REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2024

Surfside
Water Service Area

June 2025

REGIONAL DISTRICT OF NANAIMO
Water & Utility Services Department
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REGIONAL DISTRICT OF NANAIMO

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1.0 Introduction

The following annual report describes the Surfside Water Service Area and summarizes the water quality and production data from 2024. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response & Contingency Plan, and the Cross Connection Control Program. This report is to be submitted to Island Health by the Spring of 2025.

2.0 Surfside Water Service Area

The Surfside Water Service Area was established in 1986 and comprises an area northwest of Qualicum Beach on Surfside Drive and part of McFeely Drive. There are 39 water service connections in the Surfside Water Service Area. The water source comes from two groundwater wells located nearby. The water source is chlorinated and pumped into the service area on-demand via a constant pressure system installed in 2023. A back-up generator is present at the pumphouse, should it be required. A map of the Surfside Water Service Area is provided in Appendix A for reference.

2.1 Groundwater Wells

Two groundwater production wells are present in the well field at 3547 West Island Highway, north of Qualicum Beach, B.C.

Well / Name	Well Depth	Wellhead Protection In Place	Treated/Untreated with Chlorine
#1	9.4 m	Yes	Treated
#2	9.8 m	Yes	Treated

2.2 Reservoirs

There is no water storage reservoir in the Surfside Water Service Area. Water supply is pumped into the system via a high efficiency constant pressure system.

2.3 Distribution System

The water distribution system in Surfside is summarized in the table below. Flushouts are present, but there are no fire hydrants in this system.

Watermain Material	Length of mains in Surfside Water System	Prevalence in Water Service Area
AC: 150mm or smaller AC: 200mm or larger	0.8 km none	72.5% n/a
PVC: 150mm or smaller PVC: 200mm or larger	0.006 km 0.3 km	0.5% 27%

Note: 'AC' is Asbestos-Concrete, 'PVC' is poly-vinylchloride (plastic)

3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. Notably, the chlorine residual levels are tested weekly to ensure the absence of bacterial regrowth in the watermains. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, Temperature, pH, Conductivity, Free Chlorine residual, Salinity, Turbidity, TDS
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Monthly-Quarterly (raw well water only)	Bureau Veritas	Monthly- Chloride Quarterly- Chloride, Sodium, Conductivity, TDS
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw well water, including T-Ammonia
Annual System Water Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system, including T-Ammonia

4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality test reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca/surfside. Tables of water quality testing results for both the source water and the distribution system are provided in Appendix B of this report.

Increasing saltwater intrusion was recently identified in the aquifer that supplies drinking water to the Surfside water service area. The RDN is enforcing regular Stage 4 watering restrictions to encourage conservation and pursuing long term solutions to the water quality issue in this area.

5.0 Water Quality Inquiries and Complaints

Very few water quality complaints and inquiries were received from the Surfside water service area. Most inquiries were related to water restrictions, long-term water quality, and high water bills that were often due to leaks.

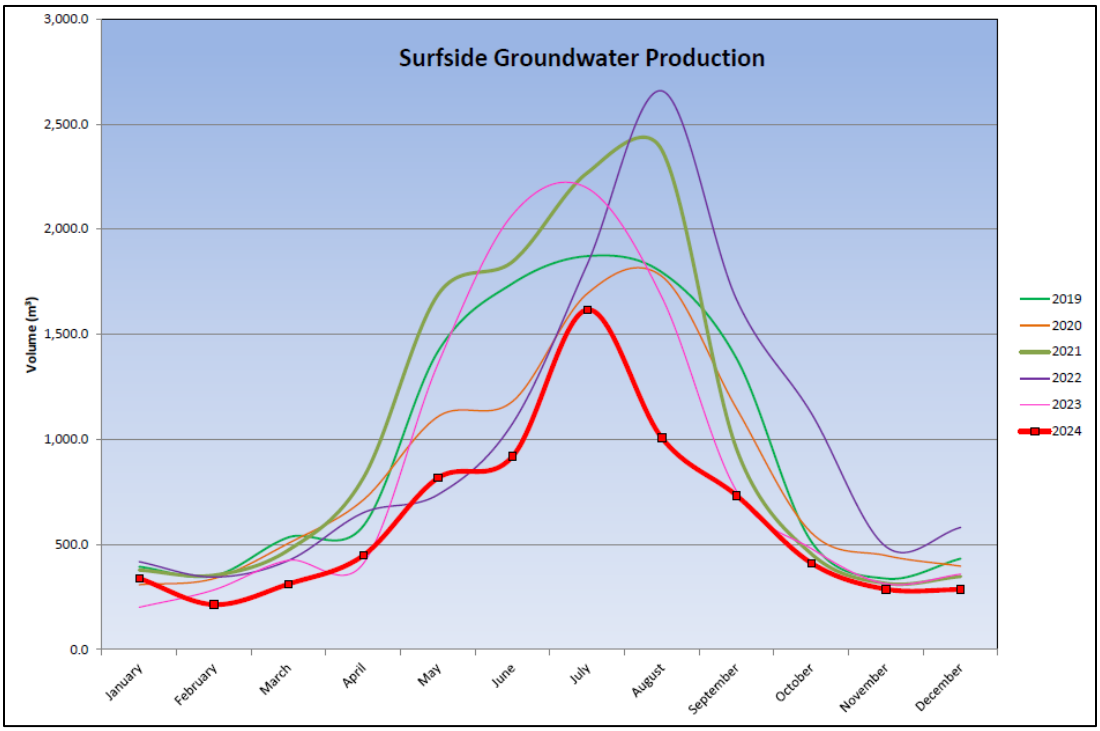
Surfside Pumphouse

A summary of the water system incidents in 2024 is given in the table below.

Activity in 2024	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	None	None
Equipment Malfunction	None	None
Water Main Breaks	None	None
Pump Failures	None	None

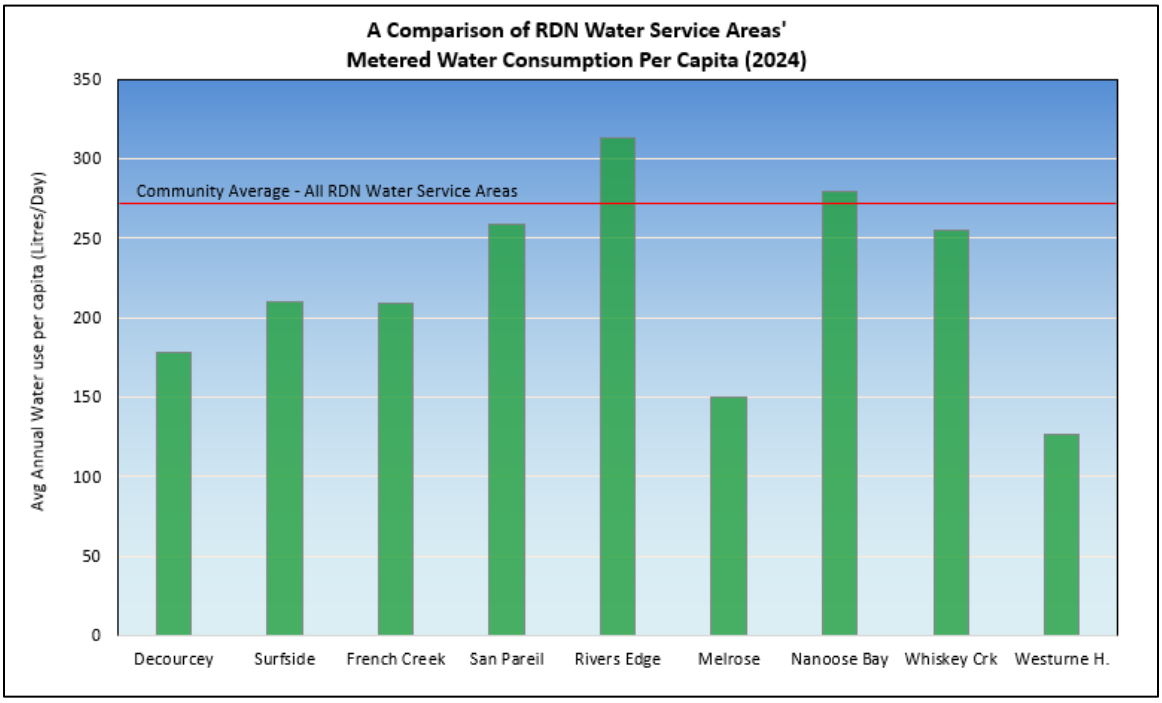
6.0 Groundwater Production and Consumption

Monthly groundwater production in the Surfside Water Service Area for the past 6 years is shown in the chart below.



Consumption

In the fall/winter of 2023/2024, the average usage per home in the Surfside Water Service Area was 0.32 cubic metres per day (70 imperial gallons). In the summer of 2024, the average water usage was 0.88 cubic metres per day (194 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 210 L/day (based on 2.4 people/household). This consumption is ***22% less*** than the average of all the other RDN water systems of 270 L/day/capita in 2024.



7.0 Maintenance Program

A weekly pump station inspection is carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the spring. There are no fire hydrants in this water service area due to insufficient supply and capacity for fire flows. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8.0 Operator Certification

The Regional District Water & Utility Services staff is comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified operators. The operators receive ongoing training and certification in:

- ✓ Water Treatment
- ✓ Water Distribution
- ✓ Wastewater Collection
- ✓ Cross Connection Control
- ✓ Asbestos Awareness
- ✓ Chlorine Handling
- ✓ WHMIS (Workplace Hazardous Material Information System)
- ✓ TDG (Transportation of Dangerous Goods
- ✓ Confined Space Awareness
- ✓ Fall Protection
- ✓ First Aid
- ✓ Silica Awareness
- ✓ Cyber Security

9.0 Water Service Area Projects

9.1 2024 Completed Studies & Projects

- Began planning water quality improvement project;
- Corresponded with residents regarding water conservation;
- Completed irrigation checks for high water users;
- Counselled residents regarding water leak repairs and bill adjustments;
- Enforced outdoor watering restrictions during summer months;
- Continued the 2020-2030 Water Conservation Plan;
- Followed Cross Connection Control program to reduce backflow prevention risks;
- Completed regular watermain flushing and hydrant maintenance;
- Continued valve maintenance program; and
- Maintained a high level of water quality.

9.2 2025 Proposed Projects & Upgrades

- Completed a review of potential new well sites for upcoming water quality improvement project;
- Plan public engagement for well drilling funding;
- Hach equipment service and calibrations;
- Install smart meters throughout service area;
- Complete irrigation checks for high water users;
- Continue watermain flushing program;
- Continue valve maintenance program;
- Continue the 2020-2030 DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

10.0 Emergency Response & Contingency Plan

The Regional District Emergency Response & Contingency Plan (ERCP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, pump failure, and drought management. The ERCP was reviewed and updated in 2024, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERCP is also attached to this report in Appendix C.

Waterfront access from Surfside Drive

11.0 Supply Security

The RDN continues to effectively manage water supply in its service areas in response to ongoing demand and the effects of climate change. Most RDN water service areas are unlikely to expand, so growth in demand is not expected. Initiatives that provide resiliency for the groundwater sources that serve residents remain a high priority. Reservoir capacity and redundancy are reviewed with regards to water storage during periods of drought, and water from backup sources is available to be delivered in the case of an emergency. Groundwater quality is regularly tested in all RDN water service areas. The aquifers within the regional district are monitored through the RDN's Drinking Water and Watershed Protection (DWWP) program. The most sustainable way to protect water supply is through demand management (conservation), which is promoted through outreach and stewardship initiatives provided by the RDN's Team WaterSmart , as well as the RDN Water Service Area's Water Conservation Plan 2020-2030. Rebates for well water testing, water smart landscaping, and rainwater harvesting further assist RDN residents to reduce water usage in high demand seasons. A tiered system for water rates (introduced in 2023) helps promote conservation by rewarding low water users with reduced rates and encouraging high water users to seek ways to use less. Additional planning and preparation initiatives will be introduced in the future to support water supply security.

12.0 Cross Connection Control (CCC)

The RDN's Cross Connection Control Program was put in place to protect the public health by reducing the risk of contaminants flowing back into the public water supply. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

The RDN's Cross Connection Control Program addresses cross connection threats through operating policies and procedures, as well as assisting customers with backflow preventer selection, installation, testing, maintenance and reporting. The program receives its authority from *RDN Cross Connection Control Regulation Bylaw No. 1788*, and the *British Columbia Building Code*, Part 7, which requires that potable water be protected from contamination. Additionally, a webpage has been established at https://rdn.bc.ca/cross-connection-control-program to educate RDN water service customers about cross connection hazards, and lists the relevant links to current standards and resources.

Two of the RDN's water system operators are certified backflow assembly testers through the British Columbia Water & Waste Association (BCWWA), and one operator is additionally certified as a Cross Connection Control Inspector.

13.0 Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators.

Future infrastructure upgrades will see RDN water systems located on segregated networks to limit the vulnerability from cybersecurity threats. All RDN employees are required to regularly complete extensive training on cyber security awareness.

14.0 Closing

An annual report for 2025 will be prepared and submitted to Island Health in the Spring of 2026. Annual reports are also available on the RDN website: www.rdn.bc.ca/surfside.

Driveway to Surfside Well Site

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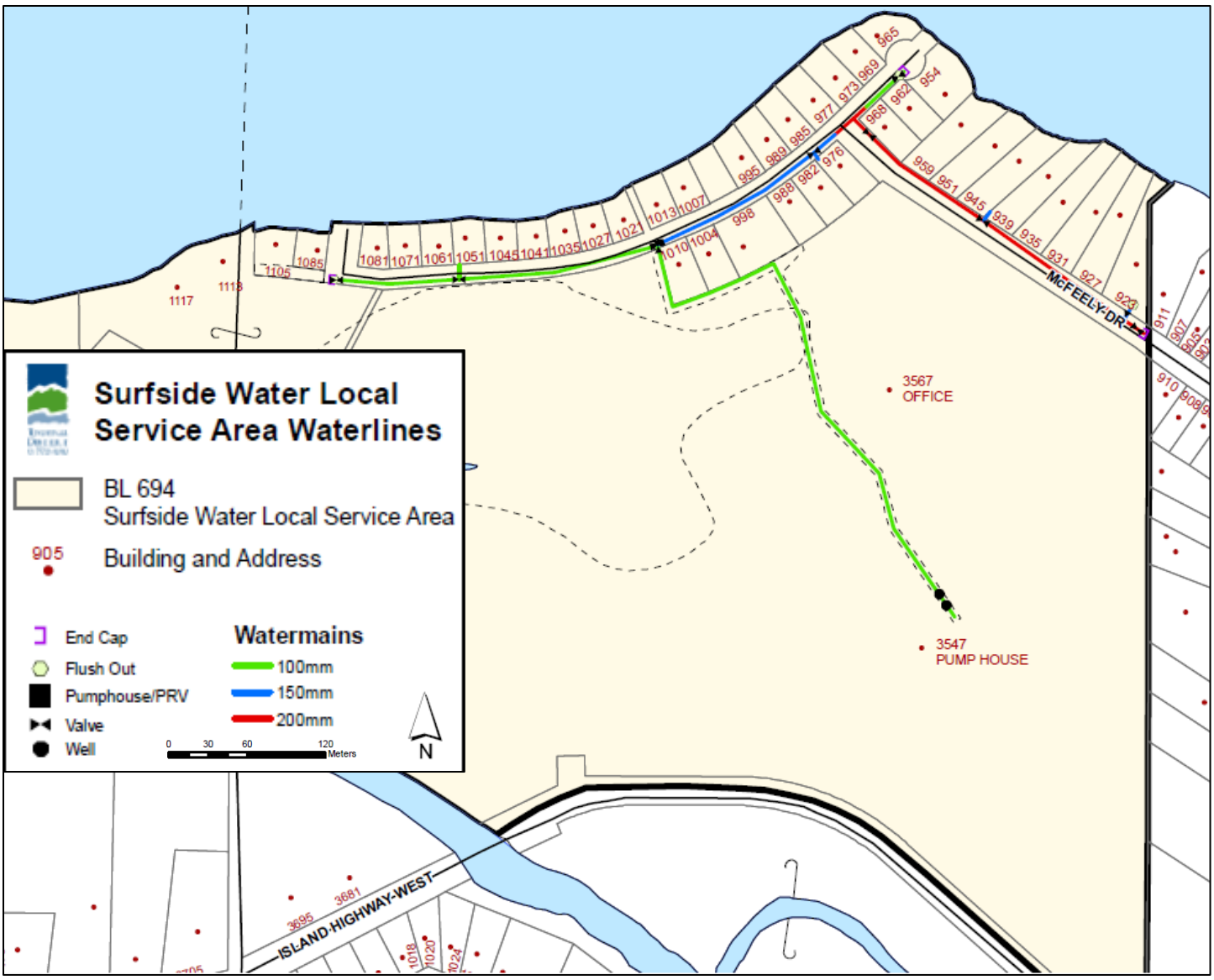
APPENDIX A

MAP OF SURFSIDE WATER SERVICE AREA



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APPENDIX B

WATER QUALITY TESTING RESULTS

SURFSIDE WATER SERVICE AREA

Facility Location: Qualicum Beach

Facility Information: Facility Type: 15-300 connections

Facility Sampling History:

Site Name	Date Collected	Total Coliform	Total E. Coli
1105 Surfside Dr	3-Jan-2024	LT1	LT1
962 Surfside Dr	24-Jan-2024	LT1	LT1
1105 Surfside Dr	6-Feb-2024	LT1	LT1
923 McFeely	14-Feb-2024	LT1	LT1
923 McFeely	21-Feb-2024	LT1	LT1
1105 Surfside	4-Mar-2024	LT1	LT1
923 McFeely	19-Mar-2024	LT1	LT1
1105 Surfside	9-Apr-2024	LT1	LT1
923 McFeely	16-Apr-2024	LT1	LT1
923 McFeely	24-Apr-2024	LT1	LT1
962 Surfside	29-Apr-2024	LT1	LT1
1105 Surfside	8-May-2024	LT1	LT1
923 McFeely	14-May-2024	LT1	LT1
962 Surfside	21-May-2024	LT1	LT1
1105 Surfside	5-Jun-2024	LT1	LT1
923 McFeely	17-Jun-2024	LT1	LT1
962 Surfside	17-Jun-2024	LT1	LT1
1105 Surfside	2-Jul-2024	LT1	LT1
923 McFeely	9-Jul-2024	LT1	LT1
962 Surfside	17-Jul-2024	LT1	LT1
1105 Surfside	6-Aug-2024	LT1	LT1
923 McFeely	13-Aug-2024	LT1	LT1
962 Surfside	21-Aug-2024	LT1	LT1
1105 Surfside	4-Sep-2024	LT1	LT1
923 McFeely	11-Sep-2024	LT1	LT1
962 Surfside	16-Sep-2024	LT1	LT1
1105 Surfside	2-Oct-2024	LT1	LT1
923 McFeely	9-Oct-2024	LT1	LT1
962 Surfside	16-Oct-2024	LT1	LT1
1105 Surfside	6-Nov-2024	LT1	LT1
923 McFeely	25-Nov-2024	LT1	LT1

Site Name	Date Collected	Total Coliform	Total E. Coli
962 Surfside	26-Nov-2024	LT1	LT1
1105 Surfside	4-Dec-2024	LT1	LT1
923 McFeely	9-Dec-2024	QRWRT	QRWRT
962 Surfside	17-Dec-2024	LT1	LT1

Interpreting Sample Reports

At Island Health, the results of drinking water sampling are reported using the following coding system:

- LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- QRWRT – Sample exceeded 30 hours from time of collection, results may not be valid. No written report will be issued by Island Health, and only a qualitative result will be reported by telephone when test is completed.