



Regional District of Central Kootenay
WATER SERVICES COMMITTEE
Open Meeting Agenda

Date: Wednesday, April 2, 2025
Time: 1:00 pm
Location: Hybrid Model - In-person and Remote

Directors will have the opportunity to participate in the meeting electronically. Proceedings are open to the public.

Pages

1. ZOOM REMOTE MEETING INFO

To promote openness, transparency and provide accessibility to the public we provide the ability to attend all RDCK meetings in-person or remote (hybrid model).

Meeting Time:

1:00 pm PST

Join by Video:

<https://rdck-bc-ca.zoom.us/j/94251587997?pwd=lcttqVxsmjwxAZTmptO2CWlt27wI.1>

Join by Phone:

833 958 1088 Canada Toll-free

*6 to unmute or mute

*9 to raise or lower your hand

Meeting ID: 942 5158 7997

Passcode: 285704

In-Person Location: RDCK Boardroom, 202 Lakeside Drive, Nelson, BC

2. CALL TO ORDER & WELCOME

Chair Newell to call the meeting to order at _____ p.m.

2.1	TRADITIONAL LANDS ACKNOWLEDGEMENT STATEMENT	
	We acknowledge and respect the Indigenous peoples within whose traditional lands we are meeting today.	
2.2	ADOPTION OF THE AGENDA	
	RECOMMENDATION: The agenda for the April 2, 2025 Water Services Committee meeting be adopted as circulated.	
2.3	RECEIPT OF MINUTES	4 - 9
	The February 12, 2025 Water Services Committee minutes, have been received.	
3.	WATER CONSUMPTION REPORT	10 - 66
	The Committee Report from Chris Gainham, Utility Services Manager providing a high-level summary of the RDCK 2019–2023 Water Consumption Report and highlighting its alignment with the goals and action items identified in the 2019 RDCK Drinking Water Conservation Plan, has been received.	
4.	CRESTON ALTERNATE WATER SUPPLY FEASIBILITY STUDY	
	Chris Gainham, Utility Services Manager will provide a verbal report on the the Creston Alternate Water Supply Feasibility Study.	
5.	2025 WATER RATES & PARCEL TAX SUMMARY	67
	Chris Gainham, Utility Services Manager will provide a verbal report on the 2025 Water Rates & Parcel Tax Summary. The Utility Rate Summary Sheet has been received.	
6.	OPERATIONS, MAINTENANCE AND CAPITAL UPDATE	68 - 74
	The Committee Report from Alexandra Divlakovski, Water Operations Manager providing an update and highlighting the larger maintenance and capital projects completed to date in 2024/2025, has been received.	
7.	WATER SYSTEM EXPRESSION OF INTEREST UPDATE	
	Chris Gainham, Utility Services Manager will provide a verbal update on current Water System Expression of Interests.	
8.	WATER COMMISSION MEETING MINUTES	
	The following meeting minutes have been received:	
8.1	Arrow Creek Water Treatment and Supply Commission: Meeting Minutes, February 10, 2025	75 - 78
8.2	Ymir Water Commission of Management: Meeting Minutes, March 17, 2025	79 - 81
9.	CORRESPONDENCE FOR RECEIPT	

The following information has been received:

9.1 Interior Health Meeting Minutes, March 13, 2025

82 - 83

10. PUBLIC TIME

The Chair will call for questions from the public and members of the media at _____ p.m.

11. ADJOURNMENT

RECOMMENDATION:

The Water Services Committee meeting adjourn at _____ a.m./p.m.



WATER SERVICES COMMITTEE

Open Meeting **MINUTES**

A Water Services Committee meeting was held on Wednesday, February 12 at 9:00 a.m. PST / 10:00 a.m. MST through a hybrid meeting model.

Quorum was maintained throughout the meeting.

ELECTED OFFICIALS	Director G. Jackman	Area A	
PRESENT:	Director R. Tierney	Area B	
	Director K. Vandenberghe	Area C	
	Director A. Watson	Area D	
	Director C. Graham	Area E	
	Director T. Newell	Area F (2025 Committee Chair)	In-Person
	Director H. Cunningham	Area G	In-Person
	Director W. Popoff	Area H	In-Person
	Director H. Hanegraaf	Area J	
	Director T. Weatherhead	Area K	
	Councillor D. Dumas	Town of Creston	
STAFF PRESENT:	U. Wolf	GM – Environmental Services	In-Person
	C. Gainham	Utility Services Manager	In-Person
	A. Divlakovski	Water Operations Manager	In-Person
	E. Clark	Meeting Coordinator	In-Person

1. **ZOOM REMOTE MEETING INFO**

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Meeting Time:

9:00 a.m. PST / 10:00 a.m. MST

Join by Video:

<https://rdck-bcca.zoom.us/j/94251587997?pwd=lcttqVxsmjwxAZTmptO2CWLt27wICl.1>

Meeting ID: 942 5158 7997

Passcode: 285704

Dial by your location

- 833 955 1088 Canada Toll-free

In-Person Location: RDCK Board Room, 202 Lakeside Drive, Nelson, BC

2. CALL TO ORDER & WELCOME

General Manager Wolf assumed the chair and called the meeting to order at 9:02 a.m. PST.

3. ELECTION OF 2025 COMMITTEE CHAIR

3.1 Call for Nominations (3 Times)

General Manager Wolf called for nominations a first time.

Director Popoff nominated Director Newell.

General Manager Wolf called for nominations a second and third time.

3.2 Opportunity for Candidates to Address the Committee

No address.

3.3 Vote by Secret Ballot

No vote.

3.4 Declaration of Elected or Acclaimed Chair

General Manager Wolf declared Director Newell as acclaimed chair of the Water Services Committee.

3.5 Destroy Ballots

No ballots.

4. CHAIRS ADDRESS

Chair Newell thanked the Committee for the opportunity to be Chair for another year.

5. COMMENCEMENT OF REGULAR MEETING

The Water Service Committee Chair assumes the chair.

5.1 Traditional Lands Acknowledgement Statement

We acknowledge and respect the indigenous peoples within whose traditional lands we are meeting today.

5.2 Adoption of the Agenda

Moved and seconded,
And resolved that:

The Agenda for the February 12, 2025 Water Services Committee meeting be adopted as circulated, with the addition of the following:

Item 10. s.– Service S252: Water Utility-Area K (Burton)

Carried

5.3 Receipt of Minutes

The December 4, 2024 Water Services Committee minutes, have been received.

6. CRESTON ALTERNATIVE WATER SUPPLY STUDY PROJECT UPDATE

Chris Gainham, Utility Services Manager provided a verbal update on the Creston Alternative Water Supply Study Project.

Below is a summary of the report:

- *A Stakeholder Information Session was held at the Creston and District Community Complex on November 7th 2024.*
- *The Information Session included presentation boards illustrating a map of water licences and points of diversion (for both groundwater and surface water points) in the Creston Valley and a board illustrating calculated ultimate irrigation demands, proposed infrastructure, including intake from the Kootenay River, reservoir storage and transmission main routing for a proposed separate agricultural/irrigation water system.*
- *RDCK Staff and Associated Engineering Consultants delivered a presentation that included a project background and study approach to attendees (attendees included agricultural producers, elected officials and provincial staff) and fielded questions from the group.*
- *Since this meeting we have modified the infrastructure routing options based on supplied information from stakeholders regarding routing conflicts and opportunities.*
- *The funding for the project consists of \$25,000 funded by the Community Development Fund and a \$75,000 project grant through the Agricultural Water Infrastructure Program, which is funded by the Government of BC through the Ministry of Agriculture and Food and delivered by the Investment Agriculture Foundation (IAF) of BC.*
- *The IAF grant had a requirement to be fully spent by December 31, 2024. Staff requested and were granted a 3-month extension to the IAF deadline: the new project deadline is March 31, 2025*
- *The IAF grants are proposed to be delivered in three stages. The current stage that this project is funded from is referred to as Stream 3 - Assessments, Engineering Studies or Plans. Successful applicants completing Stream 3, may be eligible to apply for additional funding from the next funding Streams 1 and 2, and the intent is to apply to these funding opportunities and leverage these later streams to advance the design development for an agricultural water supply in the Creston Valley.*
- *Once submitted to staff, the final report from Associated Engineering and recommendations will be presented to the Water Services Committee and the Arrow Creek Water Treatment & Supply Commission*

7. PROVINCIAL METERING PILOT PROJECT

The Committee Report from Alexandra Divlakovski, Water Operations Manager outlining the purpose of the Provincial Water Meter Pilot Project and providing an opportunity to review the application submitted for the grant funding associated with the project, has been received for information.

8. WATER OPERATIONS AND CAPITAL PROJECT UPDATE

The Committee Report from Alexandra Divlakovski, Water Operations Manager, providing an update and highlighting the larger maintenance and capital projects completed to date in 2024/2025, has been received for information.

9. WATER QUALITY REPORT

The Committee Report from Nathalie Nick, Environmental Coordinator – Utilities, summarizing the water advisories issued from September 1, 2024 to December 21, 2024 for water systems operated by the RDCK, has been received for information.

RECESS/ The meeting recessed at 9:53 a.m. for a break and reconvened at 10:03 a.m. PST.
RECONVENE

10. 2025-2029 FINANCIAL PLANS

The following DRAFT 2025-2029 Financial Plans have been received:

- a. Service S251: Water Utility-Area B (Arrow Creek)
- b. Service S255: Water Utility-Area E (Balfour)
- c. Service S248: Water Utility-Area F (Duhamel)
- d. Service S253: Water Utility-Area K (Edgewood)
- e. Service S250: Water Utility-Area B & C (Erickson)
- f. Service S254: Water Utility-Area K (Fauquier)
- g. Service S258: Water Utility-Area E (Grandview)
- h. Service S243: Water Utility-Area B (Lister)
- i. Service S247: Water Utility-Area J (Lucas Road)
- j. Service S246: Water Utility-Area D (MacDonald Creek)
- k. Service S165: Drainage-Area A (Riondel)
- l. Service S241: Water Utility-Area A (Riondel)
- m. Service S260: Water Utility-Area H (Rosebery)
- n. Service S242: Water Utility-Area A (Sanca Park)
- o. Service S245: Water Utility-Area H (South Slokan)
- p. Service S257: Water Utility-Area F (Woodland Heights)
- q. Service S256: Water Utility-Area J (West Robson)
- r. Service S244: Water Utility-Area G (Ymir)
- s. Service S252: Water Utility-Area K (Burton)

11. WATER SERVICE COMMUNITY ADVISORY COMMITTEES

The following Water Service Community Advisory Committee Discussion Notes have been received:

- 11.1 Grandview Properties Water Service Community Advisory Committee: Discussion Notes, January 20, 2025
- 11.2 Erickson Properties Water Service Community Advisory Committee: Discussion Notes, January 22, 2025
- 11.3 Balfour Properties Water Service Community Advisory Committee: Discussion Notes, January 17, 2025
- 11.4 Woodbury Village Properties Water Service Community Advisory Committee: Discussion Notes, January 27, 2025
- 11.5 Edgewood Properties Water Service Community Advisory Committee: Discussion Notes, January 22, 2025
- 11.6 Woodland Heights Properties Water Service Community Advisory Committee: Discussion Notes, February 3, 2025
- 11.7 Riondel Water & Drainage Service Community Advisory Committee: Discussion Notes, February 3, 2025

12. PUBLIC TIME

The Chair called for questions from the public and members of the media at 10:28 a.m. PST.

Questions from a member of the public regarding blanket easements for water lines on private property and relating to a fire hydrant in South Slocan, were answered by staff.

13. ADJOURNMENT

Moved and Seconded,
And Resolved:

The February 12, 2025 Water Services Committee meeting adjourned at 10:40 a.m. PST.

Carried

CERTIFIED CORRECT

Approved by

Director T. Newell
Water Services Committee Chair
February 18, 2025

BOARD RECOMMENDATIONS AS ADOPTED AT THE FEBRUARY 12, 2025 WATER SERVICES COMMITTEE MEETING

No recommendations.



Water Services Committee Report For Information

April, 2, 2025

RDCK 2019–2023 Water Consumption Report

Author:	Chris Gainham, Utility Services Manager
File Reference:	11-5700-02-25
Electoral Area/Municipality:	All Areas
Services Impacted	All RDCK Water Services

1.0 PURPOSE OF REPORT

The purpose of this report is to provide the Water Services Committee with a high-level summary of the RDCK 2019–2023 Water Consumption Report and highlight its alignment with the goals and action items identified in the 2019 RDCK Drinking Water Conservation Plan. This report is intended to be read with the accompanying RDCK Water Systems 2019-2023 Water Consumption Report and accompanying staff presentation. This report is provided for information only.

2.0 BACKGROUND AND UPDATE

The RDCK owns and operates 18 water systems of varying sizes and usage characteristics. The 2019–2023 Water Consumption Report provides detailed analysis of water consumption trends, per-connection demand, seasonal variations, and systems with operational challenges related to demand and capacity. The report is a key deliverable under Section 3.9 of the RDCK Drinking Water Conservation Plan, which commits to annual reporting of water consumption, water loss, and demand forecasts.

Key findings include:

Twelve systems saw an overall increase in consumption over the five-year period.

Systems such as Duhamel Creek (+9%), Burton (+6%), Woodland Heights (+27%), and Riondel (+35%) experienced notable increases in annual water use. These increases reflect high outdoor water use and the impact of sustained summer drought conditions, aging infrastructure and associated leakage from aging distribution system infrastructure also contribute to non-revenue water loss and when these issues are flagged they are included in the reporting.

2021 marked a year of record demand across nearly all systems due to extreme heat and drought, aligned with province-wide drought conditions and notable challenges for agricultural producers, particularly in the Creston Valley, who depend on a reliable source of water for viable crops. Water consumption in 2021 spiked across the region, largely due to the BC Heat Dome and extremely low precipitation. This was the peak year for total system consumption during the reporting period. Demand pressures were particularly evident in large systems such as Arrow Creek, where total consumption exceeded 2.9 million m³, and Erickson, which saw its highest recorded summer consumption. The stress on water infrastructure in 2021 underscored the importance of conservation,

and a continued focus on ongoing asset replacement, drought readiness, and the feasibility and continued design development of a potential separate and dedicated agricultural water supply system for the Creston Valley.

The Arrow Creek and Riondel systems were identified as having demand that exceed available emergency capacity, requiring focused operational and long term planning – for example, the Creston Valley Alternate Water Supply Study, and conservation measures. The Arrow Creek Water Treatment Plant recorded maximum day demand (MDD) of 316 L/s, exceeding the emergency capacity of 290 L/s on three separate occasions in 2023. This leaves the plant vulnerable to service disruption if a treatment train goes offline. Similarly, the Riondel system MDD of 14 L/s exceeded its emergency capacity of 10 L/s, making it reliant on reservoir storage during peak events. These systems highlight the importance of demand-side management, infrastructure replacement and upgrades.

Summer to winter peaking ratios and per-connection demand metrics show very high seasonal use in some systems, especially those with agricultural irrigation and golf courses. The Erickson system had the highest peaking factor at 8.9, reflecting intensive agricultural irrigation demand. Fauquier and Riondel, both of which supply potable water to local golf courses, also showed high per-connection usage (3,516 L/day and 2,318 L/day, respectively) and peaking factors over 2.0. In Riondel, the golf course accounted for approximately 10% of total system consumption. These patterns indicate both high outdoor use and opportunities for conservation or alternative supply strategies (e.g., transition to non-potable irrigation sources).

The report includes an updated drought summary (2019–2023) using BC’s provincial drought classification scale (Level 0–5). It highlights the increasing need for demand-side management strategies due to climate-induced hydrologic variability.

This reporting supports the following key objectives from the Water Conservation Plan:

Objective 1 & 3 – Provide annual reporting on consumption and trends.

Objective 2 – Inform public education and water conservation outreach

Objective 4 & 5 – Identify systems where infrastructure life can be extended through conservation.

Objective 7 – Support evidence-based rate-setting and metering strategies that align with actual usage.

The report also identifies opportunities to expand metering, advance system-level demand forecasting, and target systems with high per-connection use or high leakage indicators for further study and action.

3.0 NEXT STEPS AND TIMELINE

The RDCK Water Systems: 2019-2023 Water Consumption Report will be posted to the RCK Website for public viewing.

Respectfully submitted,
Chris Gainham, Manager of Utility Services

CONCURRENCE

ATTACHMENTS:

Attachment A - RDCK Water Systems 2019-2023 Water Consumption Report

Attachment B - RDCK Water Systems 2019-2023 Water Consumption Report Presentation



Water Systems

2019-2023 Water Consumption Report

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Chapter 1 Background

The Regional District owns 18 water services. The Erickson water service is significantly the largest. Arrow Creek consists of a treatment plant, transmission main and 2.5 million litre steel reservoirs which gravity feeds into the distribution system to supply Erickson and the separate Town of Creston.

McDonald Creek is owned the Regional District but operated under agreement by the Village of Kaslo. McDonald Creek and Sanca water systems are not included in this report as no consumption data is available.

The water consumption information in this report supports the Regional District Drinking Water Conservation Plan including:

- Establishment water reduction targets
- Adoption of a water metering implementation strategy
- Establishment of a water loss control & leak reduction program
- Drought management & water shortage contingency planning

This report documents water consumption and trends for the reporting period of 2019 to 2023.

Chapter 2 : Water System Comparison

2.1 Annual Water System Consumption

Regional District water services vary in size from 6 to 656 connections also with large variations in community form, resulting in a large variation of annual consumption.

Overall, there was an increase in water consumption in most RDCK water systems between 2022 and 2023. Twelve (12) systems saw an overall increase in consumption over the reporting period.

Consumption increased for all systems in 2021 due to the extreme temperatures of the BC Heat Dome and low precipitation that year. Section 3 of this report discusses the systems where consumption increased.

Table 2-1 provides a summary of Regional District and the separate Town of Creston annual water systems consumption from largest to smallest. Data is not available for McDonald Creek and Sanca.

Table 2-1 Total Consumption All Water Systems

Water System	No. Connections	2019 Annual Consumption (m3)	2020 Annual Consumption (m3)	2021 Annual Consumption (m3)	2022 Annual Consumption (m3)	2023 Annual Consumption (m3)	% Change from 2022
Arrow Creek	Assumed total of 3,951 connections (described below)	2,867,634	2,784,728	2,928,342	2,852,008	2,683,623	-6.%

	656 in the Erickson System Town of Creston reports 3,056 residential connections plus 239 ICI connections						
Town of Creston	Town of Creston reports 3,056 residential connections plus 239 ICI connections	1,504,383	1,544,230	1,509,794	1,567,173	1,455,540	-7%
Erickson	656	1,363,251	1,240,498	1,418,548	1,284,835	1,228,083	-5%
Duhamel Creek	93	251,863	163,242	95,424	91,063	100,629	9%
Lister	196	241,111	229,660	237,409	204,817	206,673	1%
Balfour	265	145,632	119,760	124,976	109,461	105,932	-3%
Fauquier	93	119,715	124,929	118,904	114,290	119,440	4%
Riondel	198	114,078	111,724	119,880	108,636	167,420	35%
Edgewood	92	82,068	107,445	104,977	112,053	80,545	-39%
West Robson	114	59,876	64,382	71,655	67,527	77,957	13%
South Slocan	50	40,130	35,709	34,580	24,792	29,349	15%
Burton	54	32,106	49,145	54,432	67,564	71,960	6%
Ymir	108	32,012	35,471	42,582	25,455	27,291	7%
Woodland Heights	21	10,849	8,392	8,567	8,173	11,186	27%
Grandview	37	7,743	13,427	11,936	14,414	16,833	14%
Woodbury	41	6,032	6,670	10,254	10,982	7,599	-44%
Rosebery	9	2,627	6,656	8,780	8,218	10,244	20%
Lucas Road	6	1,678	2,158	2,194	1,419	1,493	5%

Figure 2-1 provides a summary of Regional District annual water systems and Town of Creston consumption from largest to smallest.

2023 Comparison Chart 2019/2023

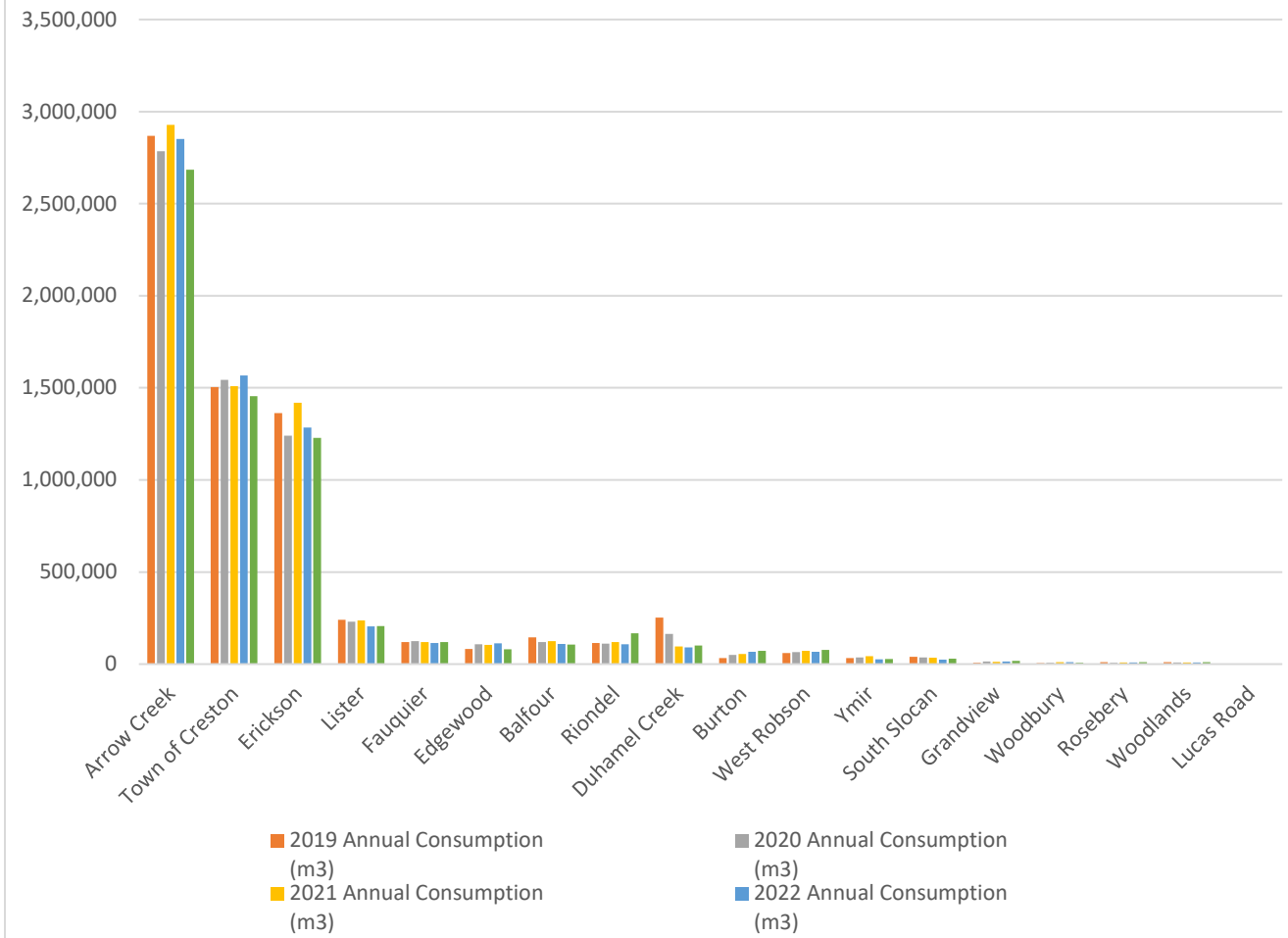


Figure 2-1 Annual Consumption All Systems

Figure 2-2 provides the annual water consumption for Regional District water systems with less than 50,000 cubic meters per year.

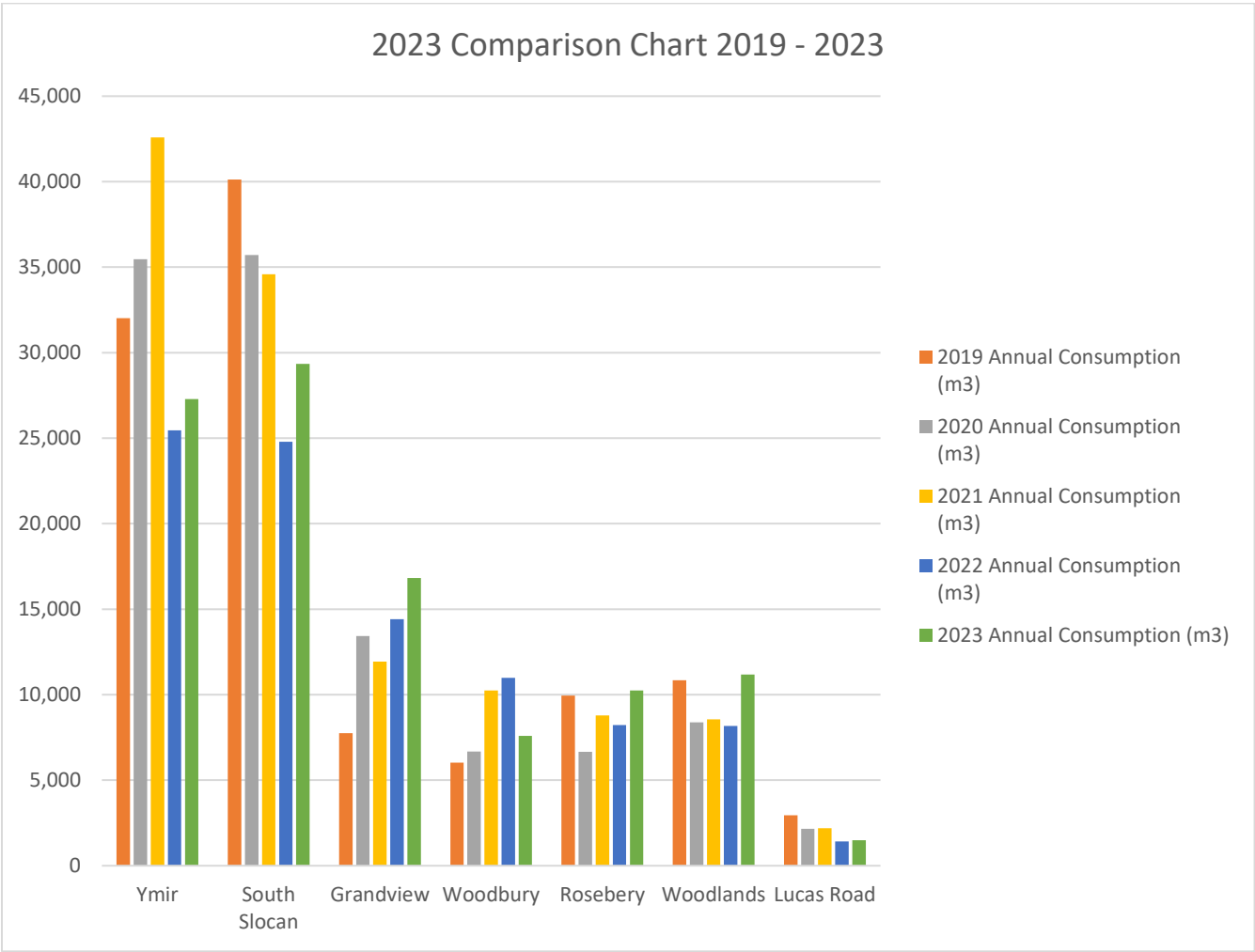


Figure 2-2 Annual Consumption Systems less than 50,00m3

Figure 2-3 provides the annual water consumption for Regional District water systems with consumption between 50,000 and 300,000 cubic meters per year.

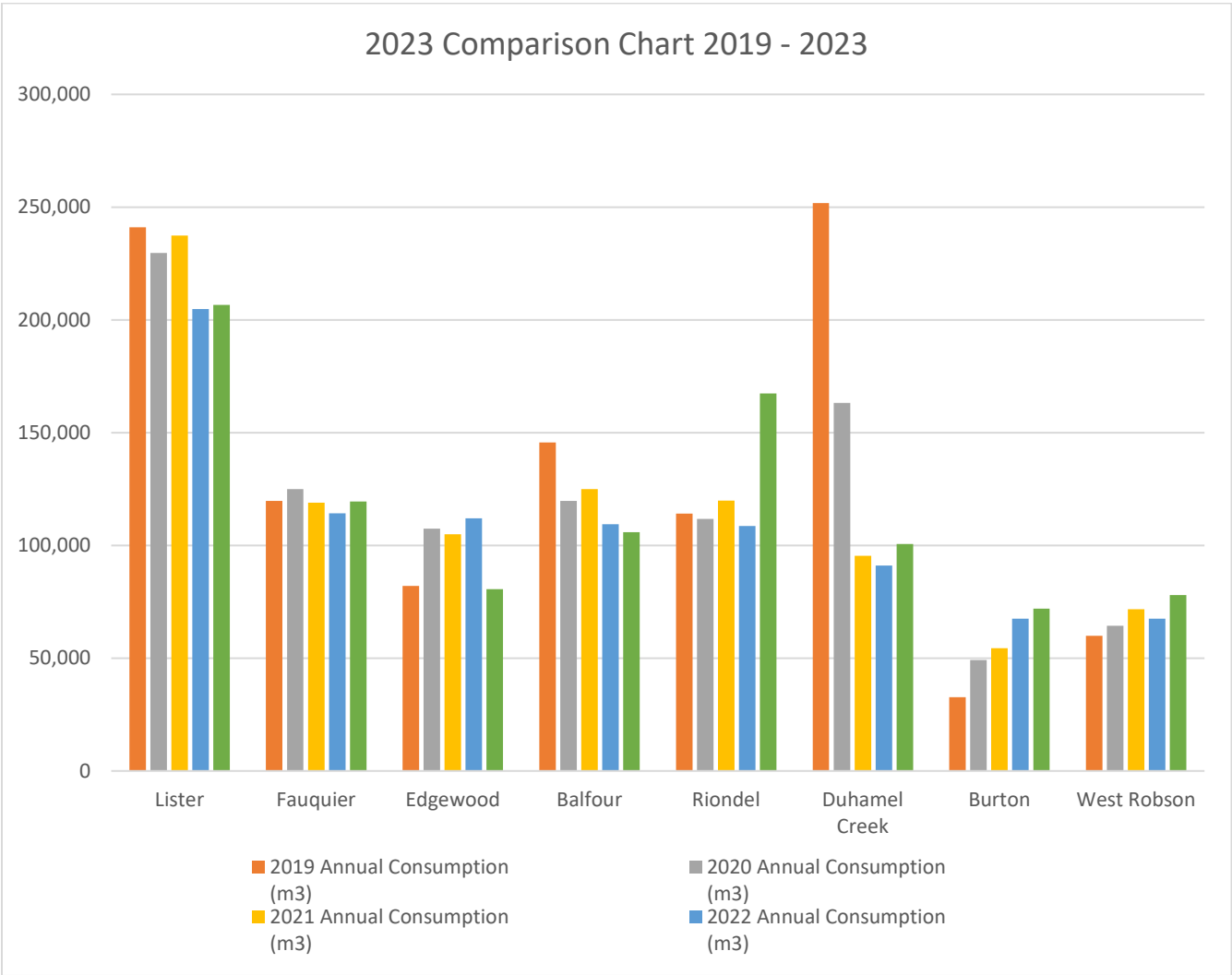


Figure 2-3 Annual Consumption Systems 50,000 to 300,000 m3

2.2 Temperature and Total Precipitation

Figures 2-4 provides the monthly average minimum and maximum temperatures; and total precipitation for Environment Canada's weather stations in Creston and Nelson BC. General trends in weather include record high temperatures in the year 2021 and low precipitation during the years 2021 and 2022. The temperature graph for the Nelson area is very similar.

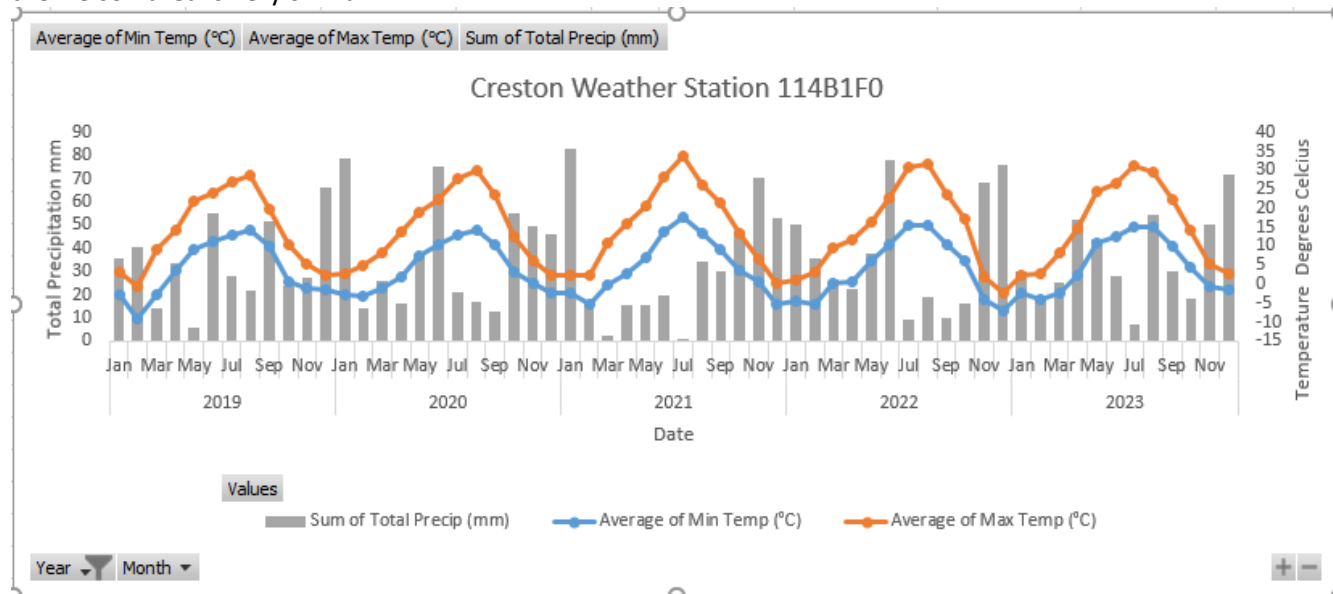


Figure 2-4 Precipitation and Temperature Creston

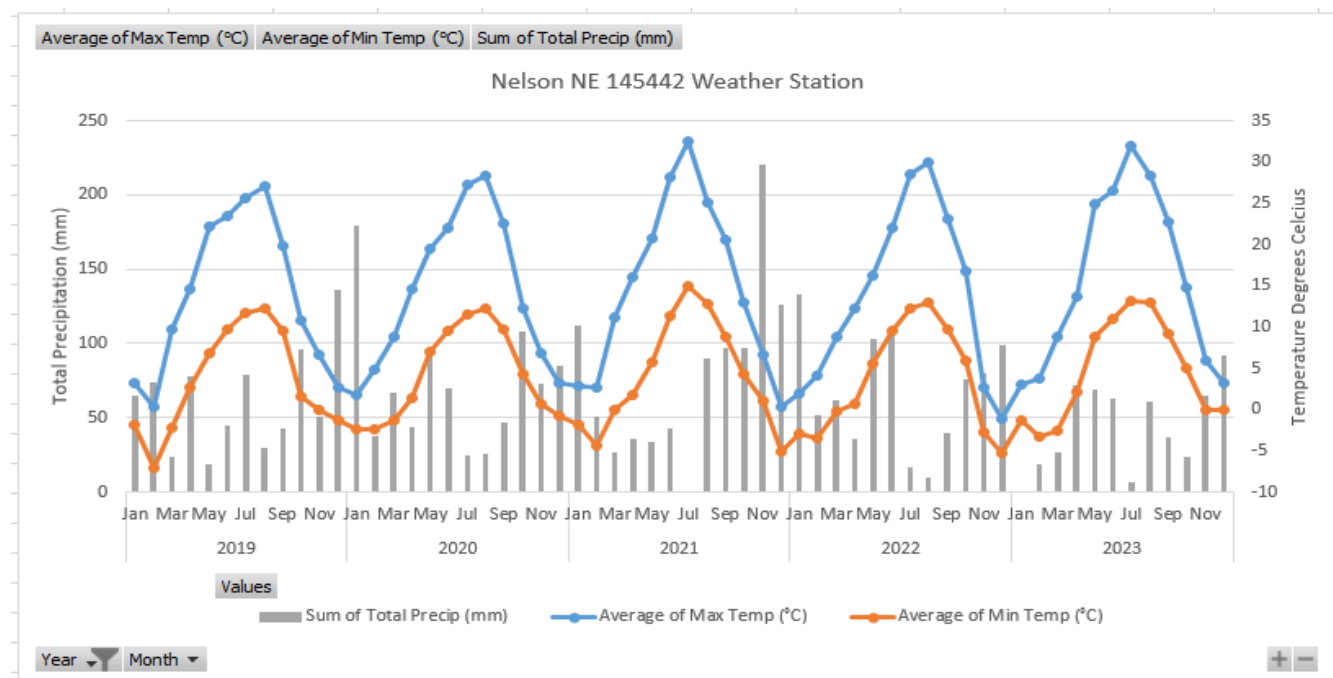


Figure 2.5: Nelson Temperature and Precipitation

Drought

2.1.1 Drought Summary (2019–2023)

The 2019–2023 period was marked by recurring drought conditions in the West Kootenay, with multiple years reaching high drought levels and significantly impacting streamflows and water availability in RDCK water systems. British Columbia uses a standardized six-level drought classification system (0 to 5) to communicate water scarcity and guide conservation and regulatory measures. Each level reflects increasing severity of drought conditions and the likelihood of negative impacts on water users and aquatic ecosystems:

- **Level 0 – Normal**
No Adverse Impacts Expected
Conditions are within the normal range for the time of year; no drought-related concerns.
- **Level 1 – Very Low Drought**
Adverse Impacts Rare
Slightly drier than normal. Monitoring is increased, but impacts on water users or ecosystems are unlikely.
- **Level 2 – Low Drought**
Adverse Impacts Possible
Continued dry conditions may begin to affect some water users or sensitive ecosystems. Voluntary conservation is encouraged.
- **Level 3 – Moderate Drought**
Adverse Impacts Probable
Water shortages are more evident, and impacts on aquatic ecosystems and community water supplies are likely without conservation efforts. Strongly encourage water conservation measures.
- **Level 4 – Severe Drought**
Adverse Impacts Likely
Water supply is insufficient to meet all needs. Significant negative impacts are occurring or imminent. Regulatory restrictions are typically implemented.
- **Level 5 – Extreme Drought**
Adverse Impacts Almost Certain
Critical water shortages threaten communities and ecosystems. Emergency measures may be necessary to manage severe impacts.

In **2019**, drought conditions were moderate, peaking at Level 3 in August due to a warm summer, though impacts were less severe than in preceding years. **2020** saw worsening conditions, with drought reaching Level 4 in August amid hot, dry weather and low snowpack.

2021 was among the most extreme drought years on record, driven by the historic "heat dome" event. West Kootenay experienced sustained Level 4 drought through much of the summer, resulting in elevated water demand and pressure on water systems, particularly those dependent on surface sources.

While **2022** was milder, the region still experienced Level 3 drought by late summer. The cumulative effect of preceding dry years contributed to reduced resilience in aquatic systems and water sources.

2023 brought prolonged and province-wide drought conditions, with West Kootenay again reaching Level 4 from July through September. Record-breaking May heat caused rapid snowmelt, followed by below-normal precipitation in June and July, which led to historically low streamflows. By mid-July, one-third of B.C.'s streamflow stations were reporting new record lows, including streams in the RDCK.

These ongoing drought conditions emphasize the need for wise outdoor water use, water conservation education and outreach, and infrastructure resilience to manage climate-induced hydrologic variability.

Year	Drought Level					Drought Summaries
	May	June	July	August	September	
2015	1	2	2	4	3	Significant drought, early snowmelt, high temperatures, peak in late August before rain mitigated.
2016	1	1	2	2	2	Moderate drought, less severe than 2015.
2017	1	1	2	4	3	Prolonged dry conditions, exacerbated by wildfires.
2018	1	2	3	3	2	Hot, dry summer with near-record drought levels in some areas.
2019	1	1	2	3	2	Milder but still faced dry spells during summer months.
2020	2	2	3	4	3	Persistent dry conditions, southern BC faced water restrictions.
2021	1	2	3	4	3	Widespread drought due to record heat waves and minimal rainfall.
2022	1	2	2	3	2	Moderate drought, less severe but dry summer conditions persisted.
2023	3	4	4	4	3	Prolonged, severe, impactful, and province-wide. Existing drought conditions from the year before were exacerbated by extreme, record-breaking heat in May which led to the fastest melt of snowpack on record, together with warm weather and far below normal precipitation through June and July for most of the province. This led to extended, multi-year drought conditions unique to the past century in both duration and severity, and resulted in historically low flows in numerous river systems
2024	1	1	1	3	3	In 2024, the West Kootenay began the year with record low snowpack levels—63% of normal on April 1st—raising early concerns about water supply. Although cooler temperatures and widespread precipitation in late May and early June helped moderate melt rates and provided temporary relief, a summer heatwave and variable rainfall led to renewed drought stress. By August and September, drought conditions in the region intensified to Level 3. Despite fall storms in mid-September bringing above-normal precipitation to parts of B.C., long-term deficits in groundwater and streamflow persisted in many interior regions, including parts of the Kootenays.

2.3 Annual Per-Connection Water System Consumption

Per-capita per day water consumption is typically used to review water consumption. According to Statistics Canada the Canadian average daily water use in 2021 was about 223 Liters per person per day (<https://www.statcan.gc.ca/o1/en/plus/5814-world-water-day-eh>). This is generally not considered representative for Regional District water services as rural properties are typically large. In addition, population data is not available for Regional District water service areas to make a comparison. The estimated population below is simply based on 2.2 persons per water account which is the Canadian Census data for the average number of residents per household [*this assumption aligns well with 2021 Census profile person per-household (pph) data for RDCK urban centres of Creston 2.0 pph; Nelson 2.2 pph and Castlegar 2.3 pph*]. Given this, an average per connection consumption would be 490 L/Day. Table 2-2 provides a summary of annual per connection water system consumption.

Table 2-2 Average Day Demand

Water System	No of Active Connections	2023 ADD (m3)	2023 ADD Consumption per Connection per Day (L)
Grandview	37	46	1243
Ymir	108	74	685
Lucas Road	6	4	667
Woodbury	41	28	683
Rosebery	9	31	3444
Balfour	265	290	1094
Riondel	198	459	2318
Woodland Heights	21	31	1476
West Robson	114	214	1877
South Slokan	50	110	1600
Duhamel Creek	93	611	6570
Lister	196	566	2888
Edgewood	92	221	2402
Fauquier	93	327	3516
Burton	54	197	3648
Erickson	653	3365	5137

Water systems with high per connection consumption could have a high amount of leakage or high outdoor water usage. Erickson has a large agricultural water demand, and Fauquier and Riondel have golf course irrigation.

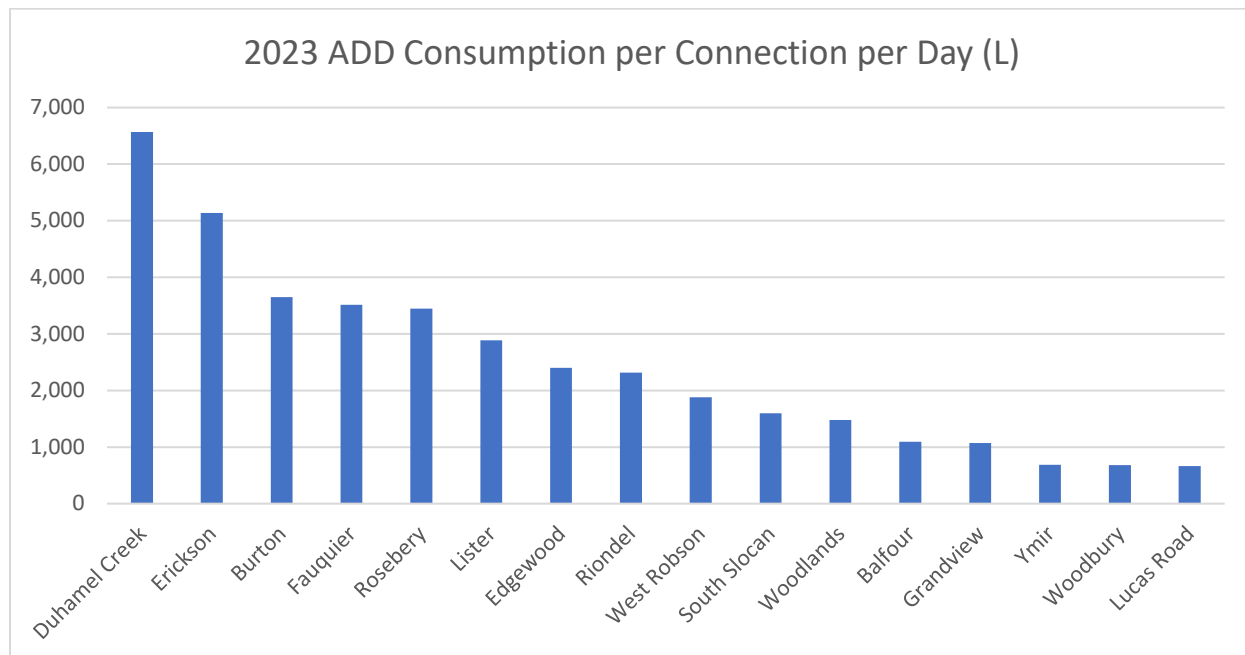


Figure 2.6: Consumption per Connection 2023

2.4 Average Day Demand and Maximum Day Demand

Average day demand (ADD) represents annual average daily demand and is determined by establishing total annual water consumption for the given year and dividing it by the number of days in that year.

Maximum day demand (MDD) represents the maximum single day water consumption for the data available. Short-term spikes in data were ignored as these were likely attributed to large short term water breaks, or maintenance events such as flushing or reservoir filling. 2023 MDD in Table 2-3 represents the highest consumption day for 2023.

Table 2-3 Average Day Demand and Maximum Day Demand

Water System	No. of Water Connections	2023 ADD (m3)	2023 MDD (m3)	Peaking Factor MDD/ADD
Arrow Creek		7,352		0.0
Balfour	265	290	747	2.6
Burton	54	197	461	2.3
Duhamel Creek	93	276	611	2.2
Edgewood	92	221	435	2.0
Erickson	656	3,365	15,500	4.6
Fauquier	93	327	795	2.4
Grandview	37	46	85	1.8
Lister	196	566	1,544	2.7
Lucas Road	6	4	6	1.5
Riondel	198	459	1,281	2.8
Rosebery	9	31	237	7.6
South Slocan	50	80	459	5.7
West Robson	114	214	713	3.3
Woodbury	41	28	72	2.6
Woodlands	21	31	101	3.3
Ymir	108	74	118	1.6

Figure 2-6 provides the ADD & MDD for water systems with an MDD of 200 to 1,600 cubic meters.

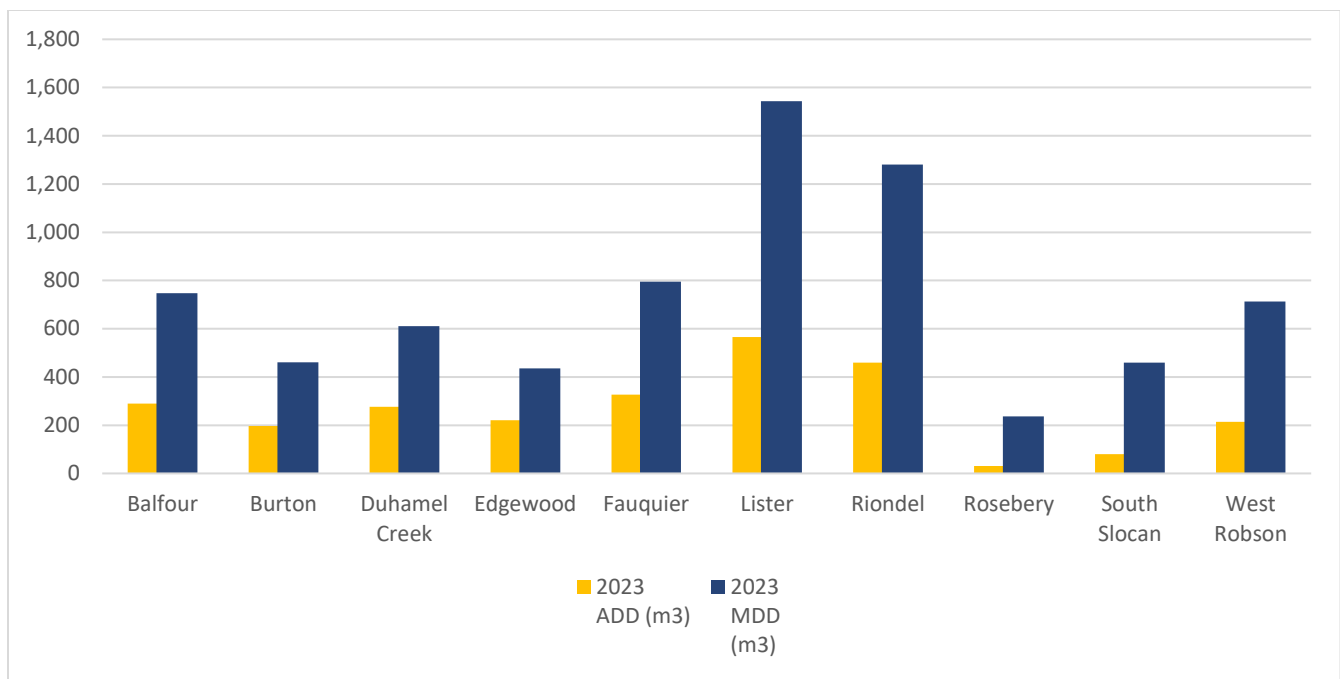


Figure 2-7 ADD and MDD for Systems with MDD 200 - 1600 m3

Figure 2-7 provides the ADD & MDD for water systems with an MDD of less than 200 cubic meters.

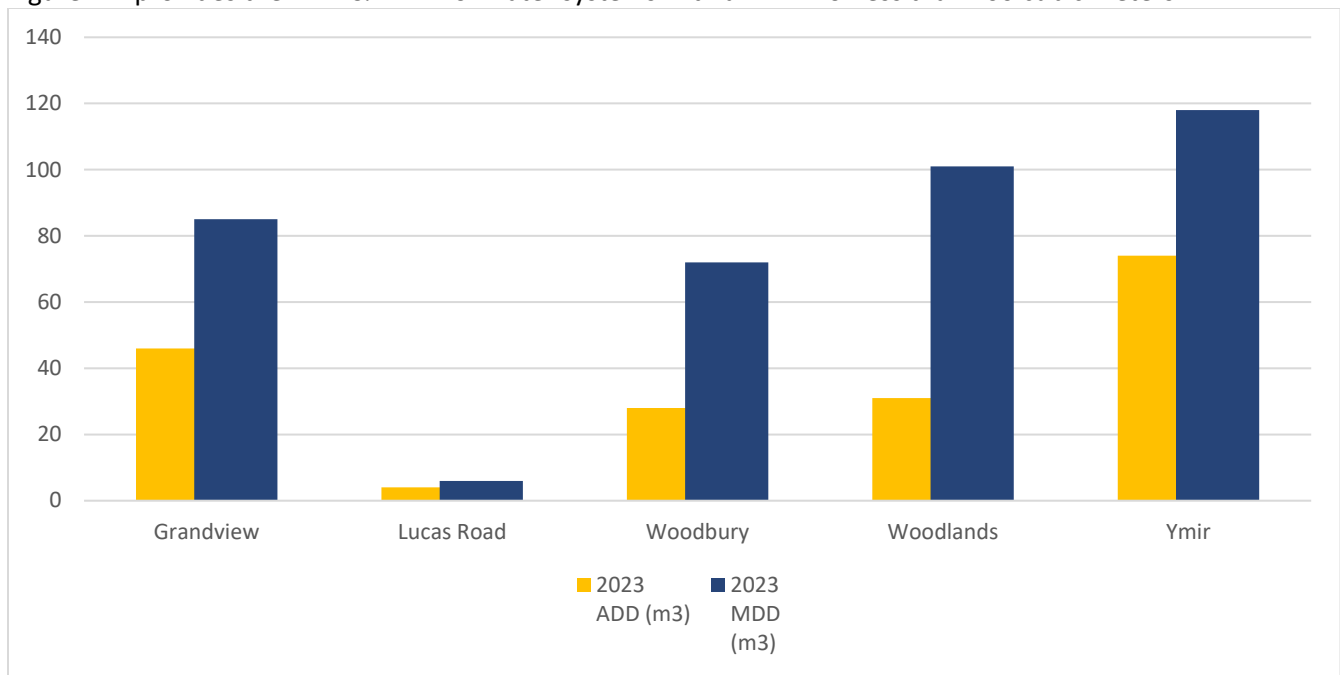


Figure 2-8 ADD and MDD for Systems with an MDD of less than 200 m3

2.5 Summer Demand vs Winter Demand

Reviewing summer demand vs winter demand can provide an indication of outdoor water use or potential leakage. Winter consumption can be used to typically represent indoor water consumption. Summer consumption represents both indoor and outdoor water consumption. Of note here compared to past RDCK Water Systems Consumption Reports is the update source reference for Residential End Uses of Water produced by the Water Research Foundation. The Residential End Uses of Water study was first published in 1999 and previous RDCK reporting referenced this older study. This current report leverages the updated 2016 Version 2 Report that leverages data and input from regions across North America, including Canada (Region of Waterloo and Peel Region among others are participants). The most notable data trend from this report is a reduction in the percentage of water used by single family residences for outdoor uses- this has trended down, from a reported 59% in the 1999 study to 50% in 2016.

Indoor domestic water use habits can be considered consistent throughout North America. Differences in indoor water consumption between water systems would be primarily attributed to the age of water fixtures. Old shower heads and toilets in particular use much more water than modern fixtures; therefore, older water systems could be expected to have higher indoor water consumption.

Figure 2-8 provides the typical residential end usages percentages using a tabulation of data from the updated Water Research Foundation Residential End Uses of Water Study, Version 2 (2016)

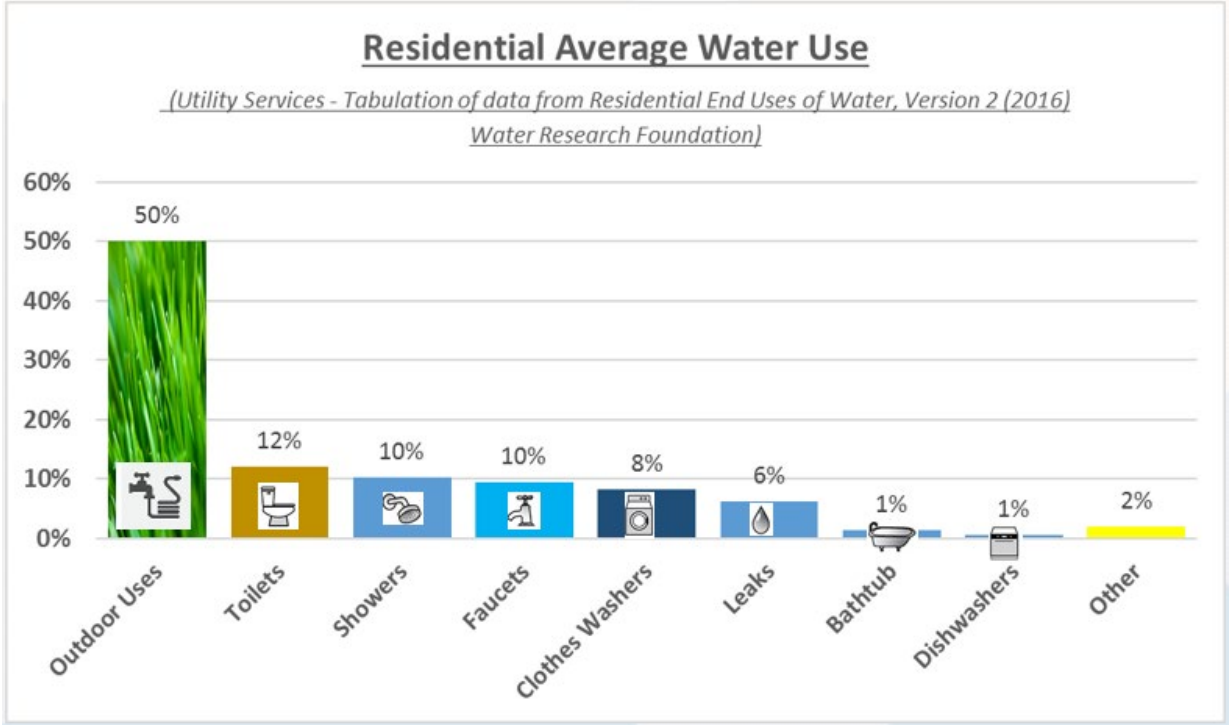


Figure 2-9 Typical Residential End Use for Water

Winter water consumption can be reviewed to represent indoor water usage and potential system leakage. The lowest and highest water demand months do vary by water system and by year. In addition, many Regional District water system have significant differences in seasonal occupation. For consistency, January 2023 and August 2023 consumption were chosen for comparison in Table 2-5.

Table 2-4. January vs August Consumption

Water System	No of Active Connections	August 2023 Consumption (m3)	January 2023 Consumption (m3)	August 2022 Consumption per Connection (L/day)	January 2023 Consumption per Connection (L/day)	Peaking Factor (Aug 2022 / Dec 2023)
Erickson	656	256,502	28,677	12,671	1,417	8.9
Lister	196	37,368	13,651	6,150	2,247	2.7
Riondel	198	25,402	12,354	4,138	2,013	2.1
Fauquier	93	22,175	8,313	7,692	2,883	2.7
Duhamel Creek	93	18,291	5,098	6,344	1,768	3.6
West Robson	114	18,205	6,284	5,151	1,778	2.9
Balfour	265	15,303	6,465	1,863	787	2.4
Edgewood	92	12,300	5,092	4,313	1,785	2.4
Burton	54	10,906	3,888	6,515	2,323	2.8
South Slocan	50	4,002	3,782	1,370	2,440	1.1

Water System	No of Active Connections	August 2023 Consumption (m3)	January 2023 Consumption (m3)	August 2022 Consumption per Connection (L/day)	January 2023 Consumption per Connection (L/day)	Peaking Factor (Aug 2022 / Dec 2023)
Ymir	108	3,275	2,460	978	735	1.3
Woodlands	21	3,135	462	4,816	710	6.8
Grandview	37	2,888	1,120	1,370	531	2.6
Rosebery	9	2,178	266	3,513	429	8.2
Woodbury	41	2,172	465	1,709	366	4.7

Figure 2.9 provides the January 2023 and August 2023 per connection per day water consumption for the Regional District water systems.

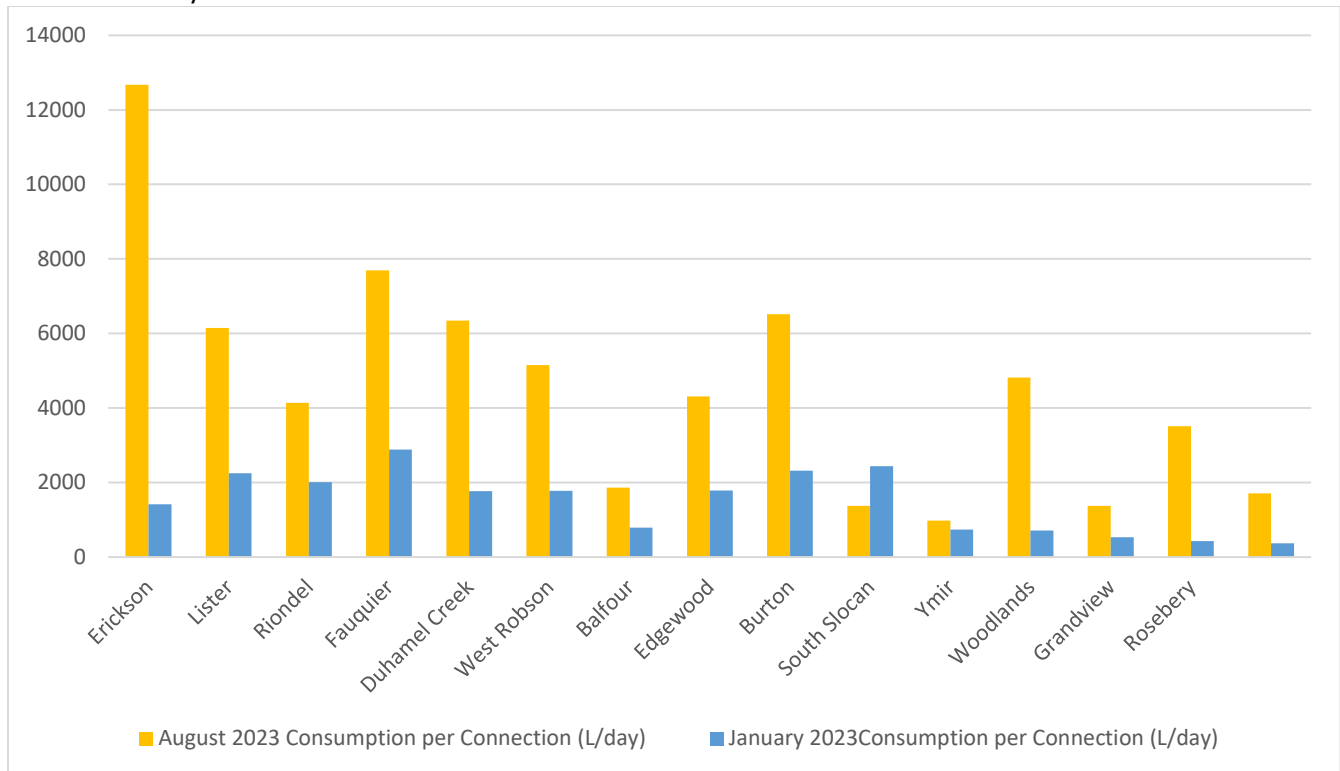


Figure 2-10. Summer vs Winter Demand in L/connection/day

2.6 Water System Emergency Capacity vs Maximum Day Demand

Water systems' pumping and treatment capacity are typically designed to meet maximum day demand (MDD). MDD represents the maximum water consumption for a single day of the year. MDD in the following data represents the highest consumption day for which data was available. Future MDD, not presented, is usually used when designing new systems or upgrade existing systems.

Pumping and treatment systems should be provided with redundant major components in the event that one of the components fails, such as pumps, filters, and disinfection systems. Emergency capacity includes operation of backup systems to increase capacity.

Figure 2-9 provides a comparison of water system capacity vs MDD. Systems with a MDD that is higher than emergency or rated capacity have a capacity concern. This includes Riondel and Arrow Creek.

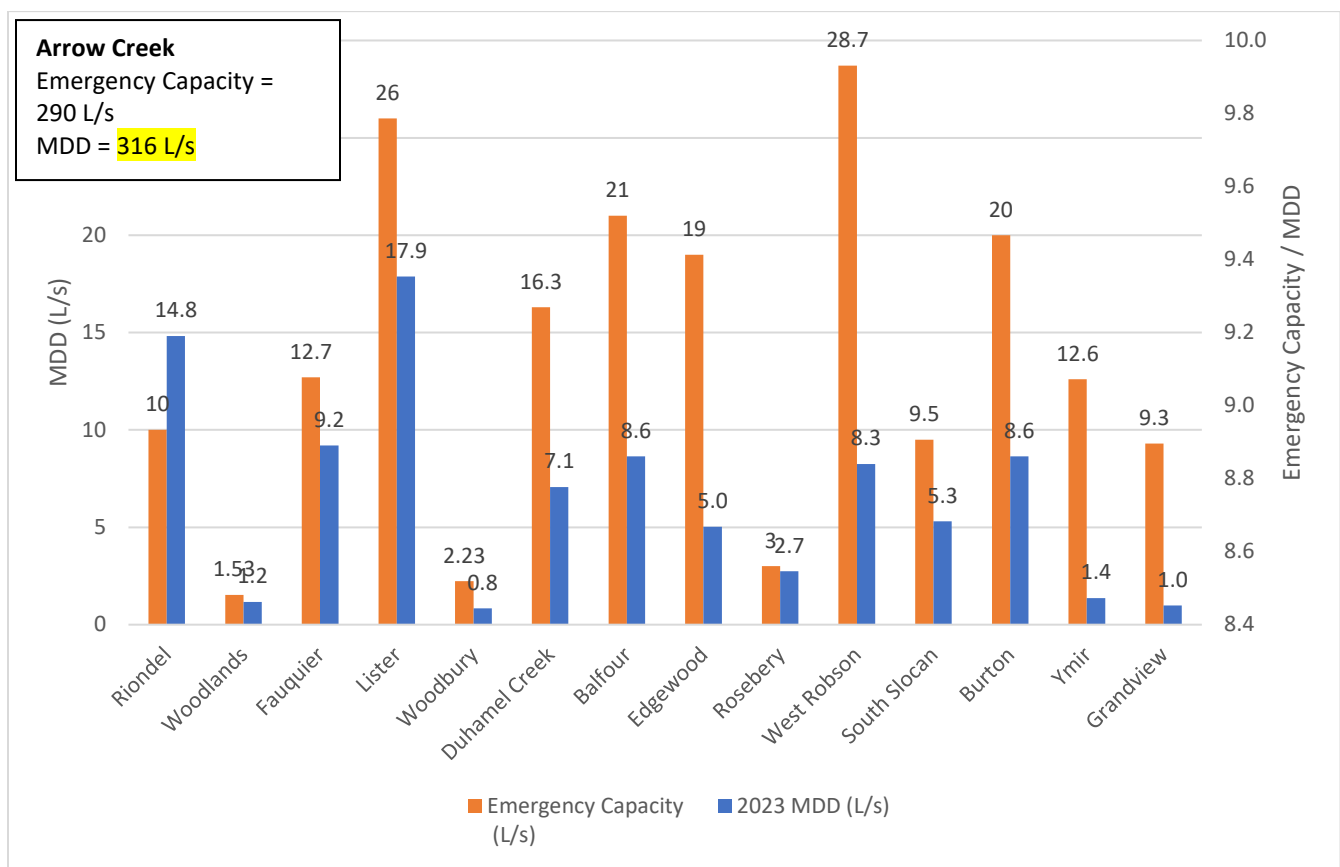


Figure 2-11 MDD and Emergency Capacity L/s

Chapter 3 Systems of Concern

3.1 Maximum Day Demand and Emergency Capacity

Section 2.6 of this report discussed emergency capacity. Emergency capacity includes operation of backup systems to increase capacity. Systems with a Maximum Day Demand (MDD) that is higher than emergency or rated capacity have a capacity concern.

3.1.1 Arrow Creek

The Arrow treatment plant capacity is assumed to be about **290 L/s** taking into account filter backwash. This capacity is with all four filter trains in operation, leaving no maintenance or emergency redundant train.

MDD exceeded emergency capacity three times in 2023:

Table 5: Dates when flows exceeded emergency capacity at Arrow WTP

Date	Water Treatment Plant Flow L/S
July 19, 2023	316
July 30, 2023	300
August 6, 2023	296

The use of Arrow Creek as source water is dependent upon nine (9) water licenses, five (5) of which are held by the Erickson distribution system and four (4) held by the Town of Creston (see Figure 3-1).

The year 2021 was the highest consumption year for the reporting period. License diversion limits were not exceeded (see Figure 3-1). This was an improvement from the last reporting period when diversion limits were almost exceeded in the year 2017.

In recent years, the Town of Creston brings their back up wells online when the Arrow Treatment plant nears capacity. This ensures that the membrane filters in the plant are not overused, which shortens their useful life. Extending the life of filter membranes is important due to their high cost.

The period from mid-July to mid-September each year is the biggest concern for maintenance of stream base flows below the Arrow water treatment plant intake diversion. Maintenance of stream base flows are required for the health of fish and other aquatic species. Figure 3-3 provides annual Arrow Creek stream flows from Environment Canada’s Weather Office website for monitoring station 08NH084, located immediately upstream of the Arrow water treatment plant intake diversion. Arrow Creek has experienced both record high and record low stream flows in recent years for the 1945 to 2018 data set. The high fluctuation in stream flows is indicative of the vulnerability of Arrow Creek as a reliable source of water. **Notably, historic low flows were exceeded in both March and June of 2023.**



Figure 3-1 Membrane Filter at Arrow Water Treatment Plant

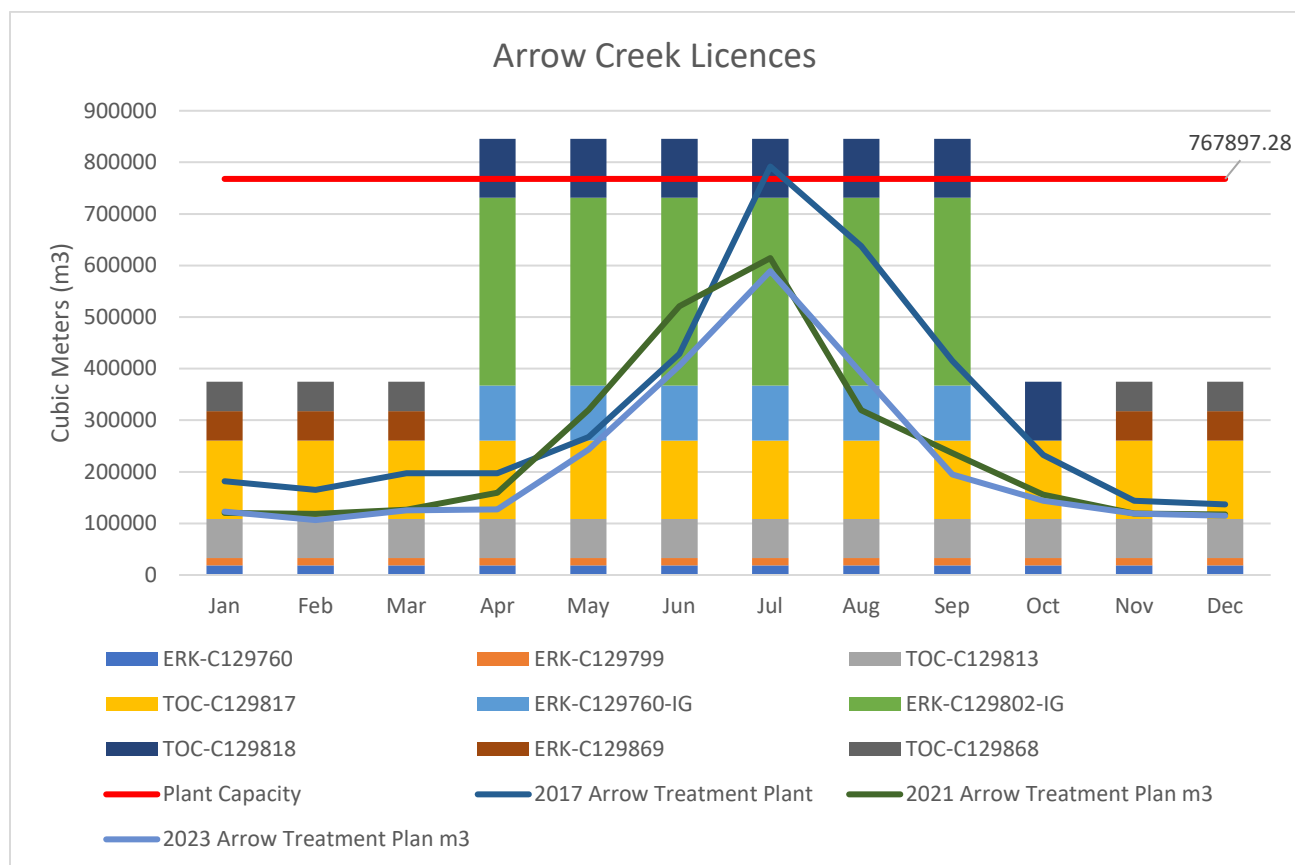


Figure 3-2 Arrow Water Licenses, Peak Demand

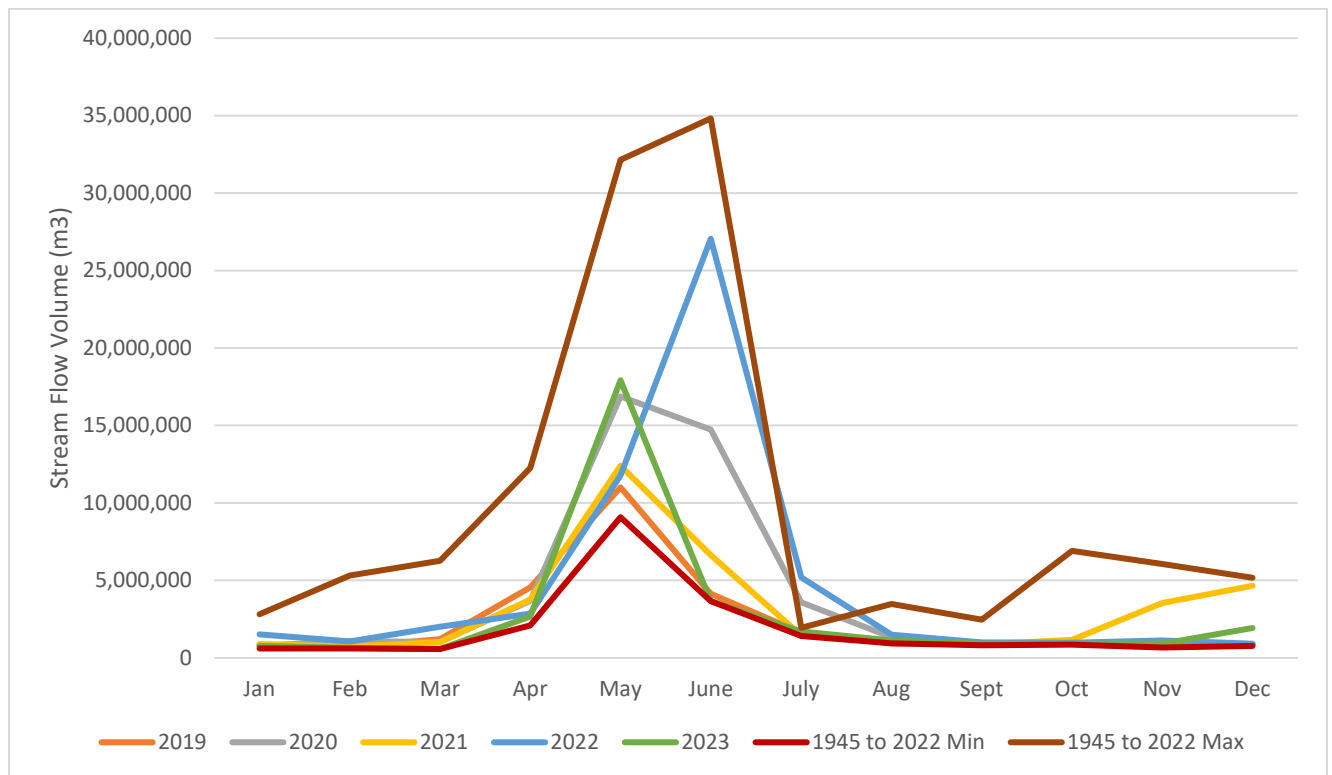


Figure 3-3 Arrow Creek Stream Flows



Figure 3-4 Fish Ladder at Arrow Creek

Any point of diversion can affect the licensed amount of water used. There are two such points of diversion shown in Figures 3-4 and 3-5.

More water is diverted at the Arrow intake than is represented in the consumption data. Some water is returned from one of the diversion structures to Arrow Creek immediately below the fish ladder. Water is also returned to Arrow Creek at the end of the Arrow settlement ponds. More water is diverted through the settlement ponds than is required for the treatment plant to ensure that the settlement ponds do not drain when the plant is operating.



Figure 3-5 Settling Pond Arrow Water Treatment Plant

3.1.2 Riondel

Riondel is a system of concern because MDD is higher than and emergency capacity. **In 2023 MDD was 14 L/S while emergency capacity is 10L/S.** This means that water storage provides the balance of water during times of drought. Riondel’s per connection consumption is 2318 L/day, which is higher than the Canadian average. The golf course at Riondel consumes approximately 17,000 m3/year, which in 2023 was about 10% of the total consumption. This makes a significant contribution to the per connection consumption in this system. The province recently issued a licence - #505687 under the Water Sustainability Act to the Riondel Golf Club authorizing the diversion and use of up to 47,750 m³/yr (April 1st – October 31st) of water from Kootenay Lake for irrigation. Included in the terms of the provincial water licence is a requirement for substantial completion of the required infrastructure works and start of use of the water by October 31, 2027. **Winter demand was highest in the winter of 2022/23 compared to the other years within the reporting period.**

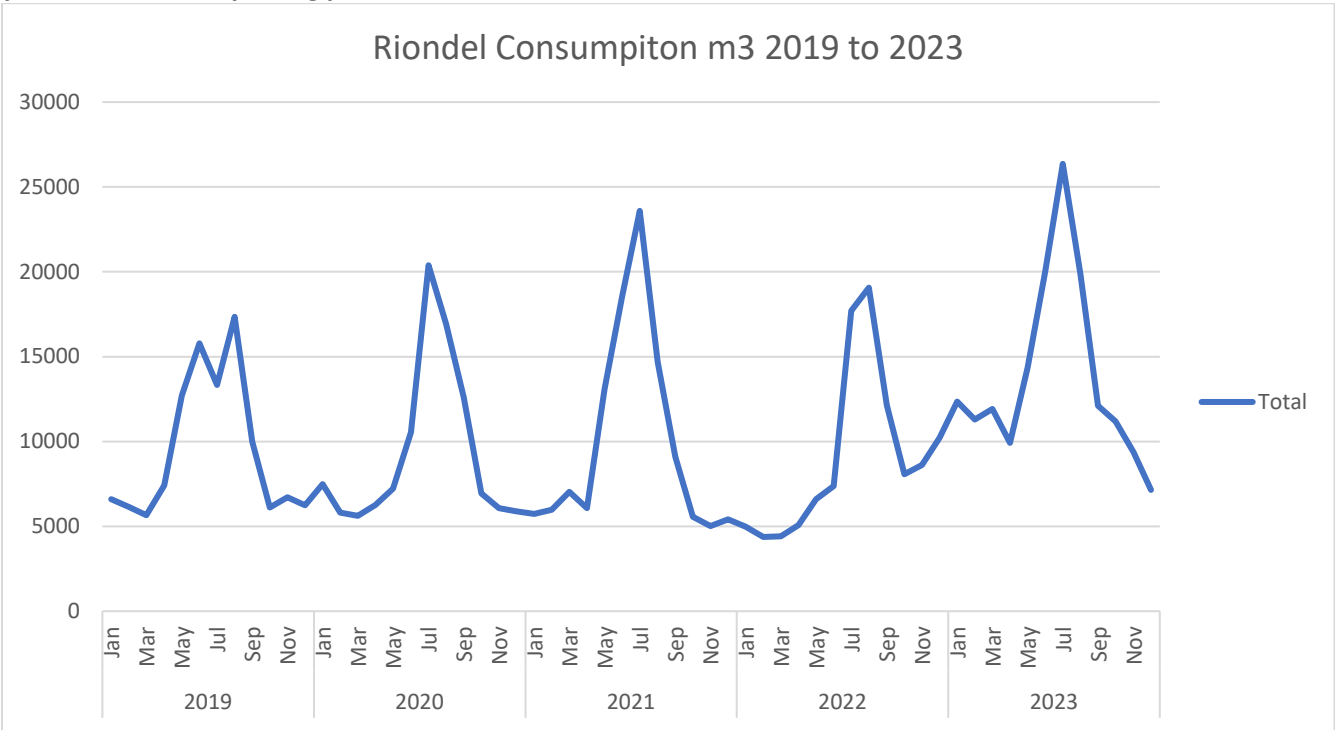




Figure 3-6. Riondel Reservoir

3.2 High Winter Water Demand, Seasonal Peaks and Increasing Water Use

High winter demand can indicate system leakage. High seasonal peaks can define patterns in water use, whether it is due to agriculture, lawn watering, car washing, driveway washing, swimming pools or seasonal occupation of property to name a few. It is therefore important to look at patterns of winter vs. summer consumption to determine what is happening with the infrastructure, and within the community that could affect water use.

This section highlights noteworthy trends in some water systems.

3.2.1 Duhamel Creek

This water system was seeing high water consumption in the winter months, until a major leak was repaired in 2020. The result was a significant decrease in winter water consumption. 2022 per-connection consumption in Duhamel is 2683 L/Day which is very high compared to the Canadian average. Summer water use is very high. There are no golf courses and very little agriculture in this water system, suggesting that water is used for lawns and gardens. However, peak consumption has decreased every summer season over the course of the reporting period.

The Duhamel water system is not metered.

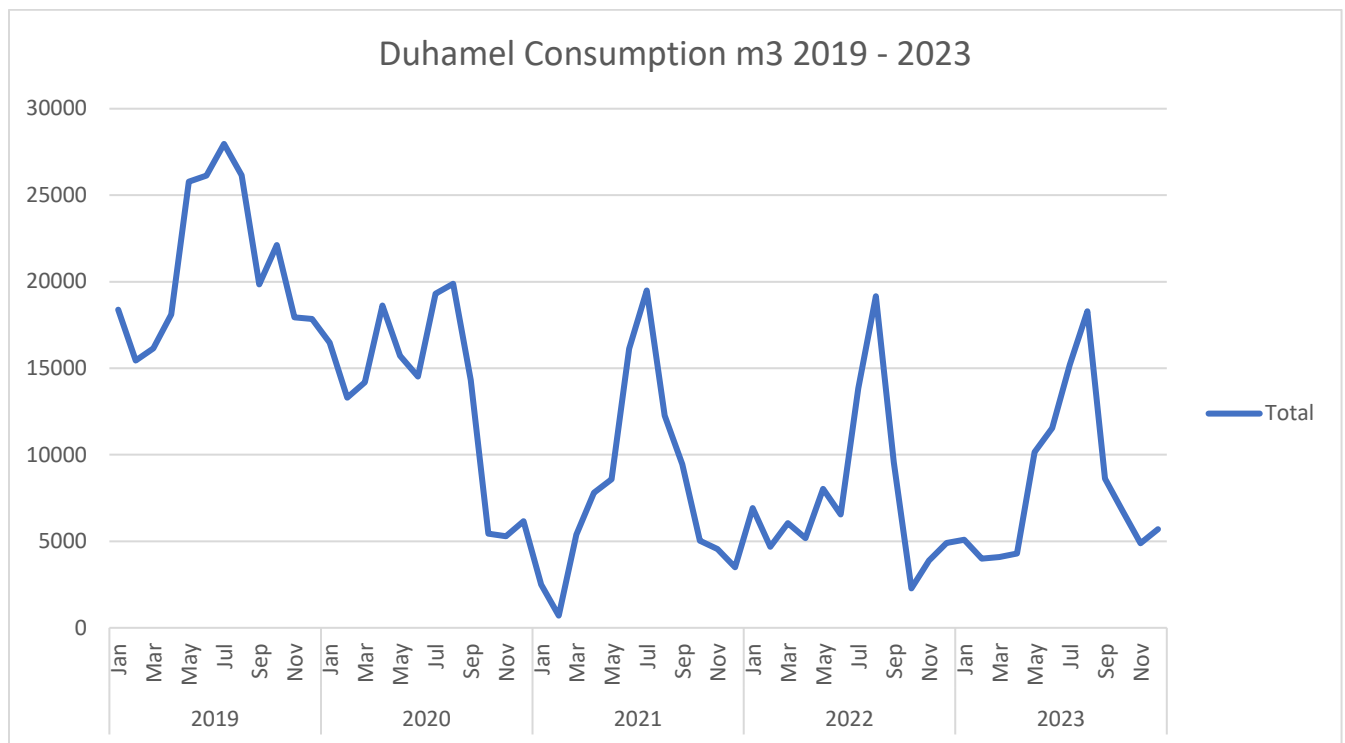


Figure 3-7 Duhamel Monthly Consumption m3

3.2.2 Burton

This water system has seen increases in consumption since 2018. The number of service connections has remained constant. The Burton school re-opened in 2020 which could also account for an increase in overall water use. The school irrigation had been off between 2010 and 2020. In a 2020 a school field renovation was complete and the irrigation system turned back on.

Per-connection consumption in Burton is very high at 3648 L/day, second only to the Erickson water system. Burton also has high season peaks suggesting that outdoor water use is high in the summer months. There is an orchard with a cidery and a campground in Burton. These two uses contribute to the high per-connection consumption.

There is an anomaly in the data during the winter months of the year 2020, which may skew the consumption results for Burton to some degree. The cause of the early 2020 spike is unknown. **Both winter and summer water have increased consistently each year throughout the reporting period.** The Burton water system is not metered.

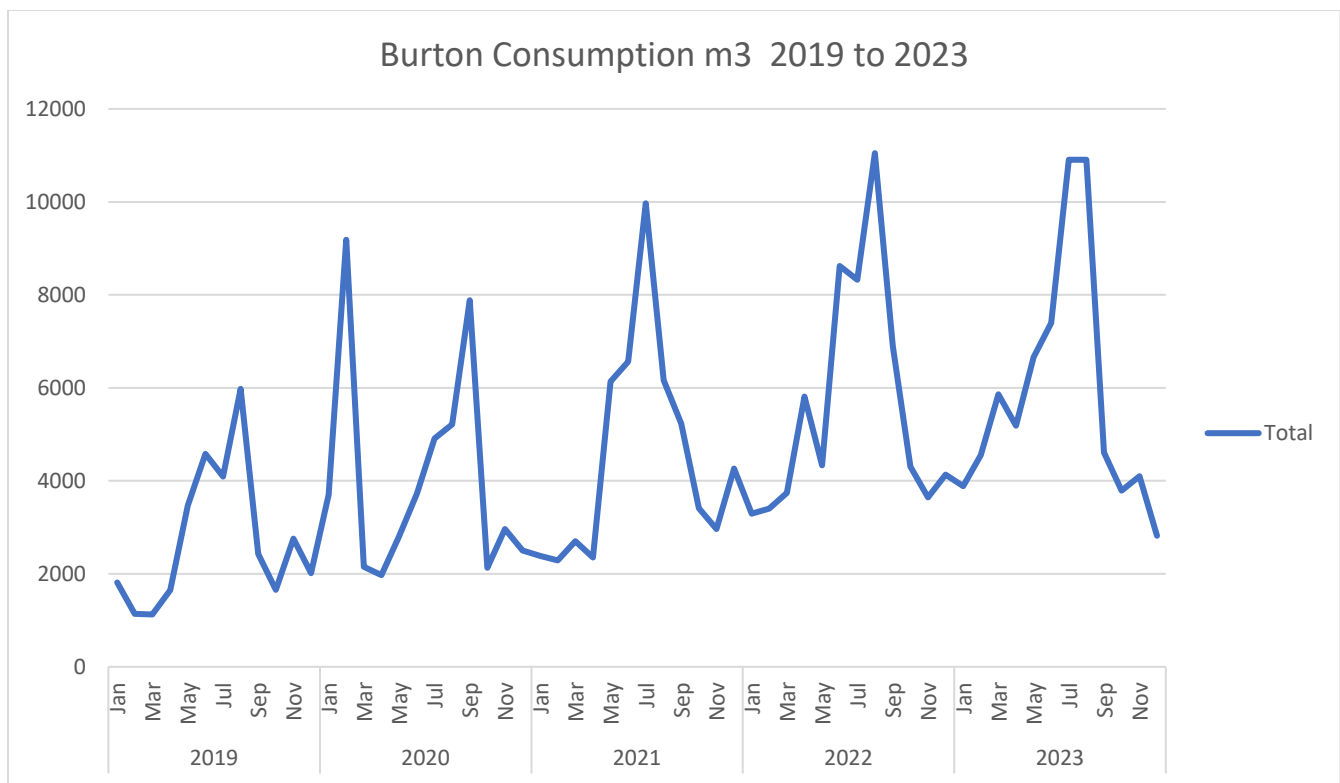


Figure 3-8 Monthly Consumption in Burton Water System

3.2.3 Edgewood

This water system has seen a steady decrease in consumption since 2021. The number of connections in Edgewood has remained constant since 2018.

A large leak was isolated on private property in early 2020 and a second leak was repaired in the school irrigation system. Some of the increase in 2019 demand might be attributed to construction of the new well and reservoir.

The year 2021 was the BC heat dome and the year of the Michaud Creek wildfire. Residents of Edgewood were evacuated from their homes on July 21, 2021. This could have resulted in sprinklers running continuously to protect homes and property. Consumption was very high in 2021.

Edgewood's per-connection consumption rate in 2023 was 2,402 Litres/day, which was a significant reduction since the year prior. **Winter use appears to have decreased significantly in 2023.**

The Edgewood water system is not metered.

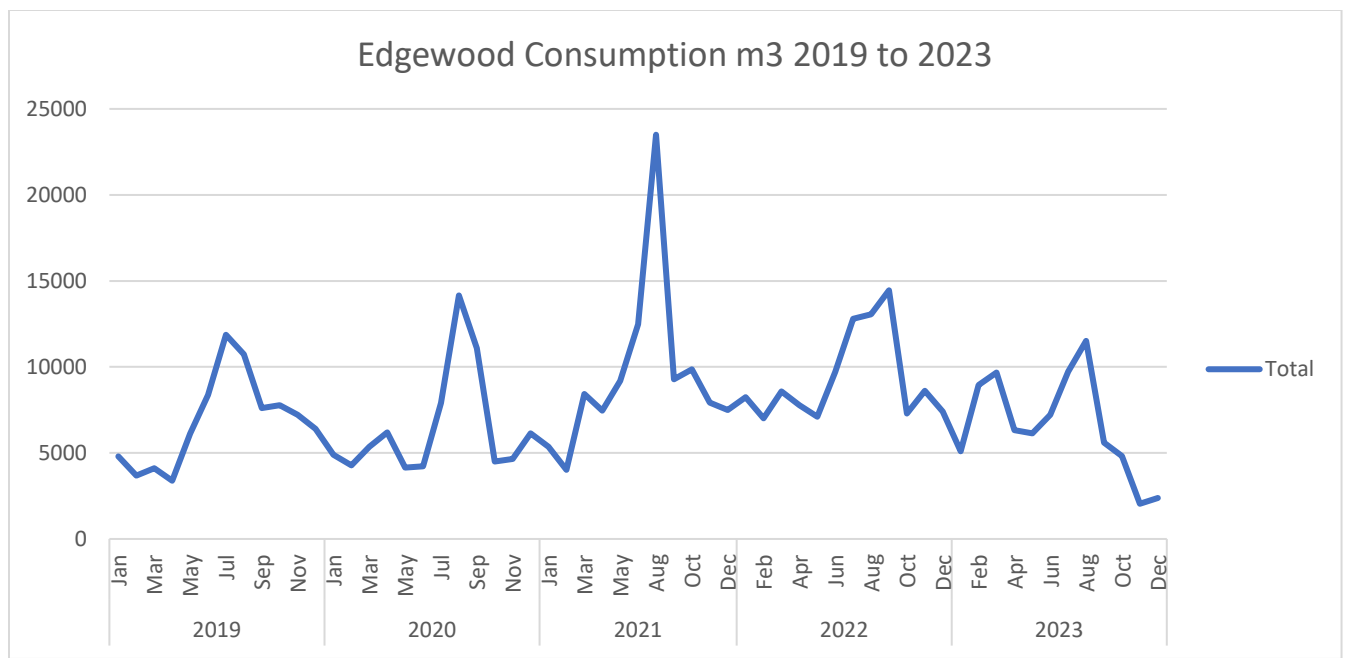


Figure 3-9 Monthly Consumption in Edgewood

3.2.4 Woodland Heights

The Woodland Heights water system has 21 active water connections. Woodland is supplied by a well pump and has a water storage reservoir that supplies water when the well pump is not operating.

Some data was lost in the second half of 2020 due to a well failure. The data was approximated by using data from previous years which is helpful for annual consumption, but does not accurately show trends when looking at monthly consumption for the year 2020. A new well came on line late in 2022 and resulted in some lost consumption data.

Woodland Heights does not have any agriculture, golf courses, commercial uses and the lots are small on average (0.25 – 0.7 acres). However, consumption per connection is high at 1476 L/day. The summer to winter demand ratio is high suggesting that a large amount of water is being used to water lawns in summer. In the summer of 2022 water system operators reported average use of 4000 L/day per connection at which point staff issued a water conservation reminder on August 2, 2022.

Woodland Heights is not a metered system.

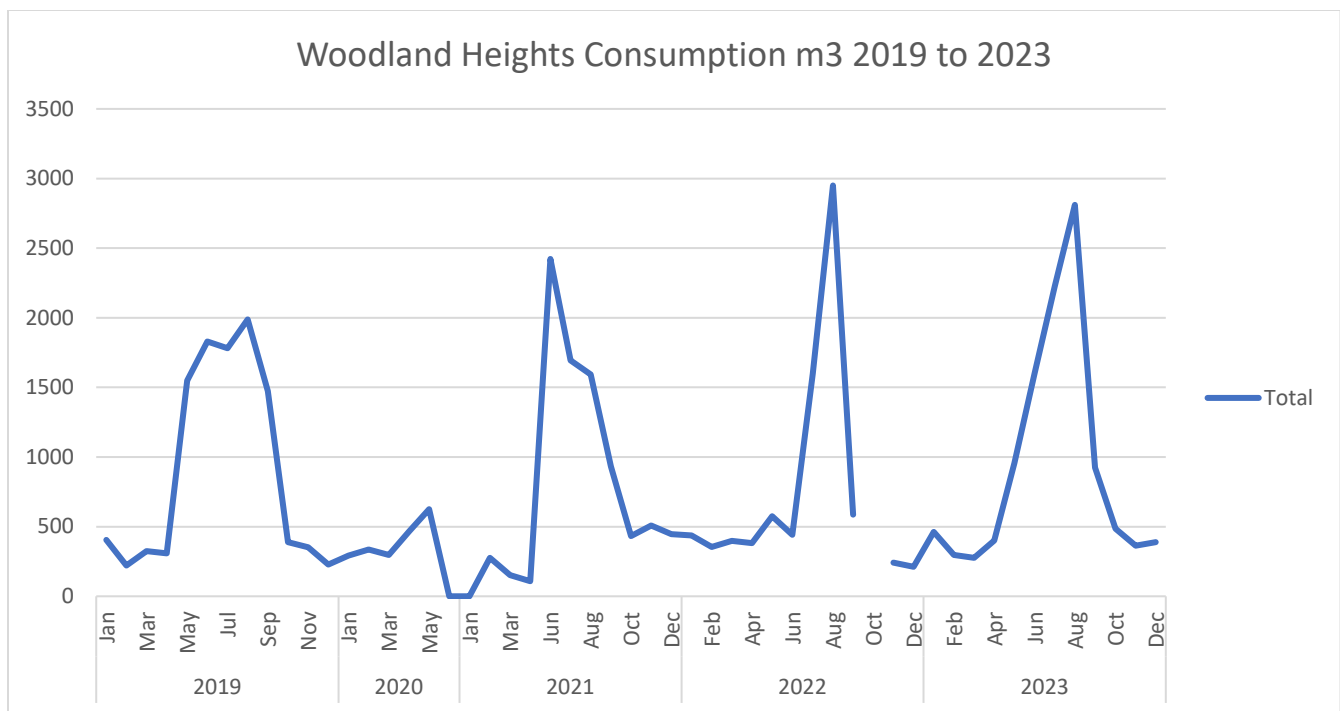


Figure 3-10 Woodland Heights Monthly Consumption

3.2.5 Erickson

The Erickson water system uses source water from Arrow Creek. Erickson is an agricultural area and treated water is used for agricultural purposes, mostly orchards. As a result, there are extreme differences between consumption in summer months when crops are irrigated, and winter months when irrigation systems are turned off. Figure 3-11 shows that winter use in Erickson is typically below 50,000 m3 per month but increases to over 300 000 m3 in during the growing season.

A major capital infrastructure project to replace the Arrow mainline was completed in 2017. It appears from the overall decrease in winter monthly consumption from 2013 to 2020, that the Arrow transmission line replacement project reduced leakage. Although not apparent in the data, some of the leakage reduction achieved with the transmission line replacement could now be offset with increased leakage in the aging Erickson distribution system. The Erickson water system is aging and a night flow analysis during non-irrigation periods is recommended to review potential system leakage.

The Erickson water system is partially metered. Grant money has been secured to install more water meters on Agricultural, Industrial, Commercial and Institutional properties over 5 acres in size. These meters will help collect data on how water is being used and identify private side leakage. The meters are expected to be installed in 2025.

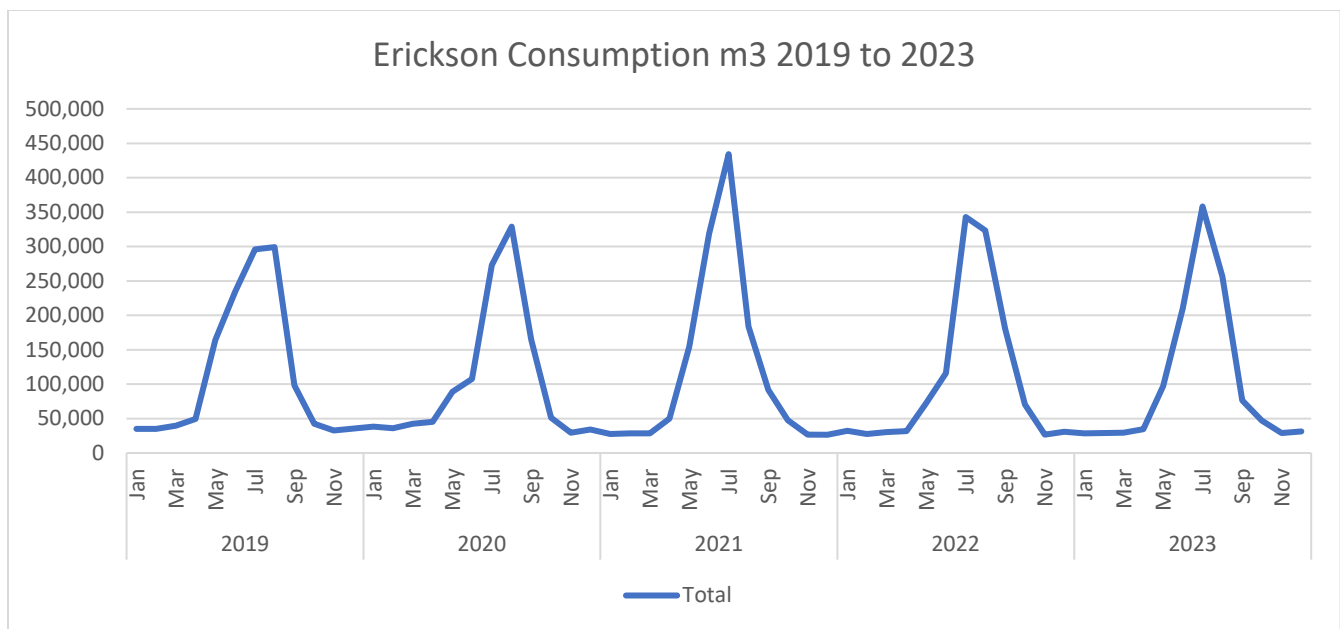


Figure 3-11 Seasonal Water Use in the Erickson Water System.

3.3 Low Per-Connection Water Use

3.3.1 Woodbury

The Woodbury water system has seen an increase in overall consumption since 2019. The number of service connections has increased from 34 to 41 during the reporting period, which has likely contributed to the increase. There may also be more year round residents living in the service area. Despite the increase, the per-connection consumption remains relatively low at 683 L/Day, which is very close to the Canadian average. Woodbury is an engaged community with members who volunteer to collect water quality and consumption data.

The Woodbury water system received a new water treatment plant in 2023. Data was lost during the transition at the end of 2023 when the old flow meter was removed and a new meter was not yet on line.

The Woodbury water system is not metered.

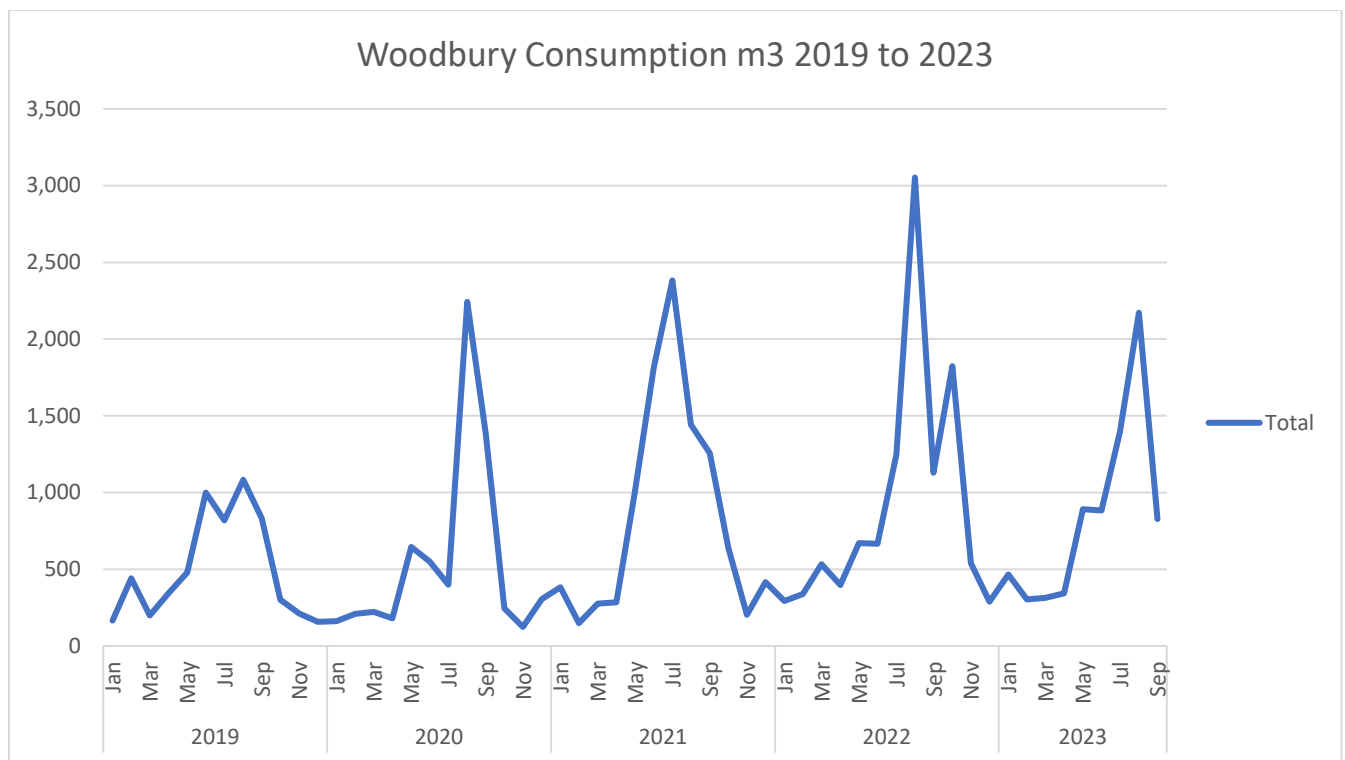


Figure 3-12 Monthly Consumption Woodbury Village

3.3.2 Ymir

The Ymir water system has consistently been one of the lowest water users per connection over the past two reporting periods. At 685 L/day Ymir is lower than the Canadian average. Ymir uses water from Quartz Creek. The watershed has been identified as being vulnerable to proposed forest harvesting. The community of Ymir has advocated for watershed protection for the past few years. A Natural Asset Management Plan will be completed for the Quartz Creek watershed in 2025.

The Ymir water system is not metered.

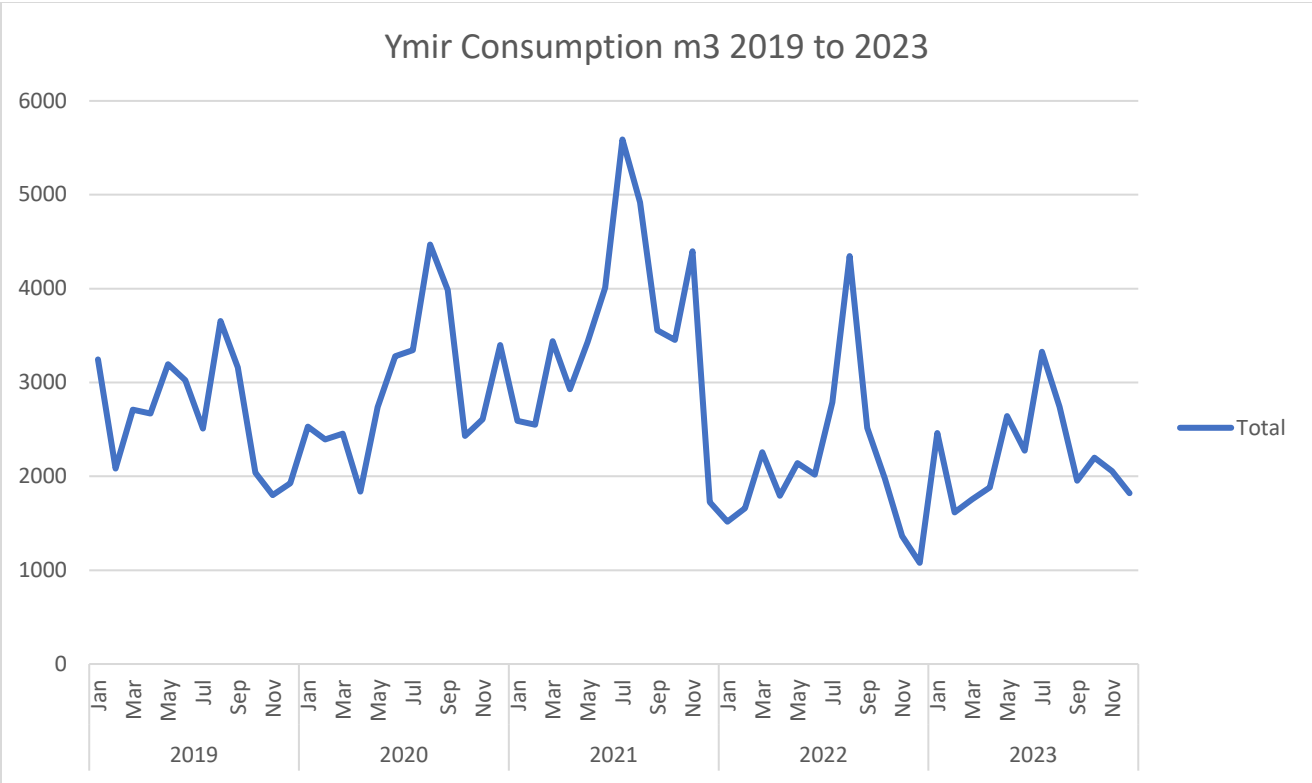


Figure 3-13 Ymir Monthly water consumption



Figure 3-14 Quartz Creek Intake in Ymir

3.3.3 Lucas Road

The Lucas Road is the RDCK's smallest water system. Per-connection water use was 667 L/day in 2023. The RDCK receives quarterly consumption reports from the City of Castlegar when the water invoice is received for that system. As a result, the graph in Figure 3-14 shows quarterly consumption.

The Lucas Road water system is metered and billed quarterly.

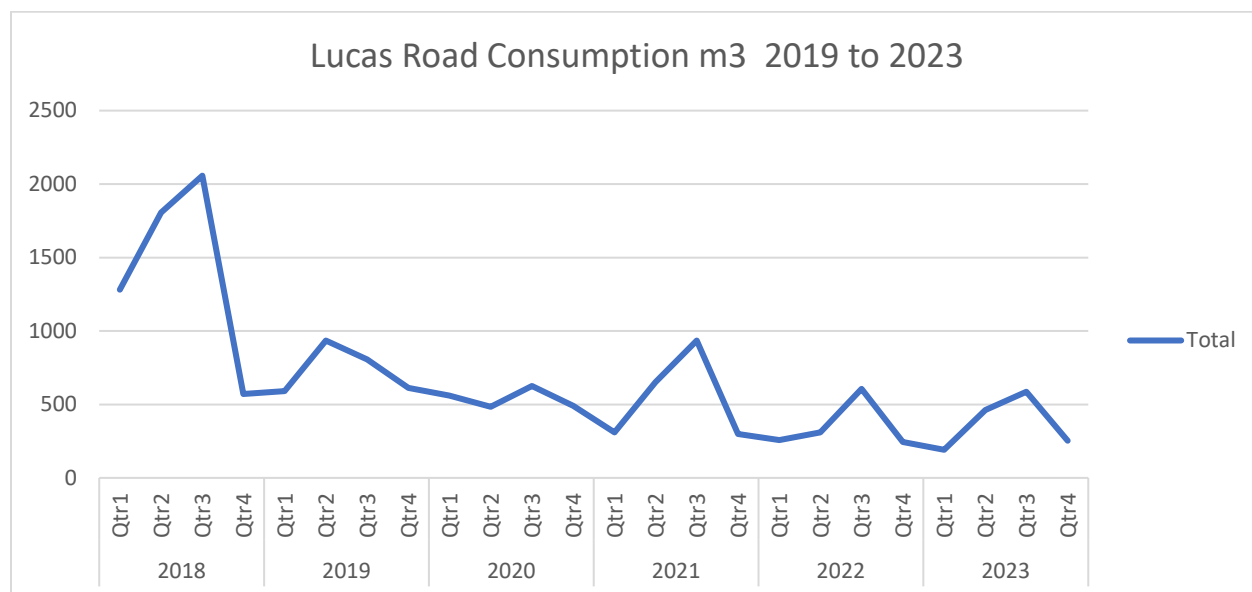


Figure 3-15 Quarterly consumption for Lucas Road

3.4 Golf Courses

The Riondel and Fauquier water systems have golf courses that use treated water for irrigation. These golf courses have meters to collect consumption data but do not have metered billing.

In Fauquier and Riondel, data collected in the Beacon/Badger software prior to 2023 was lost when a meter was replaced for an existing account. Some consumption data still exists in Tempest and was used in the report to quantify consumption in those two systems. 2023 data was also used as it is available and at the time of reporting (November), irrigation in the golf courses has been turned off.

3.4.1 Riondel Golf Course

The Riondel Golf Course water consumption data is available only for the years 2021 and 2023, during which the course used approximately 17,000 m³ annually—equivalent to about 10% of Riondel's total water consumption. Given the limited system and emergency capacity of the Riondel water system, the removal of the golf course connection has been a longstanding recommendation. With the recent issuance of a provincial water licence and plans for the golf course to construct its own system and transition to using lake water by Q4 2027, it is anticipated that its irrigation demands on the Riondel water system will be addressed. The golf course is currently billed on an annual flat-rate basis.

3.4.2 Fauquier Golf Course

Fauquier Golf Course consumption data is partially available for the reporting period. Use was very high during the years 2021 and 2022 averaging approximately 35,000 m³. This was approximately 30% of total consumption for those two seasons. During 2023, there was a significant reduction, with the Fauquier golf course consuming 7,558 m³. This is approximately 6.3% of the 2023 total water consumption. The decrease in consumption is likely due to leak repairs that took place during the summer of 2023. The Fauquier golf course is billed on an annual flat rate.

3.4.3 Balfour Golf Course

The Balfour Course does not use treated water from the water system to irrigate the greens. Water is only used for the clubhouse. Average water consumption per year over the reporting period for the clubhouse was 701 m³/year. Balfour has metered billing as therefore pays a quarterly base charge for water consumption up to 100 cubic meters per quarter, and a consumption charge over that amount.

3.4.4 Creston Golf Course

The Creston Golf Course sits on the edge of the Lister Water Service Area. The club house is connected to the Lister service, but the greens are not. Therefore, water consumption is not included for this golf course.

Table 6 - 2019–2023 Water Consumption Summary Matrix – All RDCK Water Systems

Water System	# Connections	2023 Use (m³)	% Change in Water Consumption (2022–23)	Peaking Factor	MDD vs Capacity	Drought Sensitivity	Key Observations	Risk Level	Recommended Actions
Arrow Creek	656 in the Erickson System TOC - 3,056 residential connections plus 239 ICI connections	2,683,623	↓ -6%	8.9	Exceeded (MDD exceeded Emergency Capacity 3 times in 2023)	Severe	MDD > emergency capacity (290 L/s); record-low streamflows; high ag demands and environmental flow concerns related to seasonal low baseflows.	High	Continue to explore alternate water supply for agriculture via advancing and continuing the design development of the Creston Valley Agricultural Water Supply Study recommendations, monitor peak usage, encourage water conservation.
Riondel	198	167,420	↑ +35%	2.1	Exceeded	Moderate	MDD = 14 L/s > Emergency Capacity of 10 L/s; golf course = ~10% of volume; Golf Course lake licence approved but requires implementation of infrastructure works	High	Support Golf Course irrigation transition to lake water source; Water use education including adherence to summer water conservation measures
Erickson	656	1,228,083	↓ -5%	6.0+	see Arrow Creek	Very High	Agricultural irrigation drives high peaking; partial metering in place and more to come as metering installation rolls-out.	Medium	Complete metering; promote irrigation efficiency. Explore alternate water supply for agriculture via continued design development of the Creston Valley Agricultural Water Supply Study recommendations
Duhamel Creek	93	100,629	↑ +9%	3.6	Within	Moderate	Per connection water use is very high. High summer demand due to residential outdoor watering use	Low-Med	Water use education including adherence to summer water conservation measures
Burton	54	71,960	↑ +6%	2.8	Within	High	Per connection water use is very high School irrigation, orchard irrigation, campground influences peak demand	Medium	Water use education including adherence to summer water conservation measures
Lister	196	206,673	↑ +1%	2.7	Within	Moderate	Mixed residential/ag use; steady demand; metered dairy connection	Low-Med	Continue monitoring; Water use education including adherence to summer water conservation measures
Balfour	265	105,932	↓ -3%	2.6	Within	Moderate	Golf course not connected to treated supply; moderate summer peaking	Low	Water use education including adherence to summer water conservation measures; maintain current monitoring
Fauquier	93	119,440	↑ +4%	2.7	Within	Moderate	Golf course uses potable water; large share of system demand	Medium	Water use education including adherence to summer water conservation measures
Edgewood	92	80,545	↓ -39%	2.4	Within	High	2021 high demand possibly due to precautionary structure protection sprinkling for wildfire. Recent leak repairs and general reduction in per-connection consumption from 2022-2023.	Low-Med	Continue monitoring; Water use education including adherence to summer water conservation measures

Table 6 Cont'd - 2019–2023 Water Consumption Summary Matrix – All RDCK Water Systems

West Robson	114	77,957	↑ +13%	3.3	Within	Moderate	Moderate per-connection use; small system but consistent peaking	Low-Med	Review seasonal use patterns; leak detection
South Slokan	50	29,349	↑ +15%	1.1	Within	Low	Low peaking factor; steady use; minimal seasonal variation	Low	Replacement of aging distribution system as per asset management plan and as funds are available.
Ymir	108	27,291	↑ +7%	1.3	Within	Moderate	Lowest per-connection use; community engaged in watershed protection	Low	Support watershed protection work; maintain current approach
Woodland Heights	21	11,186	↑ +27%	6.8	Within	Low	High summer residential use for outdoor watering despite smaller lot sizes	Low	Educate on seasonal conservation; monitor trends
Grandview	37	16,833	↑ +14%	2.6	Within	Low	Small system; metered billing; steady growth	Low	Continue metered billing; monitor seasonal trends
Woodbury	41	7,599	↓ -44%	4.7	Within	Low	New WTP in 2023; low per-connection use; engaged community	Low	Maintain status quo; support community participation
Rosebery	9	10,244	↑ +20%	8.2	Within	Moderate	High peaking despite small size; partial occupancy area	Low	Educate on seasonal conservation; monitor trends
Lucas Road	6	1,493	↑ +5%	1.5	Within	Low	Smallest system; fully metered; stable use	Low	Maintain monitoring and metered billing



Annual Water Consumption Report

2020-2024

Presented by: Eileen Senyk
Date: March 2025

rdck.ca



Outline

- 1** Overview
- 2** Drought Conditions Summary 2019 – 2023.... And a look ahead for this year
- 3** Total Consumption for Water Systems
- 4** Average Day Demand and per Connection Use
- 5** Summer vs Winter Demand
- 6** Emergency Capacity
- 7** Systems of Concern



Overview

The Regional District owns 18 water services that vary in size from 6 to 683 connections, resulting in a large variation of annual consumption.

Overall, there was a decrease in water consumption in most RDCK water systems between 2020 and 2024. Nine (9) systems saw an overall decrease in consumption over the reporting period.



2019 - 2023 Reporting Period – Drought Conditions Summary

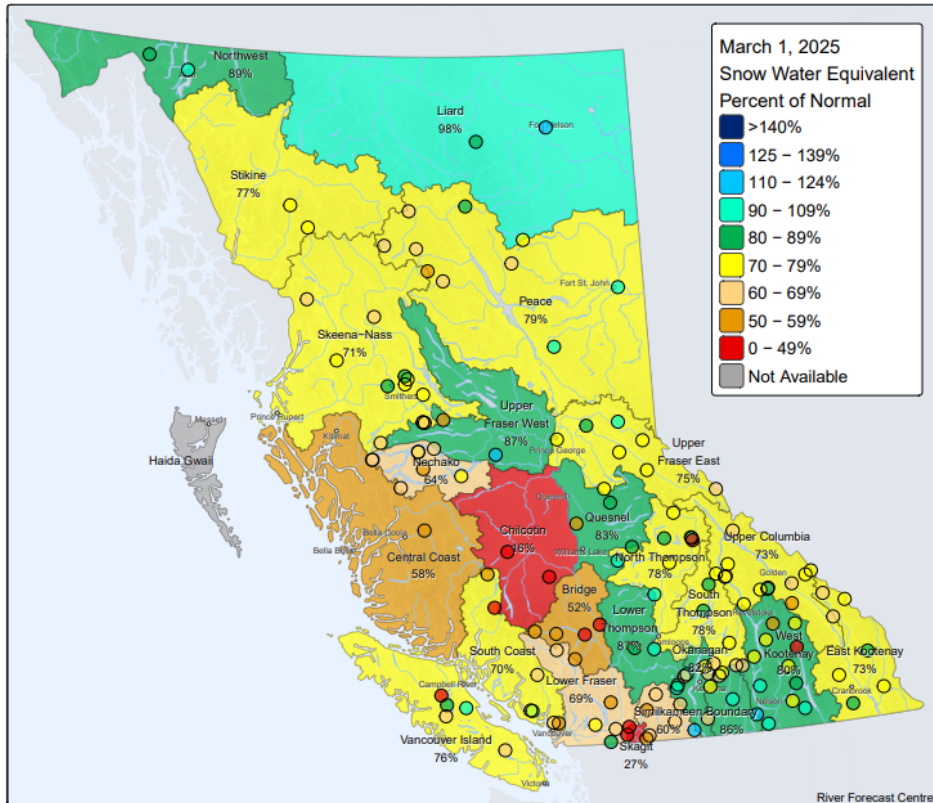
Level	Impacts
0	There is sufficient water to meet socio-economic and ecosystem needs
1	Adverse impacts to socio-economic or ecosystem values are rare
2	Adverse impacts to socio-economic or ecosystem values are unlikely
3	Adverse impacts to socio-economic or ecosystem values are possible
4	Adverse impacts to socio-economic or ecosystem values are likely
5	Adverse impacts to socio-economic or ecosystem values are almost certain

B.C. drought levels. (Courtesy B.C. Government)

Year	Drought Level					Drought Summaries
	May	June	July	August	September	
2015	1	2	2	4	3	Significant drought, early snowmelt, high temperatures, peak in late August before rain mitigated.
2016	1	1	2	2	2	Moderate drought, less severe than 2015.
2017	1	1	2	4	3	Prolonged dry conditions, exacerbated by wildfires.
2018	1	2	3	3	2	Hot, dry summer with near-record drought levels in some areas.
2019	1	1	2	3	2	Milder but still faced dry spells during summer months.
2020	2	2	3	4	3	Persistent dry conditions, southern BC faced water restrictions.
2021	1	2	3	4	3	Widespread drought due to record heat waves and minimal rainfall.
2022	1	2	2	3	2	Moderate drought, less severe but dry summer conditions persisted.
2023	3	4	4	4	3	Prolonged, severe, impactful, and province-wide. Existing drought conditions from the year before were exacerbated by extreme, record-breaking heat in May which led to the fastest melt of snowpack on record, together with warm weather and far below normal precipitation through June and July for most of the province. This led to extended, multi-year drought conditions unique to the past century in both duration and severity, and resulted in historically low flows in numerous river systems
2024	1	1	1	3	3	In 2024, the West Kootenay began the year with record low snowpack levels—63% of normal on April 1st—raising early concerns about water supply. Although cooler temperatures and widespread precipitation in late May and early June helped moderate melt rates and provided temporary relief, a summer heatwave and variable rainfall led to renewed drought stress. By August and September, drought conditions in the region intensified to Level 3. Despite fall storms in mid-September bringing above-normal precipitation to parts of B.C., long-term deficits in groundwater and streamflow persisted in many interior regions, including parts of the Kootenays.



Looking Ahead for 2025 – Current Snowpack Conditions



B.C. Snow Station Map – Percent of Normal

•What is SWE?

•Snow Water Equivalent (SWE) is the amount of water contained within the snowpack essentially the depth of water that would result if the snow melted instantaneously.



•What does "percent of normal" mean?

•"Percent of normal" compares the current SWE to the median SWE value for that specific date based on historical data (typically 1991-2020).

•Current Conditions:

•The current SWE in Nelson, BC, is below normal, falling between 70% and 90% of the historical median for this time of year

•As of March 28, 2025, in Nelson, BC, the snow water equivalent (SWE) is between 70% and 90% of the median SWE value for this time of year, compared to historical conditions from 1991-2020.



Total Water Consumption

Water System	No of Active Connections	2020 Annual Consumption (m3)	2021 Annual Consumption (m3)	2022 Annual Consumption (m3)	2023 Annual Consumption (m3)	2024 Annual Consumption (m3)	% Change 2023 to 2024
Arrow Creek		2,784,728	2,928,342	2,852,008	2,683,623	2,738,129	2
Town of Creston		1,544,230	1,509,794	1,567,173	1,455,540	1,469,439	1
Erickson	653	1,240,498	1,418,548	1,284,835	1,228,083	1,268,690	3
Lister	196	229,660	237,409	204,817	206,673	207,068	0
Edgewood	92	107,445	104,977	112,053	80,545	56,349	-43
Balfour	265	119,760	124,976	109,461	105,932	100,984	-5
Riondel	214	111,724	119,880	108,636	167,420	113,903	-47
Duhamel Creek	93	163,242	95,424	91,063	100,629	87,530	-15
Burton	54	49,145	54,432	67,564	71,960	51,389	-40
West Robson	114	64,382	71,655	67,527	77,957	65,594	-19
Ymir	108	35,471	42,582	25,455	27,291	25,958	-5
South Slocan	50	35,709	34,580	24,792	29,349	23,344	-26
Grandview	68	13,427	11,936	14,414	16,833	35,549	53
Woodlands	21	8,392	8,567	8,173	11,186	11,507	3
Lucas Road	6	2,158	2,194	1,419	1,493	1,484	-1



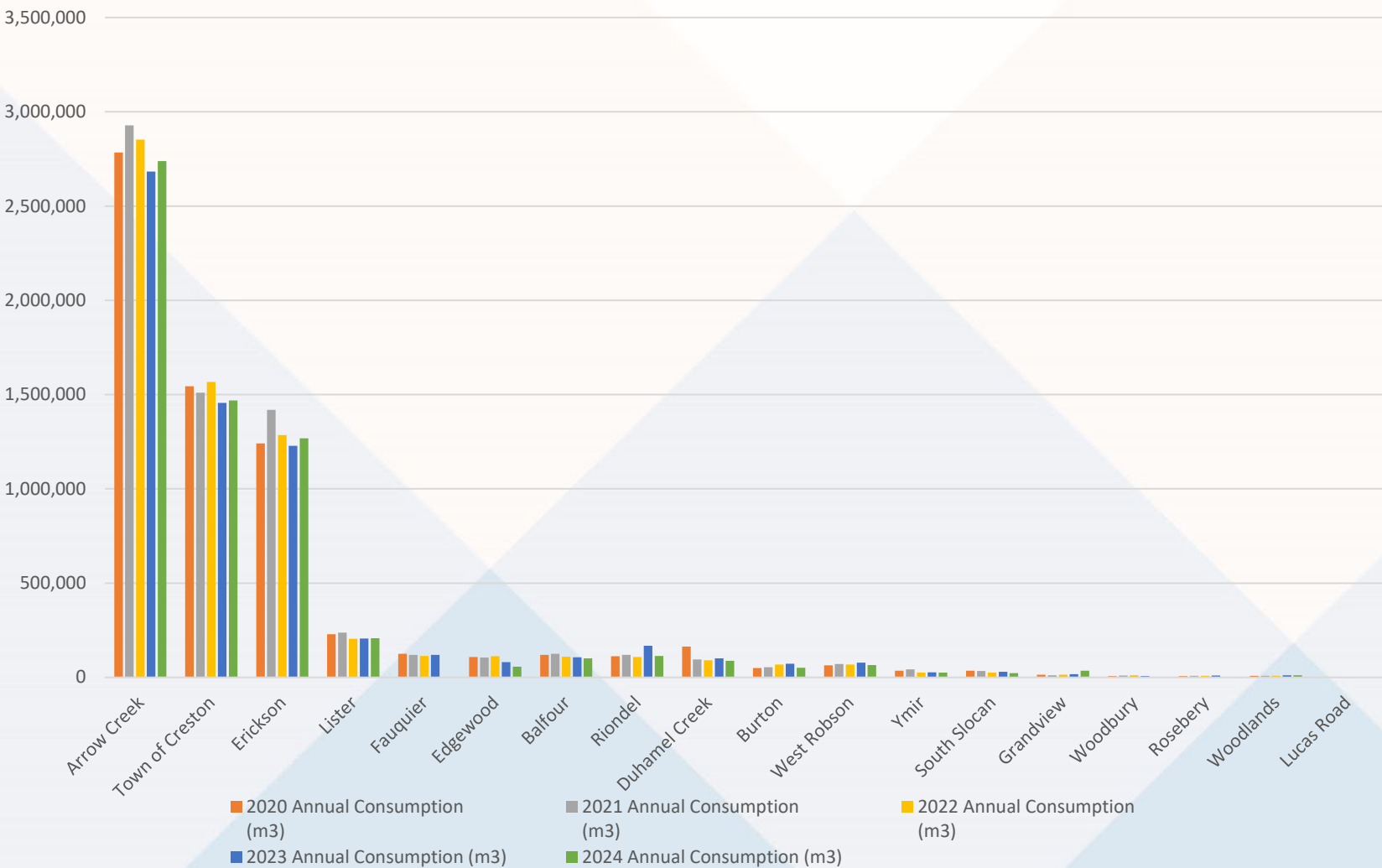
Notable Reductions in Consumption:

System	Percent Change
Riondel	-47%
Edgewood	-43%
Burton	-40%
South Slocan	-26%
West Robson	-19%
Duhamel Creek	-15%

2024 Comparison Chart 2020 – 2024 All Systems



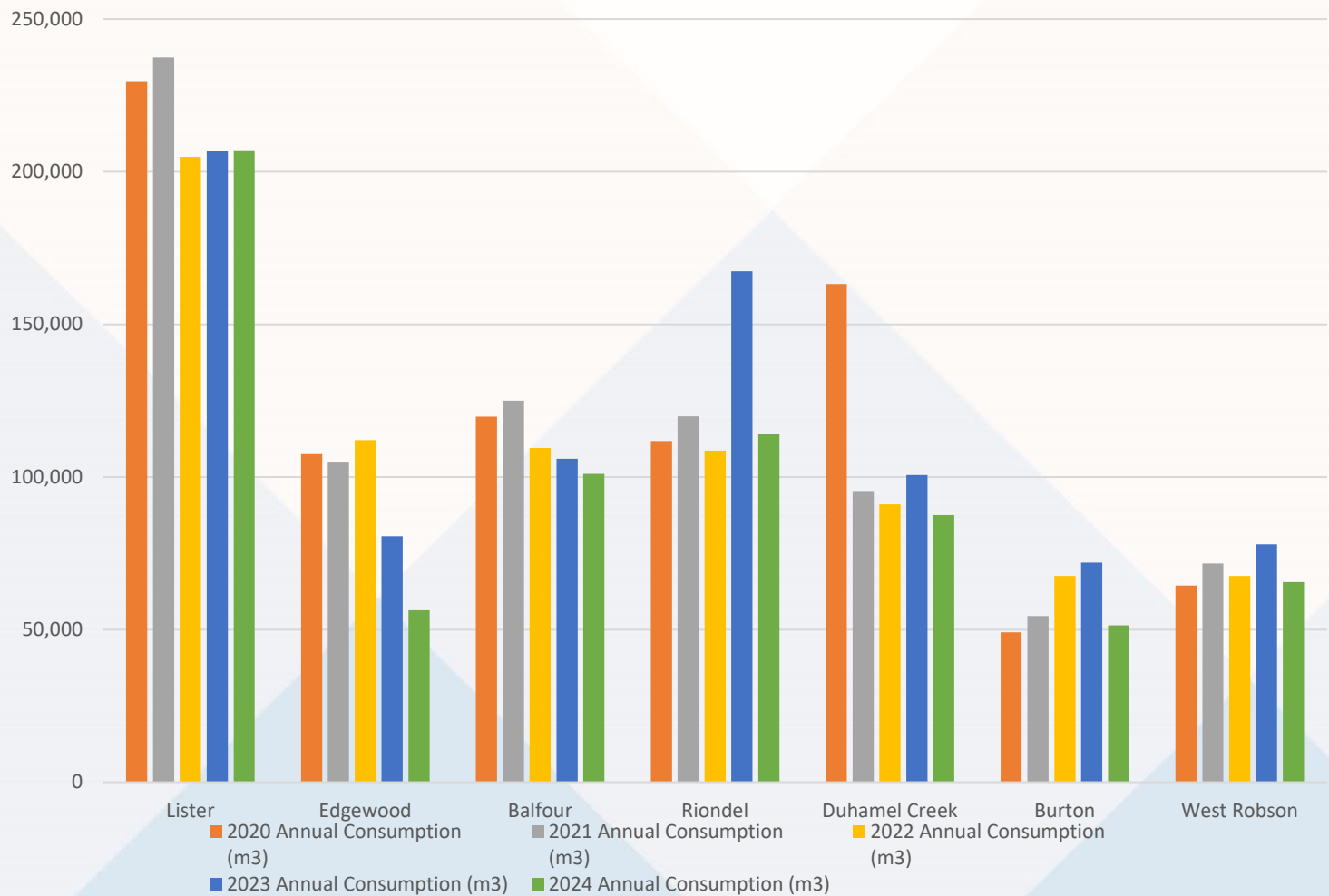
Summary of Regional District annual water systems and Town of Creston consumption from largest to smallest.





Annual consumption for systems
50,000 to 300,000 m3.

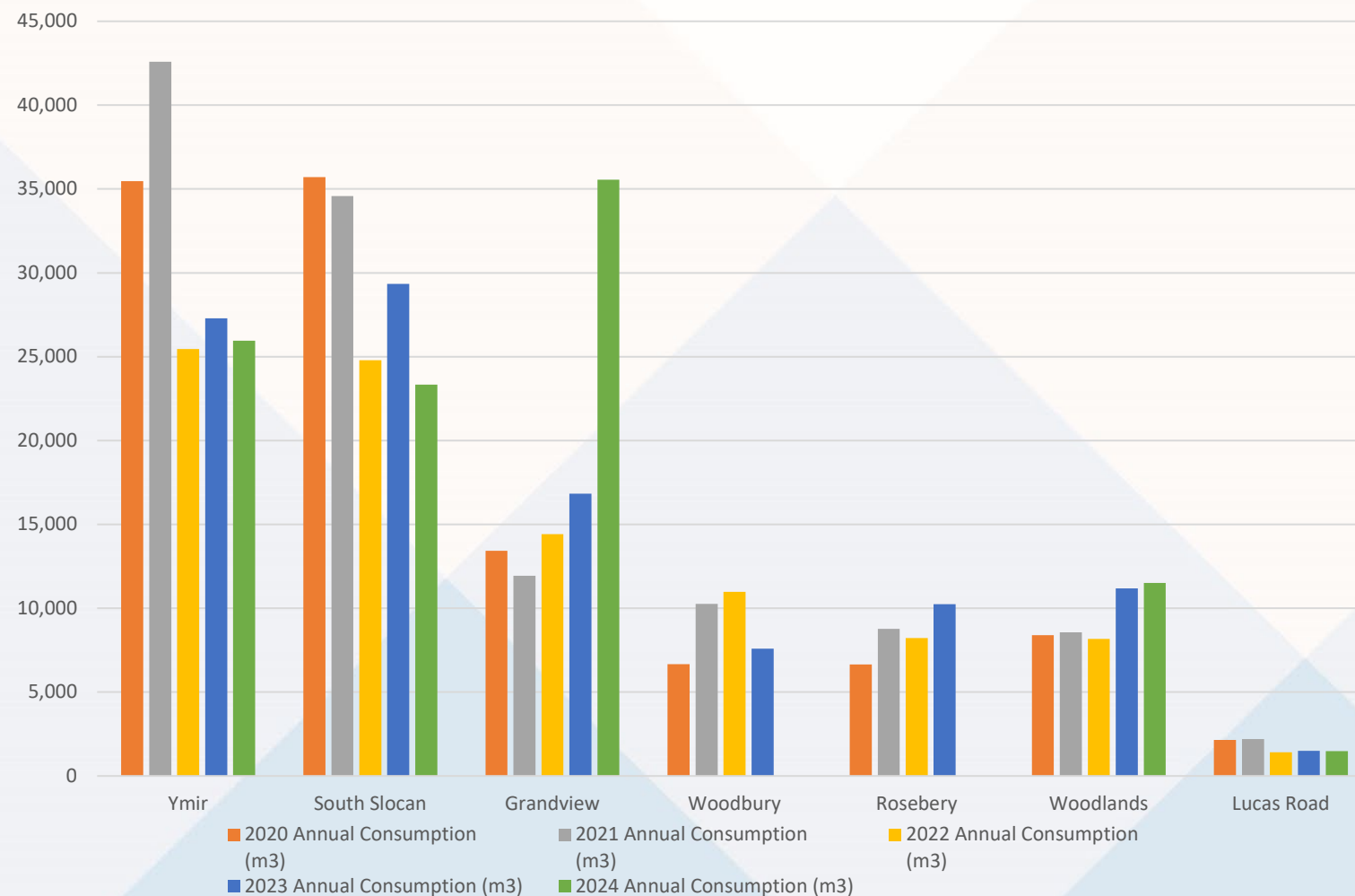
2024 Comparison Chart 2020 – 2024





Annual consumption for systems less than 50,000 m3.

2024 Comparison Chart 2020 - 2024





Average Day Demand and Per-Connection Consumption

Per-capita per day water consumption is typically used to quantify use. The Canadian average in 2021 was about 223 Liters per Capita per day.

Population data is not available for Regional District water service areas to make a comparison. Regional District consumption is measured per-connection. To derive per-connection consumption, the Canadian average amount is multiplied by 2.2 which is the Canadian Census data for the average number of residents per household in our region. Given this, average Canadian household consumption is 490 L/Day.

Water System	No of Active Connections	2024 ADD (m3)	2024 ADD Consumption per Connection per Day (L)
Erickson	655	3,475	5,305
Lister	196	567	2,893
Burton	54	141	2,611
Duhamel Creek	93	240	2,581
Grandview	43	97	2,256
Edgewood	92	154	1,674
West Robson	114	180	1,579
Riondel	198	312	1,576
Woodlands	21	32	1,524
South Slocan	50	64	1,280
Balfour	265	277	1,045
Lucas Road	6	4	667
Ymir	108	71	657

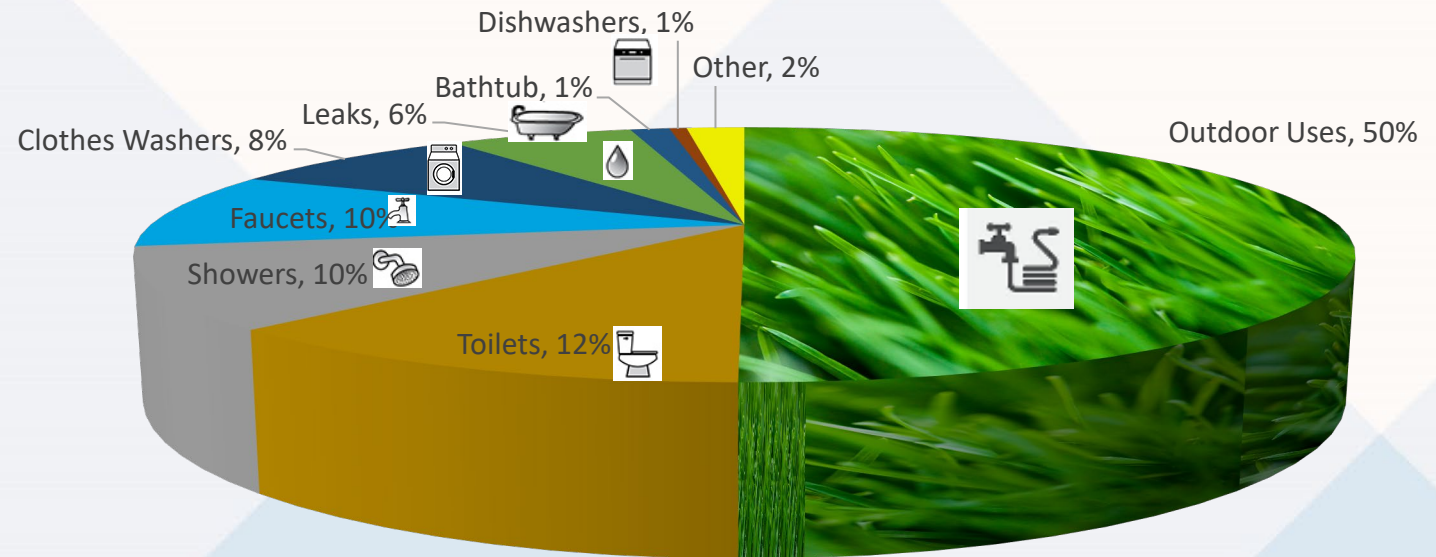


Reviewing summer demand vs winter demand can provide an indication of outdoor water use or potential leakage. Winter consumption can be used to typically represent indoor water consumption. Summer consumption represents both indoor and outdoor water consumption. Outdoor water use in the Regional District is generally high due to large property sizes and some agriculture.

Summer vs. Winter Water Demand

Residential Average Water Use

(Utility Services - Tabulation of data from Residential End Uses of Water, Version 2 (2016) Water Research Foundation)





Summer vs. Winter Water Demand in Litres per Day

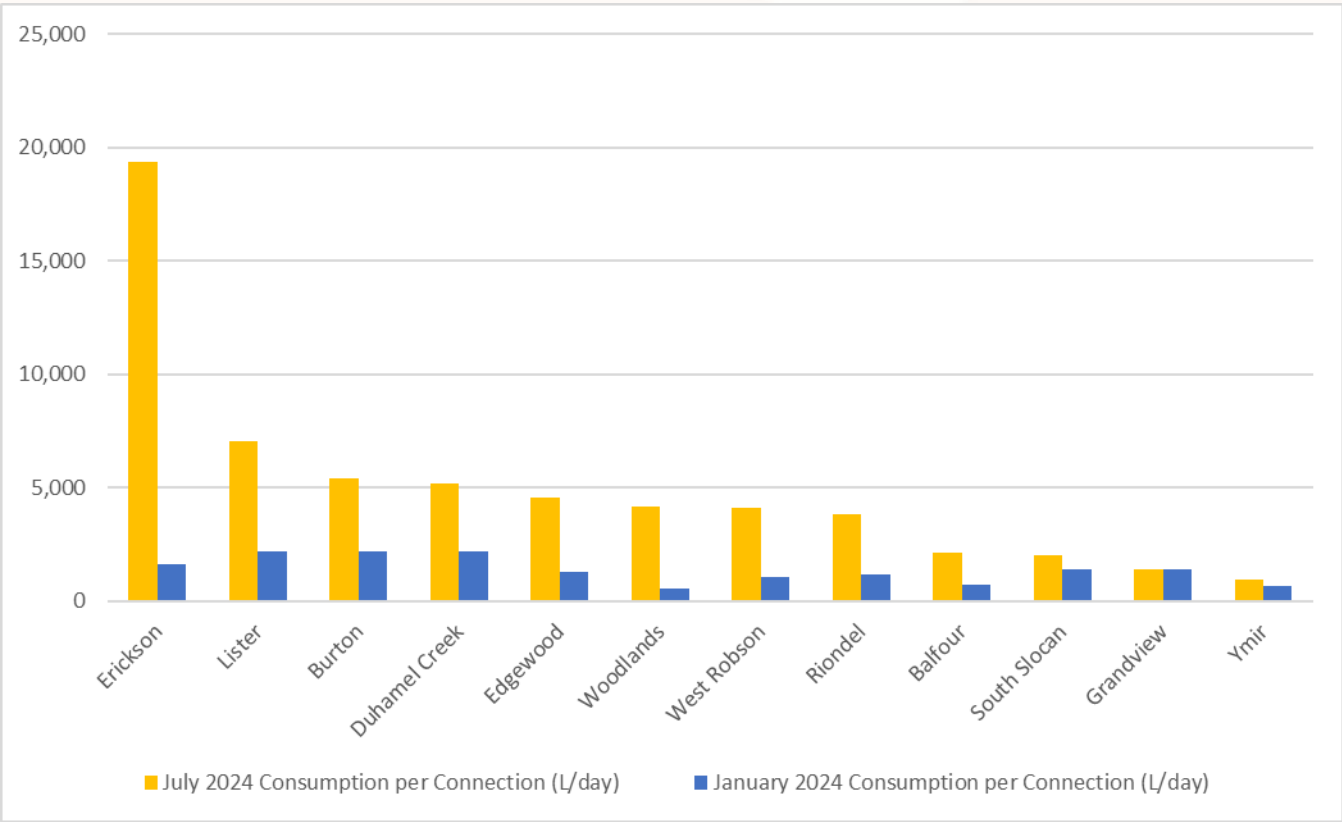
Water System	No of Active Connections	July 2024 Consumption (m3)	January 2024 Consumption (m3)	July 2024 Consumption per Connection (L/day)	January 2024 Consumption per Connection (L/day)	Peaking Factor (July 2024 / Jan 2024)
Erickson	653	392,352	32,644	19,382	1,613	12.0
Lister	196	42,694	13,167	7,027	2,167	3.2
Burton	54	9,071	3,664	5,419	2,189	2.5
Duhamel Creek	93	14,911	6,316	5,172	2,191	2.4
Edgewood	92	12,947	3,724	4,540	1,306	3.5
Woodlands	21	2,704	366	4,154	562	7.4
West Robson	114	14,604	3,684	4,132	1,042	4.0
Riondel	198	23,394	7,336	3,811	1,195	3.2
Balfour	265	17,415	6,050	2,120	736	2.9
South Slocan	50	3,107	2,144	2,005	1,383	1.4
Grandview	68	2,938	2,938	1,394	1,394	1.0
Ymir	108	3,107	2,144	928	640	1.4



Quantities of water used in L/day

Higher winter consumption may indicate leaks.

Summer (July) vs. Winter (January) Demand



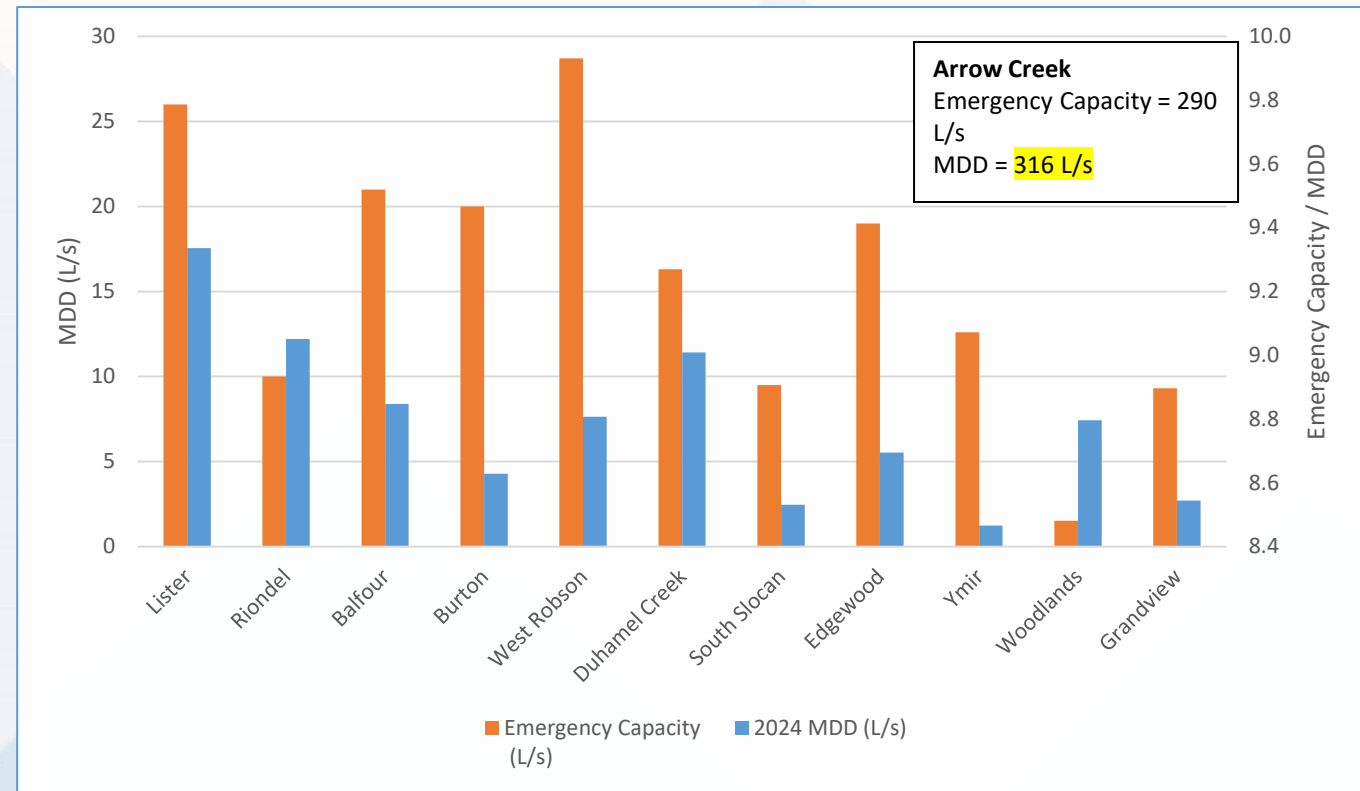


Pumping and treatment systems should be provided with redundant major components in the event that one of the components fails, such as pumps, filters, and disinfection systems.

Emergency capacity includes operation of backup systems to increase capacity.

Emergency Capacity and Maximum Day Demand

Water systems' pumping and treatment capacity are typically designed to meet maximum day demand (MDD). MDD represents the maximum water consumption for a single day of the year.



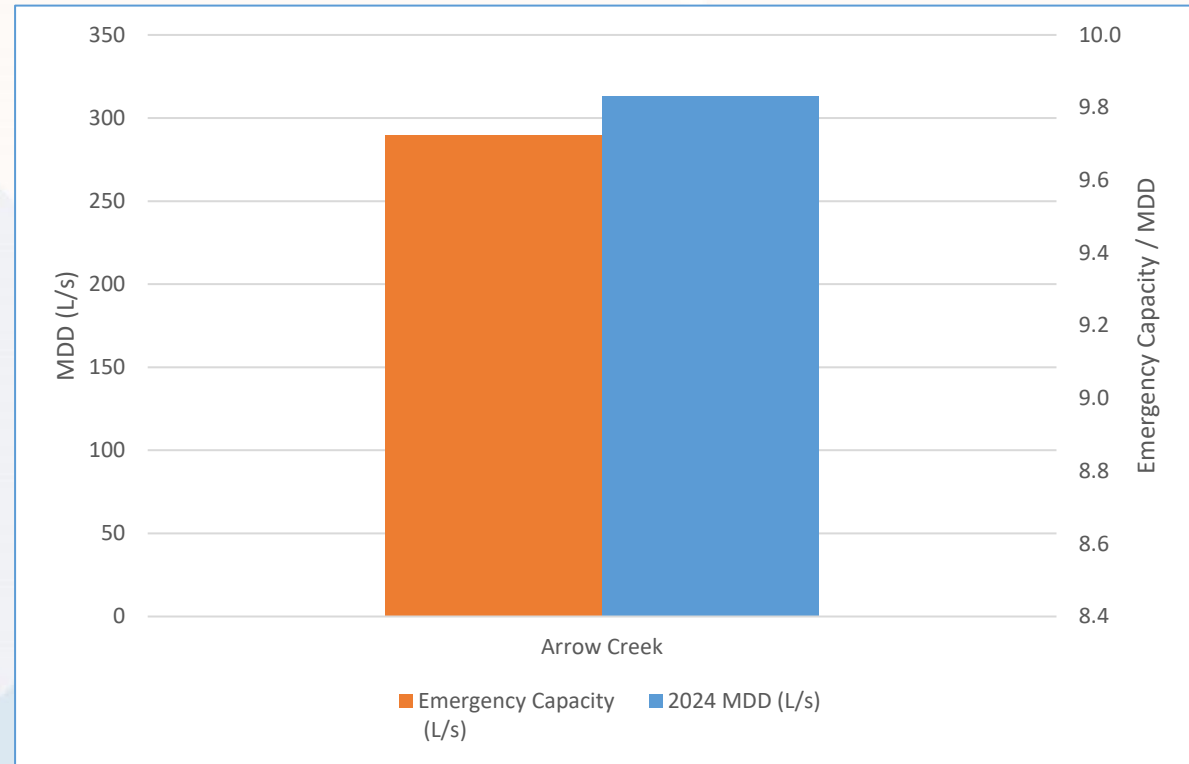


Emergency Capacity and Maximum Day Demand

Arrow Creek

Pumping and treatment systems should be provided with redundant major components in the event that one of the components fails, such as pumps, filters, and disinfection systems.

Emergency capacity includes operation of backup systems to increase capacity.

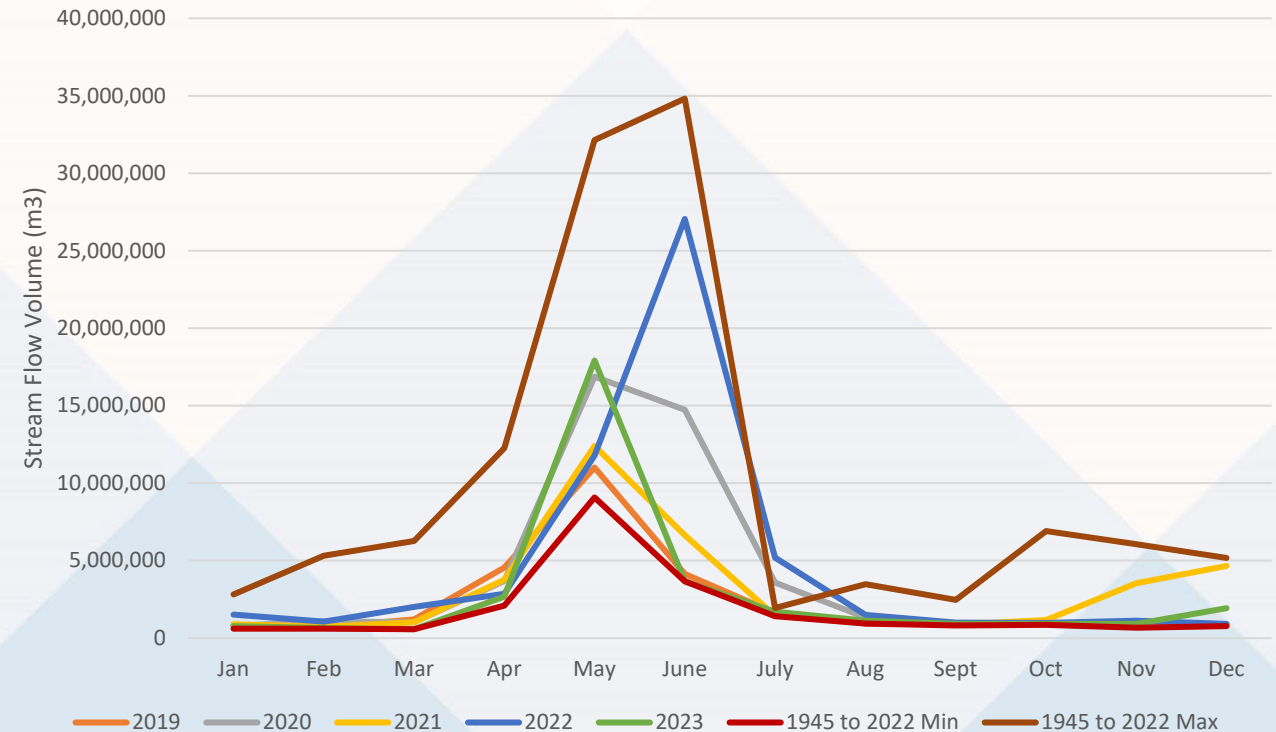




Arrow Creek:

- Vulnerable creek levels that have seen both near record high and record low stream flows in the reporting period.
- Historical monthly hydrometric data is not yet available from Environment Canada for 2024, therefore, data from 2023 is presented here.

Arrow Creek Flows

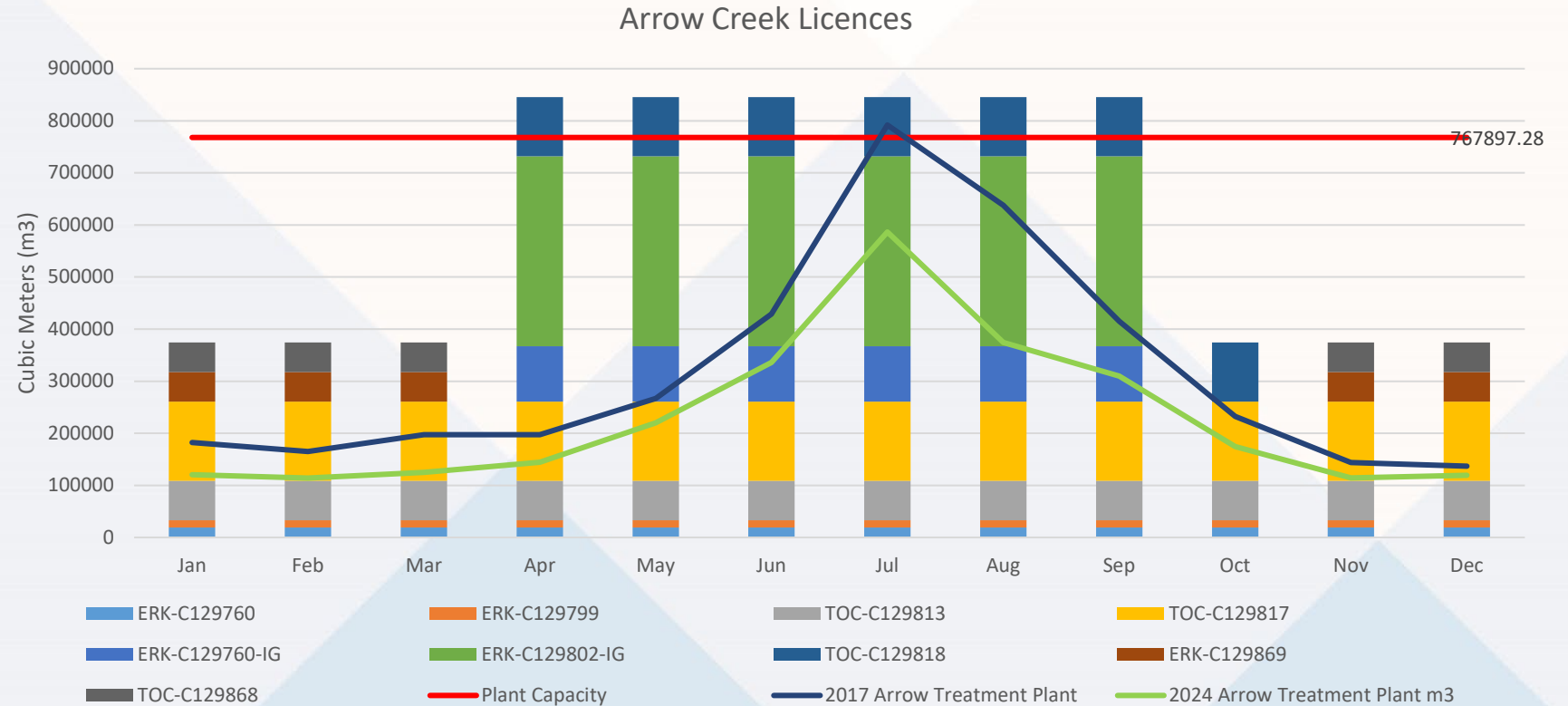




Arrow Creek Water Licenses

Arrow Creek

Potential for water license exceedance in July when demand is highest and October when irrigation licenses are no longer available. Demand has decreased significantly since the peak year of 2017.





Water Systems of Concern

Riondel and Woodland Heights

Maximum Day Demand is higher than emergency capacity.

Arrow Creek

Arrow Creek Emergency Capacity vs. Max Day Demand

Emergency Capacity: 290 L/S

2024 Maximum Daily Demand: 313 L/S

Emergency Capacity was exceeded on nine (9) days between July 7 and July 24, 2024



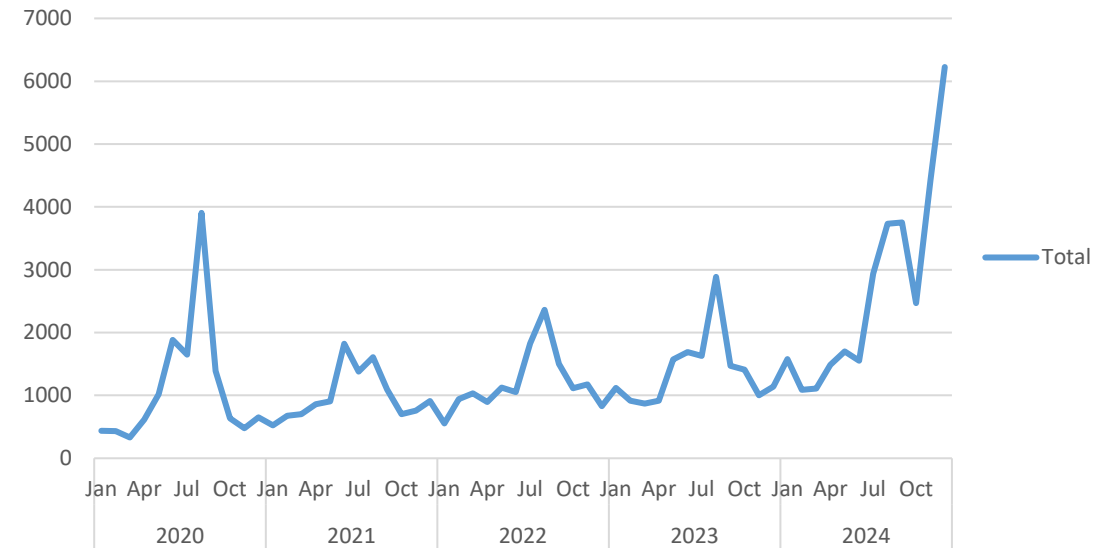
Water Systems of Concern

Grandview

Consumption is higher in November and December than in the summer months indicating one or more leaks.

A major lead was identified in early 2025 and was Repaired.

Grandview Consumption 2020 - 2024 m3





System-Specific Information in the Report:

- High Winter Water Demand, Seasonal Peaks and Increasing Water Use
- Low Per-Connection Water Use
- Golf Courses



Please let us know if you would like to see specifics regarding particular water systems.

Thank you!

rdck.ca



Committee Report

Date of Report: January 29, 2025
Date & Type of Meeting: February 12, 2025, Water Services Committee
Author: Alexandra Divlakovski, Water Operations Manager
Subject: OPERATIONS MAINTENANCE AND CAPITAL UPDATE
File: 11-5700-01-2025
Electoral Area/Municipality All Areas

SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to provide an update to the Committee and highlight the larger maintenance and capital projects completed to date in 2024/2025.

SECTION 2: BACKGROUND/ANALYSIS

This report does not necessarily include annual preventative maintenance. Examples of preventative maintenance include; equipment oil changes, distribution system flushing, distribution valve exercising, daily/weekly system checks, hydrant inspections, vegetation care and fleet management.

Abbreviations:

HMI – Human Machine Interface
MIT – Membrane Integrity Testing
PLC – Programmable Logic Controllers
SCADA – Supervisory Control And Data Acquisition
SRoW – Statutory Right-of-Way
WTP – Water Treatment Plant
RFP – Request for Proposal
BoD – Board of Directors

WATER EAST

Arrow Creek

Operations and Maintenance

- Membrane Filter Trains 1, 3 & 4 are currently not passing MITs. Train 2 is passing MITs and fibre repairs on Train 1 are almost complete.
- Train 1 suction pump had the flow starting to surge up and down when it was in production. The VFD was tested and was not an issue; the pump section has been removed and sent out to be inspected and tested by Mearl's Machine Works and has come back with no issues or repairs needed; the next step will be to replace the pump motor with a new spare we have in stock and that should resolve the problem.
- Annual overhead WTP crane and intake Jib Inspection
- Preventative maintenance on all WTP motors.

- Large furnace that heats the WTP process room had to be shut down due to a faulty gas valve and a hole in the heat exchanger. All Elements retrofitted a smaller decommissioned furnace used previously to heat the control room and redirected the ducting to blow heat down into the process room. The same will be done for a second smaller furnace previously used for heating chemicals rooms once the parts are in.
- Replacement of a 12" valve (leaking from the stem) on Train 1 and 3 old actuators.

Capital

- The RFP for the WTP Mechanical Upgrades has been issued and posted to BC Bid, closes February 20, 2025.
- The final report for the filtration feasibility study will be delivered by the consultant in February.
- An emergency replacement of the failing back pulse line, valve and tank will go forward with these being awarded to the various suppliers and contractors.

Ongoing Considerations

The Arrow Creek water treatment plant has historically reached maximum emergency rated capacity in high demand months (July-August).

Erickson

Operations and Maintenance

- Turned off several Ag services that were not shut off by the farmers and caused major leakage.

Capital

- Replaced 3 old meters and pits with new 2" x 60" tandem meter/DCVA pits as part of the Phase 1 metering project

Ongoing Considerations

Asbestos cement and steel pipe sections of distribution system require replacement and/or relocation off private land.

Lister

Operations and Maintenance

- Nothing to report

Capital

- Nothing to report

Ongoing Considerations

No irrigation privileges beyond 1 acre of domestic irrigation is allowed in Lister due to the existing high water demand of the system as compared to what the groundwater well can produce.

Riondel

Operations and Maintenance

- Acquiring a quote from electrical contractor to upgrade rusty metal joint boxes, conduit and receptacles inside the WTP, also to install a 240v plug for a new compressor for integrity tests as the old compressor motor is seized and ran on 120v. We are currently unable to complete integrity testing of membranes.
- Order two 4" hand operated butterfly valves to replace 2 old rusted valves in WTP.

Capital

- Design for Ainsworth Ave. storm water drainage replacement project underway.
- Design for Ainsworth Ave. water main installation to service 5 properties currently not connected to the water system underway.
- Continue in spring to get quotes on the Indian Creek intake top cover replaced and repair of the cement spalling on the intake and dam walls.

Ongoing Considerations

The golf course is a large water consumer, and the system would benefit from the golf course securing a separate water source.

Sanca

Operations and Maintenance

- Nothing significant in the reporting period.

Capital

- No capital projects completed in the reporting period.

Ongoing Considerations

This system remains on a long term Boil Water Notice. Proposed borrowing for a water treatment plant was presented to the community in 2016, however, it was not approved.

WATER WEST

Balfour

Operations and Maintenance

- Lake pump house generator had been damaged by rodents living in the enclosure, parts repaired and replaced. Generator back in service as normal.
- One service leak identified and isolated.

Capital

- RFP for Upper Balfour Road water main replacement issued and posted to BC Bid, closes February 20, 2025.

Ongoing Considerations

Metering has reduced consumption and identified customer leakage that was repaired, leading to an overall conservation of approximately 25% from 2019 - 2021. There remains system leakage that requires location and repair work.

Burton

Operations and Maintenance

- Exploratory excavations at three locations to day light the water main in order to confirm details of existing infrastructure for upcoming water main replacement.
- Fall distribution chlorination and flushing performed.

Capital

- Pre-bid tender meeting at site for water main replacement project, Invitation to Tender closes March 5, 2025.

Ongoing Considerations

The system is on a long term Water Quality Advisory due to historical water quality concerns. The groundwater source may be considered Groundwater at Risk of Containing Pathogens (GARP) virus only as it is within the 300m setback from a source of probable viral contamination. GARP virus only wells are identified as requiring 4-log reduction of viruses (disinfection) and zero total and fecal coliforms per Provincial treatment guidelines.

Duhamel

Operations and Maintenance

- Mag meter to measure well production/flow has failed, planning replacement.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

A significant portion of the distribution system is located on private land. Asbestos cement pipe within the distribution system requires replacement.

Edgewood

Operations and Maintenance

- Tree fell and landed on the pump house, has been removed and little damage to building structure.

Capital

- Generator installation and commissioning completed, unit now on line.

Ongoing Considerations

Old well abandonment or usage conversion to fire protection completed.

Fauquier

Operations and Maintenance

On line UVT analyzer has failed, in quoting process for a replacement.

Capital

- Consultant selected for design work of remaining water main to be installed along Oak Street.

Ongoing Considerations

Asbestos cement pipe within the distribution system requires replacement. UV disinfection was required by Interior Health at the time of treatment plant construction but at a later date. Piloting required to assess potential UV transmittance improvement before a UV system can be chosen.

Grandview

Operations and Maintenance

- Upper reservoir level transmitter communication is again operating intermittently, gathering quotes for replacement.
- One distribution leak in lower zone identified, need to wait for warmer weather or thaw to excavate repair as it is in gravel roadway.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

A higher occupancy rate for this system would improve financial sustainability.

Rosebery

Operations and Maintenance

- Nothing significant in the reporting period.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

A higher occupancy rate for this system would improve financial sustainability.

South Slocan

Operations and Maintenance

- One customer connection requiring a temporary shut off needs to have the service valve replaced, scheduled.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

The distribution system is comprised of aged materials, and likely has significant leakage.

Woodland Heights

Operations and Maintenance

- Nothing significant in the reporting period.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

Per capita consumption during summer months is highest in this system, and repeated reminders of adherence to Water Conservations Measures are necessary.

Woodbury

Operations and Maintenance

- System continues reporting and data collection for supporting filtration exemption.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

Community members wish to have non-(FUS) rated fire hydrants installed for increased capability of fire departments to fight fires in this remote location.

West Robson

Operations and Maintenance

- Lighting and heating improvements in both well houses addressed/repaired.

Capital

- Contract award for water main construction along Broadwater Rd. being presented to BoD.

Ongoing Considerations

Asbestos cement pipe in the distribution system requires replacement.

Ymir

Operations and Maintenance

- New more accurate level transmitter installed in the intake weir for creek flow monitoring.

Capital

- No capital projects work completed in the reporting period.

Ongoing Considerations

ATCO is planning a logging development in the Ymir Water System watershed. The RDCK is working with ATCO and the Ymir community on this issue.

SECTION 3: DETAILED ANALYSIS

3.1 Financial Considerations – Cost and Resource Allocations:

Included in Financial Plan:	☐ Yes	☐ No	Financial Plan Amendment:	☐ Yes	☐ No
Debt Bylaw Required:	☐ Yes	☐ No	Public/Gov’t Approvals Required:	☐ Yes	☐ No

All items mentioned in the body of the report are included in the 2024/25 financial plan.

3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

Some items listed in the body of the report require regulatory approval.

3.3 Environmental Considerations

N/A

3.4 Social Considerations:

The items in the body of the report benefit the water system users by providing safe, reliable water sources.

3.5 Economic Considerations:

N/A

3.6 Communication Considerations:

The public will be notified before planned service interruptions or water quality impacts.

3.7 Staffing/Departmental Workplace Considerations:

N/A

3.8 Board Strategic Plan/Priorities Considerations:

Organizational excellence - Continue to focus on our core services to ensure effective and efficient delivery through our Region.

SECTION 4: OPTIONS & PROS / CONS

None.

SECTION 5: RECOMMENDATIONS

None. For information only.



Respectfully submitted,

Alexandra Divlakovski, Water Operations Manager

CONCURRENCE

ATTACHMENTS: NONE



REGIONAL DISTRICT OF CENTRAL KOOTENAY

ARROW CREEK WATER TREATMENT & SUPPLY COMMISSION OPEN MEETING MINUTES

A meeting of the Arrow Creek Water Treatment & Supply Commission was held at 1:00 pm PST / 2:00 pm MST on Monday, February 10, 2025, through a hybrid model.

Join by Meeting Link:

<https://rdck-bc-ca.zoom.us/j/94172814570?pwd=nYRgABAKNcLnJp1TKoslvS1aAV1GA.1&from=addon>

Meeting ID: 941 7281 4570

Passcode: 939667

Dial by your location

- 833 955 1088 Canada Toll-free

Locations: ⁽¹⁾ Council Chambers, Town of Creston, 238 – 10th Ave N., Creston, BC
⁽²⁾ RDCK Board Room, 202 Lakeside Drive, Nelson, BC

COMMISSION MEMBERS

Commissioner D. Dumas	Councillor, Town of Creston (Chair)	⁽²⁾ In-person
Commissioner K. Vandenberghe	Director Electoral Area C	⁽²⁾ In-person
Commissioner R. Tierney	Director Electoral Area B	⁽²⁾ In-person

RDCK STAFF

U. Wolf	General Manager of Environmental Services	⁽¹⁾ In-person
C. Gainham	Utility Services Manager	⁽¹⁾ In-person
A. Divlakovski	Water Operations Manager	⁽¹⁾ In-person
A. Richardson	Water Operations Supervisor, East	
E. Clark	Meeting Coordinator	⁽¹⁾ In-person

TOWN OF CRESTON STAFF

S. Klassen	Director of Finance & Corporate Services	⁽²⁾ In-person
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1. CALL TO ORDER & WELCOME

General Manager Wolf assumed the chair and called the meeting to order at 1:00 p.m. PST / 2:00 p.m. MST.

2. ELECTION OF COMMISSION CHAIR

2.1 Call for Nominations (3 Times)

General Manager Wolf called for nominations a first time.

Commissioner Vandenberghe nominated Commissioner Dumas.

Commissioner Dumas accepted the nomination.

General Manager Wolf called for nominations a second and third time.

2.2 Opportunity for Candidates to Address the Commission

No address.

2.3 Vote by Secret Ballot

No vote.

2.4 Declaration of Elected or Acclaimed Chair

General Manager Wolf declared Commissioner Dumas as the acclaimed Chair of the Arrow Creek Water Treatment & Supply Commission.

2.5 Destroy Ballots

No ballots.

3. CHAIR'S ADDRESS

Commissioner Dumas thanked the Commission.

4. COMMENCEMENT OF REGULAR COMMISSION MEETING

The Arrow Creek Water Treatment & Supply Commission Chair assumed the chair.

5. CALL TO ORDER & WELCOME

5.1 Traditional Lands Acknowledgement Statement

We acknowledge and respect the indigenous peoples within whose traditional lands we are meeting today.

5.2 Adoption of Agenda

Moved and seconded,
And Resolved:

The Agenda for the February 10, 2025 Arrow Creek Water Treatment & Supply Commission meeting, be adopted as circulated.

Carried

5.3 Receipt of Minutes

The July 30, 2024 Arrow Creek Water Treatment & Supply Commission minutes, have been received.

6. STAFF REPORTS

6.1 Arrow Creek Water Treatment Plant Operation and Maintenance Update

Operations and Maintenance

- Membrane Filter Trains 1, 3 & 4 are currently not passing Membrane Integrity Tests (MITs). Train 2 is passing MITs and fibre repairs on Train 1 are almost complete.
- Train 1 suction pump had the flow starting to surge up and down when it was in production. The Variable Frequency Drive (VFD) was tested and was not an issue; the pump section has been removed and sent out to be inspected and tested, and has come back with no issues or repairs needed; the next step will be to replace the pump motor with a new spare we have in stock and that should resolve the problem.
- Annual overhead Water Treatment Plant (WTP) crane and intake Jib Inspection
- Preventative maintenance on all WTP motors.
- Large furnace that heats the WTP process room had to be shut down due to a faulty gas valve and a hole in the heat exchanger. HVAC contractor retrofitted a smaller decommissioned furnace used previously to heat the control room and redirected the ducting to blow heat down into the process room. The same will be done for a second smaller furnace previously used for heating chemicals rooms once the parts are in.
- Replacement of a 12" valve (leaking from the stem) on Train 1 and 3 old actuators.

Capital

- The Request for Proposal (RFP) for the WTP Mechanical Upgrades has been issued and posted to BC Bid, closes February 20, 2025.
- The final report for the filtration feasibility study was submitted by Associated Engineering on Thursday February 6th, 2025.
- An emergency replacement of the failing back pulse line, valve and tank will proceed and be awarded to the various suppliers and contractors.

6.2 Receipt of Associated Engineering Final Report for Filter Feasibility Study

Staff provided a verbal report on the final report for the Filter Feasibility Study.

6.3 Creston Valley Alternative Water Supply Study Update

Staff provided a verbal update on the Creston Valley Alternative Water Supply Study.

7. DRAFT 2025-2029 FINANCIAL PLAN

A copy of the DRAFT 2025-2029 Financial Plan for S251 Water Utility-Area B (Arrow Creek) has been received.

8. PUBLIC TIME

The Chair called for questions from the public at 2:24 p.m. PST / 3:24 p.m. MST.

9. NEXT MEETING

The next Arrow Creek Water Treatment & Supply Commission Meeting will be at the call of the Chair.

10. ADJOURNMENT

Moved and seconded,
And Resolved:

The Arrow Creek Water Treatment & Supply Commission meeting adjourn at 2:26 p.m. PST / 3:26 p.m. MST.

Carried

APPROVED

APPROVED BY

Councillor D. Dumas
Chair, Arrow Creek Water Treatment & Supply Commission
February 11, 2025



REGIONAL DISTRICT OF CENTRAL KOOTENAY

YMIR WATER COMMISSION OF MANAGEMENT OPEN MEETING MINUTES

10:00 am PST

Monday, March 17, 2025

To promote openness, transparency and provide accessibility to the public we provide the ability to attend all RDCK meetings in-person or remote (hybrid model).

COMMISSION MEMBERS PRESENT

Director H. Cunningham	Electoral Area G	In-person ^[2]
Commissioner T. Nixon		In-person ^[2]
Commissioner J. Leus		In-person ^[2]
Commissioner S. Mountford		In-person ^[1]

COMMISSION MEMBERS ABSENT

Commissioner T. Kingsley
Commissioner L. Hamnett

STAFF

Uli Wolf	General Manager of Environmental Services	In-person ^[1]
Chris Gainham	Utility Services Manager	In-person ^[2]
Emma Clark	Meeting Coordinator	In-person ^[1]

4 out of 6 voting Commission members were present – quorum was met.

1. CALL TO ORDER

Manager Gainham called the meeting to order at 10:10 a.m.

2. ELECTION OF CHAIR

2.1. CALL FOR NOMINATIONS (3 Times)

Director Cunningham called for nominations a first time.
Commissioner Nixon nominated Director Cunningham.

Manager Gainham called for nominations a second time and third time.
Commissioner Leus nominated Director Cunningham.

2.2. DECLARATION OF ELECTED OR ACCLAIMED CHAIR

Director Cunningham ratifies the appointed Director Cunningham as Chair of the Ymir Water Commission of Management for 2025.

3. CHAIR’S ADDRESS

Director Cunningham thanked the Commission for their support.

4. COMMENCEMENT OF REGULAR MEETING

The Ymir Commission of Management Chair assumes the chair.

4.1. TRADITIONAL LANDS ACKNOWLEDGEMENT STATEMENT

We acknowledge and respect the indigenous peoples within whose traditional lands we are meeting today.

4.2. ADOPTION OF AGENDA

MOVED and seconded,
AND Resolved:

The Agenda for the March 17, 2025 Ymir Water Commission of Management meeting, be adopted as circulated.

Carried

4.3. RECEIPT OF MINUTES

The November 23, 2023 Ymir Water Commission of Management minutes, have been received.

5. STAFF REPORTS

5.1. Staff Presentation - Capital Works, Operations and Maintenance Update and Ymir Infrastructure Asset Management Plan

Chris Gainham, Utility Services Manager provided the following information to the Commission:

- Operations and maintenance works on the system included regular system flushing and hydrant maintenance; the pressure transducer that records stage at the Quartz Creek flow monitoring weir was likely damaged during an electrical storm, some data was lost, the transducer was replaced in December 2024.
- 2024 capital works included installation of a reservoir outflow magmeter and SCADA upgrades. Future capital works include replacement of the UV units
- An overview of the Ymir Water System Asset Management Plan including asset values and 25 and 100 year horizon asset replacement needs forecasts, and also commented on the ongoing Natural Asset Management Plan for the Quartz Creek Watershed.

- Information on a test well drilled in Ymir in 2003 and the Commission discussed results of the drilling and drill report. Staff will distribute the report to the Commission.

6. 2025-2029 DRAFT FINANCIAL PLAN

The 2025-2029 Financial Plan for Service S244 Water Utility-Area G (Ymir), has been received.

MOVED and seconded,
AND Resolved:

That the Ymir Water Commission of Management approve the draft 2025-2029 Financial Plan for Service S244 Water Utility-Area G (Ymir).

Carried

Direction to Staff – Staff to provide copies of the Water Frontage Tax Bylaw and Ymir Water Supply and Distribution System Local Service Establishment Bylaw to Commission members.

7. PUBLIC TIME

The Chair will call for questions from the public at 11:38 a.m.

8. NEXT MEETING

The next Ymir Water Commission of Management meeting will be scheduled at the call of the Chair.

9. ADJOURNMENT

MOVED and seconded,
AND Resolved:

The Ymir Water Commission of Management meeting be adjourned at 11:46 a.m.

Carried

APPROVED BY

Director Cunningham, Chair



REGIONAL DISTRICT OF CENTRAL KOOTENAY

RDCK/Interior Health Meeting DISCUSSION NOTES

A meeting with the RDCK and members of Interior Health was held at 10:00 am PDT on Thursday, March 13th, 2025 through a hybrid model.

Joined by Meeting Link:

Meeting ID: 229 472 174 759

Passcode: JX9G8wT9

In-Person Location:

202 Lakeside Drive, Nelson, B.C. (Board Room)

Interior Health Attendees

Linden Jennings, Public Health Engineer
Sylvia Wong, Specialist Environmental Health Officer
Jennifer Beverly, Environmental Health Officer
Pouria Mojtahedi, Specialist Environmental Health Officer

RDCK Attendees

Uli Wolf, General Manager of Environmental Services
Chris Gainham, Utility Services Manager
Alex Divlakovski, Water Operations Manager

1. WELCOME AND INTRODUCTIONS

2. DISCUSSION – RDCK STAFF

2.1 Water systems in the Kootenay's – overview and challenges

Uli Wolf spoke to small water system challenges in the region.

2.2 Expectations of the RDCK to support non-RDCK water systems

Chris Gainham spoke to acquisition process and current support RDCK provides to non-RDCK water system.

Action Items: Chris to forward IH attendees' new website links for Water Services. IH to attend public meetings held as part of the acquisition process.

2.3 Response from the RDCK to Pouria Mojtahedi regarding provincial requirements for filtration exemption in the Balfour water system

Alex Divlakovski outlined RDCK's response to the provincial engineering team's determination that the Balfour water system does not meet provincial treatment objectives as they are not benefited from pathogen reducing/removing accredited filtration unless they demonstrate filtration exclusion.

Action Item: Pouria to follow-up with Medical Health Officer regarding a meeting with RDCK.

2.3.1 Requests for Woodbury Village raw water sample to act as a proxy

Alex Divlakovski requesting to use Woodbury Village raw water samples as a proxy for Balfour as part of the filtration exemption application.

Action Item: Pouria to follow-up with email confirming IH will not allow the proxy as the distance is too far for an accurate representation.

2.4 IH Construction Permitting Process challenges for SWS – case example Woodbury Village

Alex Divlakovski provided an example for a Construction Permit application engineered design detail that was rejected by the Public Health Engineer, which resulted in an additional \$50K toward the project for upgrades to a system with only 35 connections.

Action Item: IH to forward information on the appeal process (received)

2.5 Potential filtration exemption piloting for Arrow Creek WTP – Creston wells as alternate source.

Alex Divlakovski provided information from recent Filtration Feasibility study and discussed with EHO, Jennifer Beverly, the likelihood IH would support a Filtration Exemption application, the time frame for data collection, and other improvements that would be made to improve raw water quality.

Chris Gainham discussed the Creston wells as a potential secondary source for high turbidity events at the Arrow Creek WTP.

Action Item: Should the RDCK pursue a Filtration Exemption application, data over 1 year would be required, along with Watershed Protection Plan. RDCK may consider on-site validation of UV units for an increased NTU threshold.

3. DISCUSSION - INTERIOR HEALTH

3.1 Discussion items presented by Interior Health

Pouria Mojtahedi spoke to the transition of EHO for the Balfour water system to Jennifer Beverly.

4. FOLLOW-UP MEETING

The next meeting will be scheduled in fall 2025 (date TBD).