Village of New Denver

2025 Annual Water Report

Compiled by Water System Operator:
Keith Macaulay EOCP #9514
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Introduction

The annual report covers the period from January 1, 2025 to December 31, 2025. The report aims to convey information to residents regarding the overall operation of the municipal water system and describe the Village's approach to the operation and maintenance of the water system.

This report has been published to meet the requirement for water suppliers to produce an annual report on water quality as per Section 15 of the Drinking Water Protection Act and Section 11 of the Drinking Water Protection Regulation, and to comply with the conditions on the Permit to Operate.

The Village of New Denver, from now on referred to as "the Village", operates Facility Number 0210710 under the Permit to Operate issued by Interior Health. To validate the Permit to Operate, the Village must comply with the following conditions;

Permit to Operate Requirements

1. To provide a protection plan for each water source,
2. To provide a certified operator to operate the system,
3. To operate according to our Water Quality Monitoring Program,
4. To operate according to our Cross Connection Control Program,
5. To provide long term plans for source and distribution system,
6. To review and update the Emergency Response Plan annually,
7. To provide monthly reports to the Interior Health Authority
8. To submit an annual report summary to the public and Interior Health Authority.

Websites

For more detailed information on drinking water regulations, the Village recommends viewing the following websites:

Health Canada

http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/index-eng.php

Interior Health Authority

http://www.interiorhealth.ca/YourEnvironment/DrinkingWater/Pages/default.aspx

Water Supply System Overview

Pure, untreated, potable water is supplied to New Denver by two municipal wells.

Wells #3 & 4 are located north of the dike at the south end of Kootenay Street and were constructed in 2023. #3 has a total depth of 55.3m while #4 is 54.5m and capacities are 1362 L/min and 1326 L/min. Both wells have new pumps running through pit-less adapters that took over the supply of water in 2025.

The distribution system consists of various diameters of **D**uctile **I**ron (DI) and **P**oly-**V**inyl **C**hloride (PVC) and Steel pipes. A bolted steel reservoir, located on the high end of the distribution system, was completed on March 1st, 2010 and has a capacity of 1230 m3 or 1,230,000 L. Water is pumped from the wells directly into the water distribution system, filling the reservoir while simultaneously supplying required demand. There are 35 fire hydrants with 150mm leads located throughout the Village.

In 2022 a boundary extension saw the amalgamation of the Village system with the Denver Siding system which had previously been maintained by the RDCK and was fed by 3 creeks. This extension added an existing two chamber, inground, concrete reservoir with a capacity of 36,000 USG, 7 fire hydrants and 22 service connections. Pipe is comprised of **P**oly-**V**inyl **C**hloride (PVC), **H**igh **D**ensity **P**olyethylene (HDPE), Steel and **A**sbestos **C**ement (AC). A pumphouse was constructed within the New Denver reservoir enclosure that houses two pumps rated at 53.3 GPM with a generator for back-up power. Water is pumped directly from the New Denver system into the Siding system. Decommissioning of the old intakes was carried out in 2023.

Water System Operators

The Village currently operates a Class I Water Distribution System. Operators of this system must be certified through the Environmental Operators Certification Program (EOCP). Our two water system operators are members in good standing and stay current by obtaining the necessary yearly training. Keith Macaulay holds a Water Distribution Level 1 certification. Robby James holds a Small Water Systems certification while working towards his Level 1. Having two qualified operators allows for 24/7 coverage in the event of emergencies or absenteeism. Continuing education ensures that staff have the knowledge required to safely operate the system and stay up to date with technological advancements.

Cross Connection Control Program Summary

Cross connections are a concern to water suppliers because they may be a source for system contamination. When a water distribution main experiences a reduction in pressure or the pressure applied at a connection exceeds the system pressure, backflow can occur, potentially contaminating the system. Potential sources identified as "high risk" have been isolated from the main supply system with the installation of back-flow preventers to prevent potential cross contamination. Ideally, all private and commercial connections to the water distribution system should have a back-flow preventer but monetary constraints and the amount of infrastructure work it would take to accomplish this task is a challenge for all small communities. Currently the Village is requiring backflow prevention devices be installed on all new connections at the point of entry.

Distribution System Improvement Plan Summary

The Village accomplished many upgrades to its system over the three years. Two new wells were drilled in the vicinity of the #1 pumphouse. Those wells were brought online in 2025 to replace both existing Village wells. A pumphouse was constructed in 2024 that connected the new wells to the system via pit-less adapters. This allows the building to not sit directly over the wells making service and maintenance far simpler. Supply issues with several integral components delayed the project but thoughtful planning allowed for the addition of another new fire hydrant during construction to better service the area. Backup power in the event of an outage is provided by a diesel-powered generator with automatic switch over capabilities. Wells #1 and 2 were decommissioned by removing the pumps and filling the wells with a combination of clean fill and Bentonite before the buildings were removed, followed by the removal of the system tie in points.

Plans and engineering are underway to replace the 6" main under the bridge in 2026. Water service to the "Orchard" section of town will be maintained via an overland pipe that connects to the hydrants on each side of the bridge, installed in 2023. Plans are also underway for the installation of blow-offs for two of the dead ends in the system as well as upgrades to the Siding system.

Source Protection Summary

The Village commissioned a study on well head protection in 1998 and a storm water runoff impact study in 2004. As a result, the Village has adopted a Well and Ground Water Protection Plan which is designed to prevent contamination of our drinking water sources. A new program is currently being developed and will incorporate scheduled yearly comprehensive water sampling and well level monitoring devices. Data logging capabilities in the new pumphouse will be used to develop a baseline and to record changes in the aquifer quality and level.

Emergency Response Plan Summary

The revised Water Distribution Emergency Response Plan for the Village has been completed as of January 2026, and features an updated contact list, updated emergency procedures, disinfection procedures, a water system incident report program and public advisories.

Monthly Reports and Trends Summary

Total water use for the year 2025 was 36.5 Million USG or 138 Million Litres.
Total water use for the year 2024 was 34.3 Million USG or 130 Million Litres.
Total water use for the year 2023 was 41.3 Million USG or 153 Million Litres.

2025 Water Consumption in US Gallons/Month

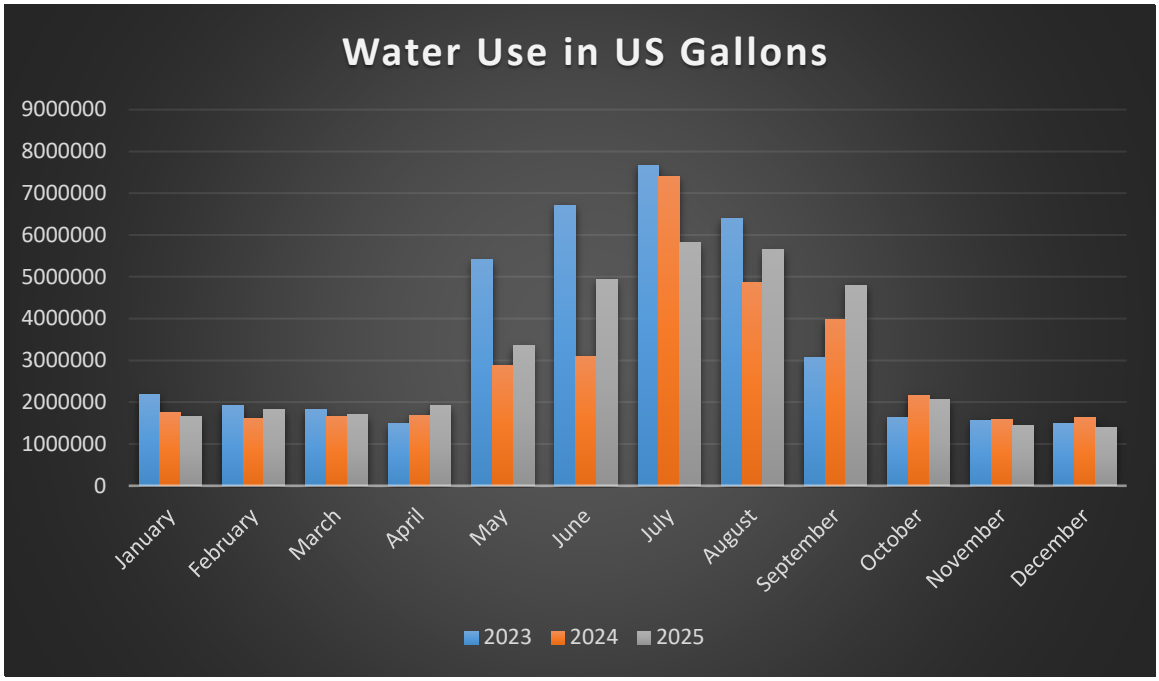
January	February	March	April	May	June
1,668,512	1,834,686	1,696,856	1,909,131	3,346,833	4,944,254

July	August	September	October	November	December
5,814,587	5,648,651	4,802,116	2,062,754	1,436,387	1,393,686

Water Use

"In 2021, the average Canadian daily domestic use of fresh water per capita was 401 litres."
-Environment Canada

In comparison, the average daily water use per capita (using an average population of 750 residents, accounting for summer time visitors) at the Village is 474 litres. Note that this figure includes residential, commercial and industrial use as well as potential unknown leakage. Also of note is the increase in consumption since the amalgamation with the Denver Siding which occurred in mid 2022.



Water Quality Monitoring Summary

As a requirement of the Permit to Operate and the Drinking Water Protection Regulation, the Village is required to have a Water Quality Monitoring Program. The components of this testing program are:

1. Monitor the drinking water source, the water in its system and the water it delivers.
2. Monitor the fore-mentioned, not less than 4 times per month, for both Total Coliform bacteria and E. Coli.
3. Have the analyses required for monitoring carried out by an accredited laboratory.
4. Send monthly reports to the Public Health Officer that summarize the results and daily water consumption totals.

These tests are conducted on a weekly basis from two different sampling sites. One sample is taken from New Denver while another is taken from the Denver Siding. Water samples are collected alternately from the Village Office, the Nikkei Internment Memorial Centre, the Slocan Community Health Centre and the new, year-round public washroom facility in Centennial Park.. These sites provide representative, "end of line" samples for each sector in the distribution system. Denver Siding samples are taken from private residences. Water samples are sent to Passmore Laboratories for testing. Passmore Laboratories then send the water sample reports to the Village and to IHA to be reviewed for anomalies. The Village compiles the results and in addition to other pertinent information, then sends a monthly report to IHA.

Microbiological parameters for test results have been established by Health Canada in the form of a maximum allowable concentration (MAC). Each MAC has been designed to safeguard human health and is based on projecting lifelong consumption of drinking water that contains the substances at the maximum concentration level. These MAC's are identified in Schedule A of the Drinking Water Protection Regulation as follows:

Escherichia coli (*E. coli*)	MAC: None detectable per 100 mL
Total coliforms	No consecutive samples (100mL) or no more than 10% of samples should contain total coliforms

Comprehensive Testing

In addition to testing for E.Coli and Coliforms the Village has, over the years, done some in depth chemical analysis of the water composition. This analysis is now being completed every other year by Caro Laboratories, and the results are available on the Village's website.

System Maintenance

Several items are addressed annually to ensure the supply system functions properly and problems can be addressed before they become major defects. This is known as preventative maintenance. Some of these items include:

- Fire hydrants are operated to ensure proper function of the valves and components. Overhauls are done every two years.
- Hydrants are also an important tool to flush the water system which helps remove any sediment or particles that may be adhered to the pipe walls.
- The backup generators are serviced annually and run regularly to ensure proper operation.
- The reservoirs are checked on a daily basis and a visual internal inspection is done monthly. A thorough reservoir inspection, including the use of an ROV is being completed every two years by a contractor. Reservoir cleaning is conducted as required.
- Valves in the system are exercised yearly to improve valve reliability, reduce water loss and ensure system isolation capability.
- Certain backflow preventers must be serviced annually by a certified inspector and documented for compliance.
- Eight curb stop valves were replaced in 2025 due to condition and leaks were repaired in the process.

Future Equipment Replacement Costs

The parts and equipment involved in the system includes the pipes, pumps, pump houses, valves, electronic monitoring equipment, meters, fire hydrants, and water reservoirs. These components are designed to have a relatively long life cycle but environmental factors can make a difference.

Most of the Villages water system was replaced in 1976 and has been periodically checked for degradation of its parts. Soil conditions in this area are not overly acidic and conducive to corrosion therefore the water system infrastructure is in relatively good shape. In consideration of the overall age of the system however we have made inquiries into how much replacements would be.

Following is a list of the estimated costs for replacing parts and equipment involved in the system. It is important to note that the estimates do not include fittings like elbows, T- Joints, bedding sand, rental of construction equipment/vehicles, labour contracting or inflation.

Estimated Material Cost For System Replacement

EQUIPMENT TYPE	UNITS	COST	VALUE
6 Inch Pipes	4700m	$300	$1,410,000
8 Inch Pipes	2400m	$500	$1,200,000
6 Inch Gate Valves	105	$1500	$157,500
8 Inch Gate Valves	29	$2500	$72,500
Fire Hydrants	35	$5500	$192,500
Water Reservoir	2	$800,000	$800,000
Pumps	4	$10,000	$40,000
Meters	2	$5000	$10,000
Electronic Equip./Gensets		$230,000	$230,000
		Total Estimate	**$4,142,500**

Anomolies/Issues in 2025

Soon after the commissioning of the new pumphouse in June, the Village experienced a power outage. A component designed to protect the pumps prevented the system from switching back from generator power to BC Hydro. Since the outage occurred on a weekend followed by a statutory holiday, the incident went unnoticed until two days later when residents found little to no available water in the upper part of town. The Emergency Response Plan was activated and a Boil Water Notice was invoked due to increased turbidity. The issue was resolved with the assistance of an electrician, the reservoirs were refilled and samples were taken for testing. The tests came back with a negative result for any issues and Interior Health removed the order.

Every second year, comprehensive inspections are made to both reservoirs. During these inspections an anomaly was discovered in the Denver Siding reservoir. An ROV that had been deployed to perform a visual inspection of the inside of the reservoir encountered a substance that was stirred and instantly dispersed in the western chamber. The reservoir was isolated immediately, before the substance could enter the distribution system. Interior Health was contacted, samples were taken to the Passmore Labs, and a preventative Boil Water Notice was issued. The system functioned using the eastern chamber while the impacted chamber was drained, disinfected and flushed. Samples were taken prior

to returning the reservoir to full capacity. At no point was there a positive test result and after conferring with Interior Health, the water quality notice was removed.

In August we had a test on the Denver Siding section of the system come back with a positive test of one total coliforms, while the allowable concentration is zero. A Boil Water Notice was issued before extensive flushing and reservoir disinfection curtailed the issue after two attempts, yet the problem returned. After 2 weeks of repeated rounds of flushing and several tests, water quality was returned. The notice remains for the Siding as a preventative measure until we can establish an annual chlorination period and system upgrades are performed.