's water needs now and in the future.

In 2018, a consulting firm will be commissioned to conduct a Feasibility Study to assess multiple locations for suitability to construct a reservoir.

The study involves the investigation of a potential location for the raw water reservoir which includes site identification, preliminary engineering and costing.

WATER QUALITY MONITORING

SAMPLING

Each month, water samples are taken from various points throughout the water systems. These samples are tested for Total Coliforms and E.coli coliforms. Test results are sent to the SCRD Utility Services Division and Vancouver Coastal Health Office. The presence of Total Coliforms indicates bacterial contamination; E.coli coliforms indicate bacterial contamination from human or animal waste.

2017 RESULTS

In 2017, Vancouver Coastal Health (VCH) conducted annual inspections and the SCRD passed with no violations to the operating permits.

The SCRD also collected quarterly water samples for potability which includes most chemicals, minerals and trihalomethanes. More detailed results can be found on the SCRD website at www.scrd.ca/quality.

A total of 1537 coliform and E.coli samples were collected throughout the Sunshine Coast water systems. The frequency of monitoring samples exceeded the requirements for permit conditions and also met the Drinking Water Protection Regulations. At the Granthams Landing location two samples tested positive for the presence of coliform. As the water still had a suitable chlorine residual and no other parameters exceeded their standards, it is expected that these positive tests for coliform were caused by sampling errors.

Overall, the 2017 sampling results resulted in an excellent record of bacterial sampling.

2017 Water Quality Sampling Results

Sample Location	Samples Collected	Coliform Positives	E.coli Positives
Cove Cay	77	0	0
Eastbourne	125	0	0
Egmont	104	0	0
Chapman	636	0	0
Granthams Landing	54	2	0
North Pender Harbour	203	0	0
Soames	77	0	0
South Pender Harbour	182	0	0
Langdale	79	0	0
Total	**1537**	**2**	**0**

Comprehensive Regional Water Plan Initiatives

Four projects are outlined in the CRWP to address the water supply deficit. The first three projects focus on expanding supply in the Chapman water system while the fourth is intended to reduce water demand.

The CRWP reviewed several options and concluded that the following were the most feasible, cost effective, and had the least environmental impacts.

1. Chapman Lake Expansion Project
2. Groundwater Extraction
3. Raw Water Reservoir
4. Universal Water Metering

Contact Us

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