



Making a difference...together

JUAN DE FUCA WATER DISTRIBUTION COMMISSION
Notice of Meeting on **Tuesday, May 2, 2023 at 12 pm**
Goldstream Conference Room, 479 Island Highway, Victoria, BC

For members of the **public who wish to listen to the meeting** via telephone please call **1-833-353-8610** and enter the **Participant Code 1911461 followed by #**. You will not be heard in the meeting room but will be able to listen to the proceedings.

- | | |
|------------------------|-------------|
| G. Baird (Chair) | C. Harder |
| J. Rogers (Vice Chair) | K. Pearson |
| S. Donaldson | M. Wagner |
| D. Grove | A. Wickheim |

AGENDA

- 1. TERRITORIAL ACKNOWLEDGEMENT**
- 2. APPROVAL OF AGENDA**
- 3. ADOPTION OF MINUTES3**
Recommendation: That the minutes of the March 7, 2023 meeting be adopted.
- 4. CHAIR’S REMARKS**
- 5. PRESENTATIONS/DELEGATIONS**
Delegations will have the option to participate electronically. Please complete the [online](#) application for “Addressing the Board” on our website and staff will respond with details.
Alternatively, you may email your comments on an agenda item to the Juan de Fuca Water Distribution Commission at ivsadministration@crd.bc.ca. Requests must be received no later than 4:30 p.m. two calendar days prior to the meeting.
- 6. GENERAL MANAGER’S REPORT**
- 7. COMMISSION BUSINESS**
 - 7.1. Small Diameter Pipe Replacement Program Update6**
There is no recommendation. This report is for information only.
 - 7.2. Summary of Recommendations from Other Water Commissions17**
There is no recommendation. This report is for information only.

To ensure quorum, advise ivsadministration@crd.bc.ca if you cannot attend.

**Juan de Fuca Water Distribution Commission
Agenda – May 2, 2023**

7.3. Water Watch Report18

There is no recommendation. This report is for information only.

8. NOTICE(S) OF MOTION

9. NEW BUSINESS

10. ADJOURNMENT

Next Meeting: Tuesday, June 6, 2023



Making a difference...together

MINUTES OF A MEETING OF THE Juan de Fuca Water Distribution Commission, held Tuesday, March 7, 2023 at 12 p.m., Goldstream Meeting Room, 479 Island Highway, Victoria, BC

PRESENT: Commissioners: G. Baird; S. Donaldson; D. Grove; C. Harder; J. Rogers (12:30 pm) (EP); M. Wagner

Staff: I. Jesney, Acting General Manager; S. Irg, Senior Manager, Water Infrastructure Operations; J. Marr, Acting Senior Manager, Infrastructure Engineering; N. Tokgoz, Acting Manager, Water Distribution & Planning; D. Dionne (Recorder)

ABSENT: K. Pearson; A. Wickheim

EP = Electronic Participation

The meeting was called to order at 12:05 pm.

1. TERRITORIAL ACKNOWLEDGEMENT

The Chair provided the Territorial Acknowledgement.

2. APPROVAL OF AGENDA

MOVED by Commissioner Donaldson, **SECONDED** by Commissioner Grove, That the agenda be approved.

CARRIED

3. ADOPTION OF MINUTES

MOVED by Commissioner Harder, **SECONDED** by Commissioner Wagner, That the minutes of the January 3, 2023 meeting be adopted.

CARRIED

4. CHAIR'S REMARKS

Updated the Commission on the recruitment of the General Manager for Integrated Water Services.

5. PRESENTATIONS/DELEGATIONS

There were no presentations or delegations.

6. GENERAL MANAGER'S REPORT

Advised that a response to an information request submitted by Commissioner Rogers regarding post disaster hydrant locations and educational coordination with schools will be sent out to the Commission next week.

7. COMMISSION BUSINESS

7.1. Juan de Fuca Water Distribution Service Capital Projects Update

J. Mar provided a summary of the report and staff responded to questions from the Commission.

Goldstream Project:

- Interruptions and access concerns of businesses
- Staff provided information on how a gas leak that occurred on Goldstream Avenue was handled by staff and the procedures used.
- Staff provided a status of project progress.

South Skirt Mountain Project:

- Communication and coordination with City of Langford staff began early in the project, regarding paving of Bear Mountain Parkway alternate roadway and coordination with regards to electrical service.
- There are no immediate development drivers that would require the diesel generator to be turned on early, the diesel generator is for emergency purposes.

Commissioner Rogers joined the meeting.

Sun River Project: No questions.

Coppermine Pump Station Upgrade:

- Reasons for upgrade are aging infrastructure and increasing capacity.
- Juan de Fuca service expansions are done for system resiliency and redundancy for the benefit of existing users. Any expansions related to development are paid for by the developer through DCCs.

Development Cost Charge (DCC) Bylaw Update:

- Discussions with the member municipalities include population projections and growth anticipation.
- Vacancy revenue lag and system maintenance. New system maintenance is typically less than on older systems, so the revenue lag isn't as bad as initially thought.
- Discussion about new industrial and commercial construction impacts.
- Discussion about population projection lag over the municipal Official Community Plans.

Asbestos Cement (AC) Watermain Replacement Program:

- Proactive coordination with member municipalities of project works for possible cost savings and minimizing disruptions.
- Installation of hardened hydrants (for post disaster resiliency) on watermain replacements where feasible.
- Replacement prioritization is considered based on risk assessment due to system reliability, leaks, age, as well as municipal concerns also considered.

East Sooke Interconnect:

- Discussion on Anderson Cove unsuccessful grant application.
- Discussion on system resiliency/redundancy.

There is no recommendation. The presentation is for information only.

7.2. Summary of Recommendations from Other Water Commissions

There is no recommendation. The presentation is for information only.

7.3. Water Watch Report

I. Jesney summarized the water watch report and responded to questions from the Commission related to:

- Ability to project (predict) capacity
- Water use restrictions
- Balancing storage for peak flows and fire flows
- Process for utilizing deep water intake from the North Basin

There is no recommendation. The presentation is for information only.

8. NOTICE(S) OF MOTION

There was none.

9. NEW BUSINESS

There was none.

10. ADJOURNMENT

MOVED by Commissioner Harder, **SECONDED** by Commissioner Donaldson,
That the March 7, 2023 meeting be adjourned at 1:10 pm.

CARRIED

CHAIR

SECRETARY



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JWDC 23-03

**REPORT TO JUAN DE FUCA WATER DISTRIBUTION COMMISSION
MEETING OF TUESDAY, MAY 2, 2023**

SUBJECT **Juan de Fuca Water Distribution Service Small Diameter Pipe Replacement Program Update**

ISSUE SUMMARY

To provide the Juan de Fuca Water Distribution Commission with an update on the Small Diameter Pipe Replacement Program.

BACKGROUND

The original small diameter pipe replacement program was approved by the Juan de Fuca Water Distribution Commission (the Commission) in 1999 and continues to be a comprehensive program to replace water mains based on age, material type and other factors, such as timing of municipal construction and road paving programs. The program was developed into a detailed report listing priority water mains for replacement (1999 Report).

In 2019 the 1999 report and overall program were reviewed and the remaining Asbestos Cement (AC) and Cast Iron (CI) water mains were re-prioritized using a ranking system. Details on this ranking system are included in Appendix A, but in general the system considers age, leak history, flow/capacity and other ancillary factors.

In 2023 staff will continue reviewing the remaining AC and CI pipe. As part of this review, the pipe rankings will be updated, locations will be prioritized and a new 5-year replacement plan will be developed. This process is intended to allow for ongoing flexibility to address unforeseen circumstances, such as the need to adjust project priorities to align initiatives with municipal governments. Pipe assessment maps are shown in Appendix B.

Until the late 1950's CI pipe was predominantly used. From the mid 1950's until the late 1970's AC pipe was predominantly used. Approximately 112,000 metres of AC and CI water mains have been replaced since 1999. Efforts under this program, as well as the Five-Year (2012-2016) Fire Flow Upgrade Program, and on-going development across the service area have contributed to this rate of replacement. The table below presents a summary of the pipe type and lengths in 1999 and 2018 compared to 2022.

Summary Juan de Fuca Distribution System Pipe Type and Lengths (m) – 1999, 2018 and 2022

Year	AC	CI	DI	PVC	HDPE	Other	Total
1999	168,436	27,737	22,481	118,126	2,600	2,671	342,051
2018	92,951	1,409	139,276	274,518	7,658	4,880	520,692
2022	83,417	1,050	150,100	291,120	7,658	4,750	538,095

AC=Asbestos Cement, CI=Cast Iron, DI=Ductile Iron, PVC=Polyvinyl chloride, HDPE=High Density Polyethylene, Other=Copper, Steel

Juan de Fuca Water Distribution Commission – May 2, 2023
JDF Water Distribution Service Small Diameter Pipe Replacement Program Update **2**

Detailed Summary Juan de Fuca Distribution System Pipe Type and Lengths (m) - 2022

Municipality/EA	AC	CI	DI	PVC	HDPE	Other	Totals
View Royal	2,828	9	13,196	29,125	654	290	46,102
Langford	27,548	5	70,432	92,985	793	415	192,178
Colwood	28,930	997	22,642	51,485	896	2,645	107,595
Metchosin	9,546	39	20,143	32,535	620	955	63,838
Sooke	14,565		20,762	69,240	4,327	435	109,329
East Sooke			1,711	13,130		10	14,851
Highlands			714	570	175		1,459
Songhees Nation			500	2,050	193		2,743
Total	83,417	1,050	150,100	291,120	7,658	4,750	538,095

AC=Asbestos Cement, CI=Cast Iron, DI=Ductile Iron, PVC=Polyvinyl chloride, HDPE=High Density Polyethylene, Other=Copper, Steel

Overall, the water distribution system has grown by 196,000 metres since 1999 and, at the same time, the combined length of AC and CI water mains have been reduced by approximately 112,000 metres. Appendix C shows the AC and CI replacement from 2005 to 2022, replacement records for AC and CI water mains prior to 2005 are not available in Capital Regional District's (CRD) geographic information system (GIS) system but are available in other formats.

IMPLICATIONS

Financial Implications

The 2019 update and subsequent direction from the Commission directed CRD staff to target all AC and CI watermains being replaced by 2055. By averaging approximately 2,500 metres of AC and CI watermain replacement each year, this target can still be achieved, noting that annual fluctuations will be anticipated to account for variability in pipe diameter, project complexity and other factors. While markets have been escalating in recent years, CRD anticipates that this rate of replacement will require a total investment in the order of \$130 million, in 2023 dollars. This would align with a total average annual investment of approximately \$4 million per year for the next 33 years (2023 dollars), with the understanding that the CRD will need to continuously increase this investment on an annual basis to account for inflation, market escalation and additional unforeseen project complications. This average of \$4 million per year is identified in CRD's five-year capital plans and includes \$3.3 million per year for the core program as well as separate budget items for larger scale projects such as the Goldstream Avenue water main. It is also noted that if the rate of water main breaks starts to increase substantially, there may be a need to further expedite this program at a later date.

CONCLUSION

The Small Diameter Pipe Replacement Program has been successful in improving the reliability and resilience of the Juan de Fuca Water Distribution system with approximately 112,000 metres of water main replaced since 1999. The remaining 83,000 metres of AC and CI pipe in the distribution system will continue to be replaced over the next 33 years under the current program, to ensure the system remains reliable and the risk of failure is managed.

RECOMMENDATION

There is no recommendation. The report is for information only.

Submitted by:	Kirsten Wilson, EIT, Project Engineer
Submitted by:	Jared Kelly, P.Eng., Manager, Capital Projects
Concurrence:	Joseph Marr, P.Eng., Acting Senior Manager, Infrastructure Engineering
Concurrence:	Ian Jesney, P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Pipe Replacement Program Analysis
 Appendix B: AC and CI Pipe Assessment Maps
 Appendix C: AC and CI Pipe Replacement 2005-2022

PIPE REPLACEMENT PROGRAM ANALYSIS

Average Expected Service Life of Pipe

Several factors affect expected service life of pipe including manufacturing technologies and materials, water main bedding, installation technique, ground water table, transients (water hammer), operating pressure and surrounding soils. These factors may increase or decrease the expected service life and, in ideal conditions, the water main may exceed the expected service life. The updated replacement program prioritizes vulnerable pipes for replacement mitigating the number of leaks or failures. The average expected service life ranges for the various water main materials are summarized in the table below.

Water Main Material	Average Expected Service Life
Asbestos Cement (AC)	*50-70
Cast Iron (CI)	80-100
Ductile Iron (DI)	80-100
Polyvinyl Chloride (PVC)	80-100

*50 year service life noted in 1999 report; up to 70 year service life based on industry standards/documents

AC water pipe degradation is often caused by chemically aggressive surrounding soil/clay and ground water/level conditions, changing the physical properties of the pipe over time. Surrounding soils and the ground water table vary from location to location making it difficult to predict the expected service life of each AC water main remaining in the entire distribution system.

Analysis

The remaining AC water mains in the distribution system are analyzed and prioritized for replacement using a matrix and four main categories:

1. Age: Year of installation.
2. Leak History: Local historical condition data including recorded leaks and water main failures.
3. Flow/Capacity: Number of services reliant on the main and capacity of the main. For example, larger diameter mains on major roads would receive a higher ranking.
4. Ancillary: Several factors make up this category including operating pressure, known issues with specific mains, water quality, input from operations staff and efficiency of completing upgrades in close proximity.

All the remaining AC pipes are then given a ranking in each category and prioritized based on the overall ranking. The individual category rankings are updated when leaks occur or other issues become known.

The annual and five-year pipe replacement project lists are defined in detail ('road by road'), however beyond five years the pipe replacement projects are prioritized but not assigned a specific upgrade year as several factors can influence the schedule including capital budget, development, Municipality/Electoral Area utility and paving upgrade schedules.

Estimated Costs of Water Main Replacement

The unit (per meter) cost for the replacement of existing water mains has been estimated based on the size of pipe being installed (the pipe replacements range in size from 200 millimetre (mm) to 400mm diameter) and locations plus 30% for engineering design and contingency. Actual unit costs will vary depending on the location and alignment of the pipe, difficulty of construction, amount of rock removal required, amount of surface restoration required (pavement/concrete),

trench material disposal requirements (depending on contamination), supply and materials costs, market conditions and utilization of CRD in-house design/construction services versus contracted design/construction services.

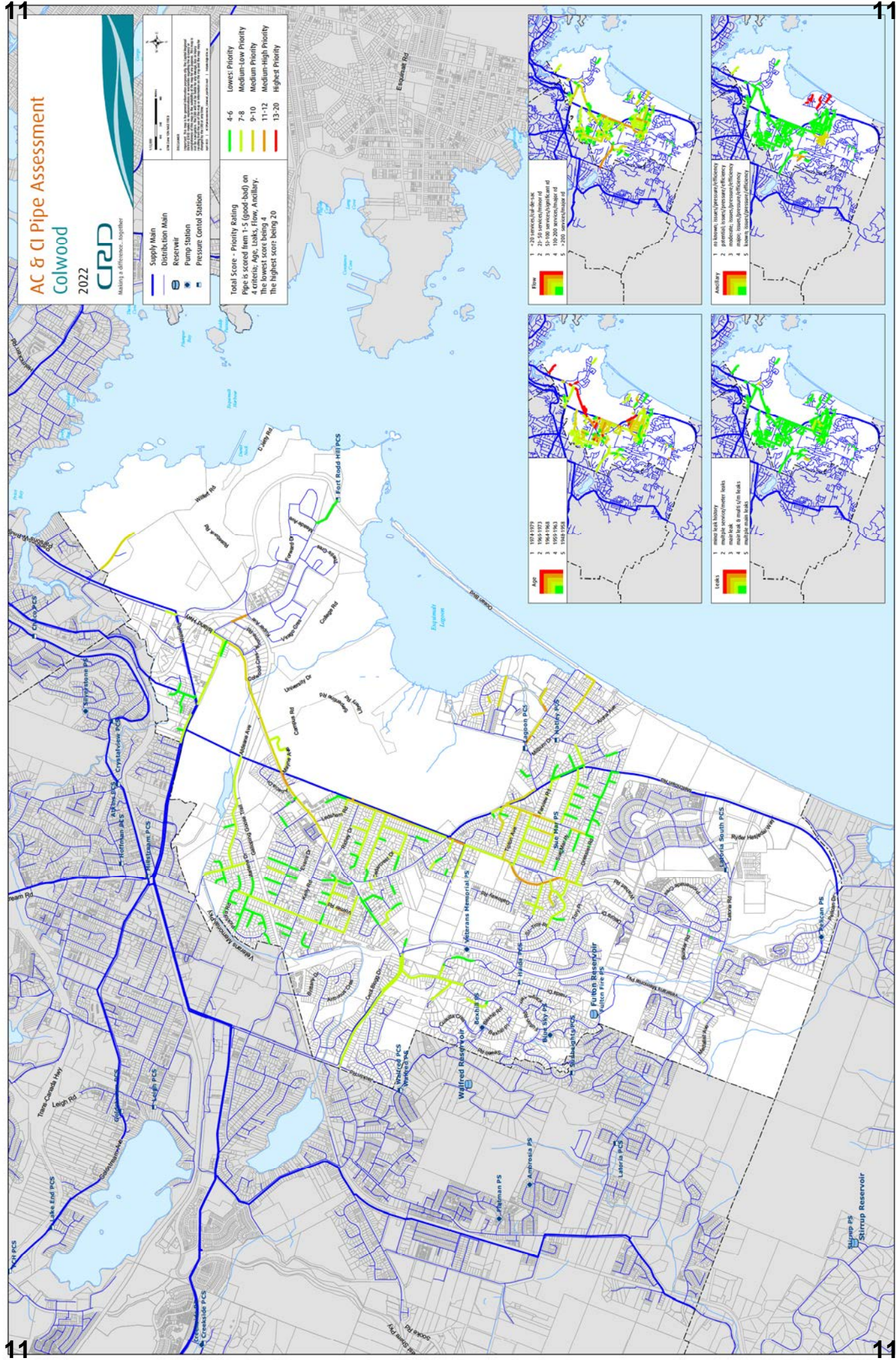
Short-Term Outlook

Based on the current capital budget for 2023 and the five-year capital plans, the planned projects are summarized in the table below.

Municipality/EA	Road Name	Length (m)	Diameter (mm)	Replacement Year	Estimated Cost
Colwood	Lagoon Rd.	218	200	2023	\$239,900
Colwood	Milburn Dr.	293	200	2023	\$322,000
Colwood	Ocean Blvd.	82	200	2023	\$89,700
Langford	Goldstream Ave.	1,640	400	2023	\$7.5 Million
Colwood	Painter Rd,	578	200	2024	\$635,500
Sooke	Belvista Pl.	355	400	2024	\$711,000
Sooke	Sooke Rd.	933	400	2024	\$1.87 Million
Colwood	Belmont Rd.	75	200	2025	\$82,200
Colwood	Wishart Rd.	2140	200	2025	\$2.35 Million
Langford	Dinan Pl.	75	200	2025	\$82,300
Langford	Percy Pl.	76	200	2025	\$84,000
Sooke	Sooke Rd.	344	400	2025	\$688,300
Colwood	Mayne Ave.	220	200	2026	\$242,000
Colwood	Seafield Rd.	242	200	2026	\$266,000
Colwood	Sooke Rd.	1830	300	2026	\$2.84 Million
Colwood	Acacia Dr.	136	200	2027	\$149,600
Colwood	Cairndale Rd.	251	200	2027	\$276,400
Colwood	Glencairn Ln.	54	200	2027	\$59,800
Colwood	Volmer Rd,	670	200	2027	\$296,000
Colwood	Wellesley Cres.	238	200	2027	\$263,000
Langford	Happy Valley Rd.	806	300	2027	\$1.25 Million
Langford	Wilhelmina Pl.	98	200	2027	\$108,120
Metchosin	Rocky Point Rd.	735	200	2027	\$809,000
Colwood	Ledsham Rd.	266	200	2028	\$292,600
Colwood	Yeta Terr.	86	200	2028	\$94,500
Langford	Bellamy Rd.	227	300	2028	\$288,000
Langford	Glen Lake Rd.	1159	200	2028	\$1.28 Million
Langford	Hazelwood	152	200	2028	\$166,900
Sooke	Grant Rd.	664	300	2028	1.03 Million
Total		14,643			\$24.4 Million
Average/Year		2,441			\$4 Million

Long Term Outlook

The average age of the existing AC pipe in the system is estimated at 50 years. Based on an annual capital budget of \$4,000,000/year, the remaining AC and CI water mains are anticipated to be replaced over the next 33 years at a total cost of approximately \$130 million (current dollars). The last AC water main in the system is anticipated to be replaced by 2055.



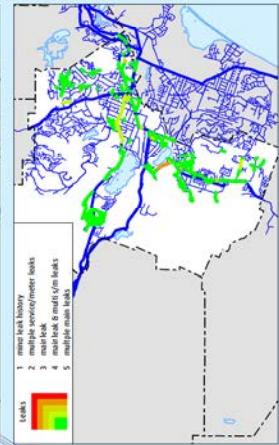
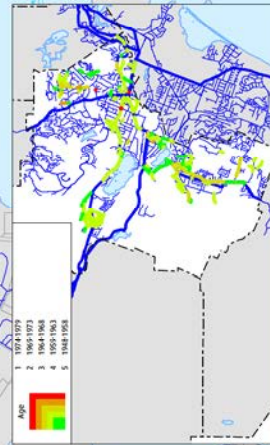
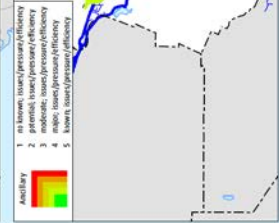
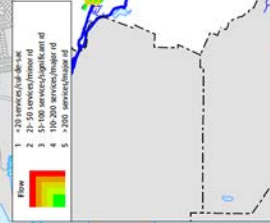
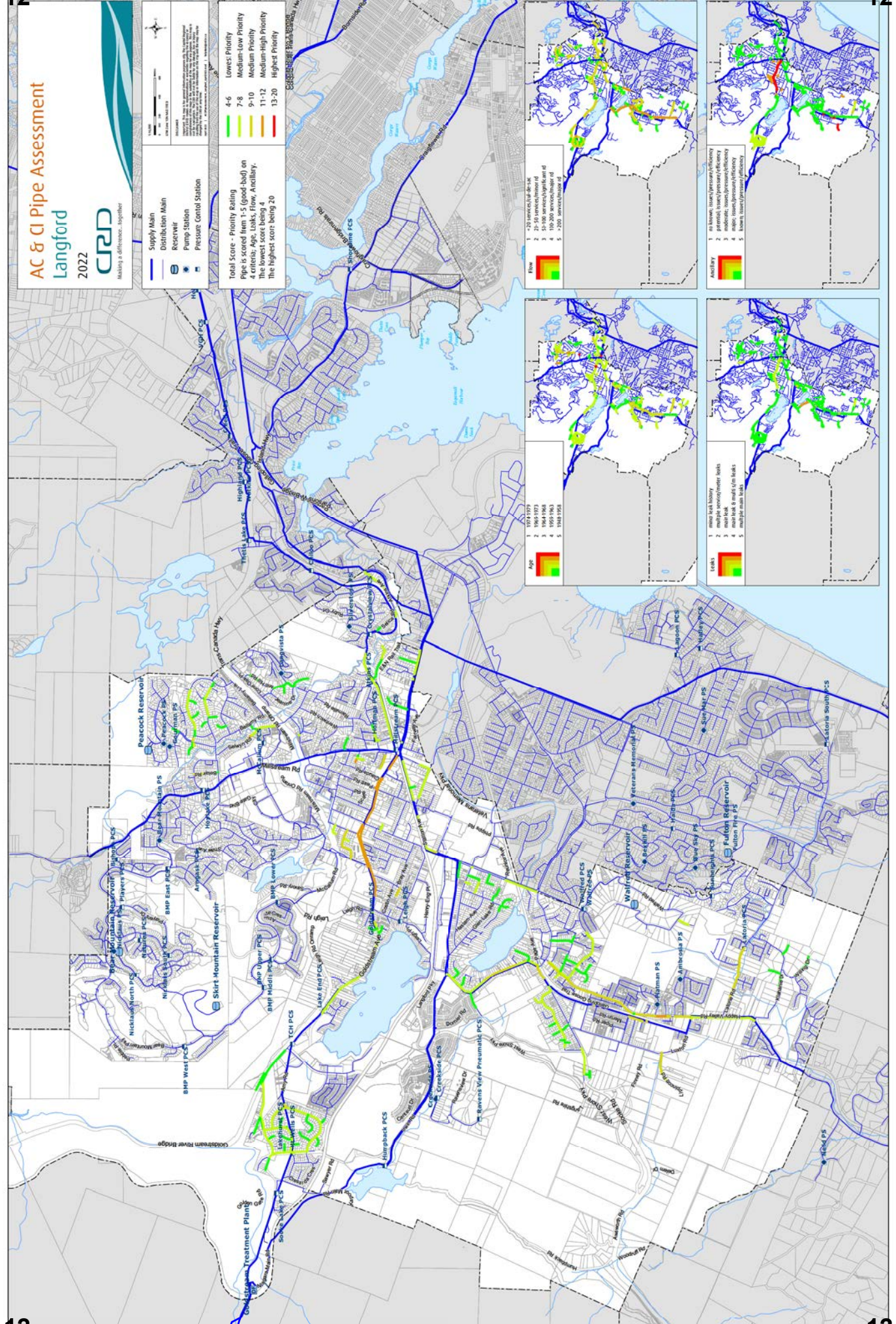
AC & CI Pipe Assessment
Langford
2022

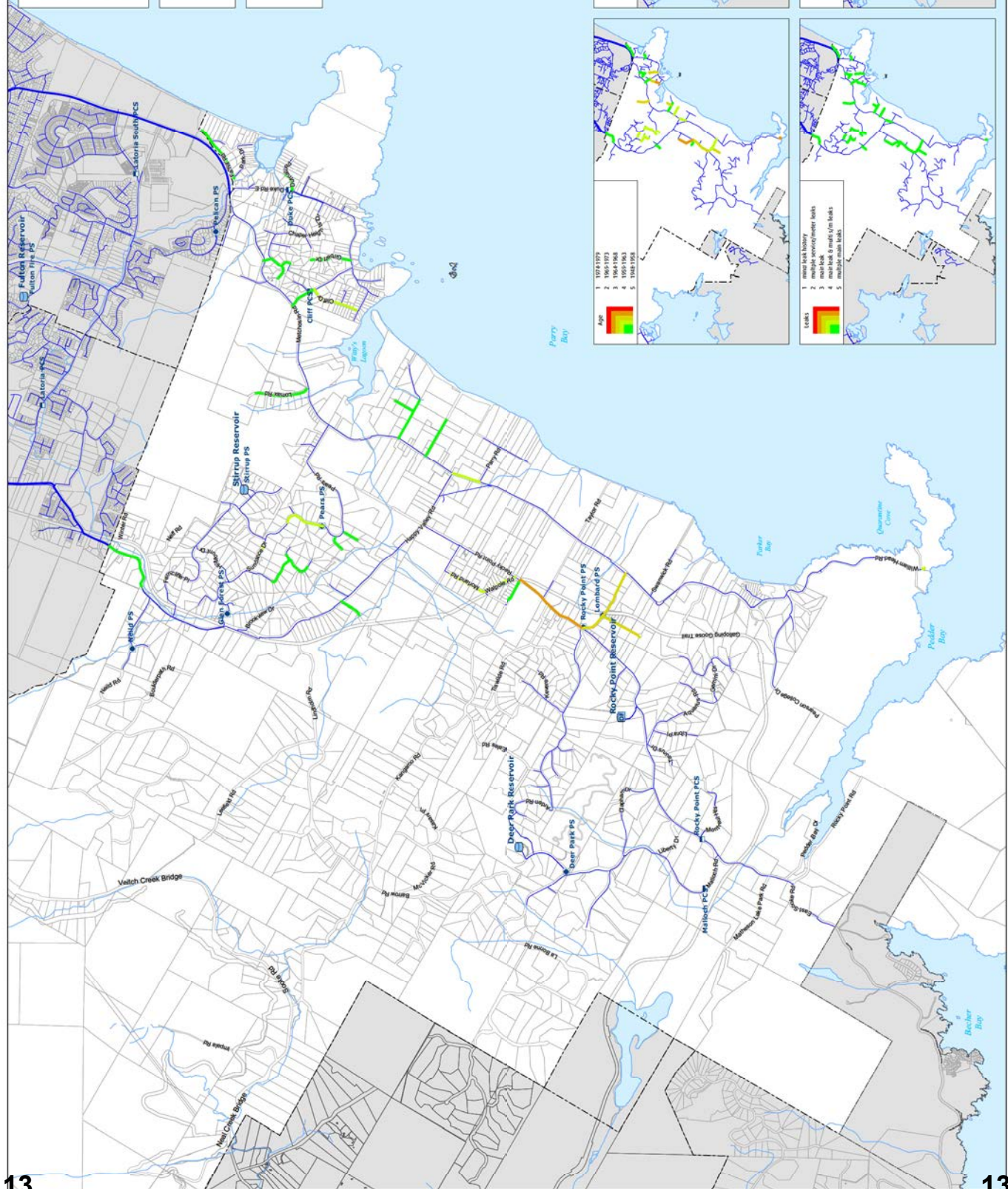
Legend

Supply Main
Distribution Main
Reservoir
Pump Station
Pressure Control Station

Total Score - Priority Rating
Pipe is scored from 1-5 (good-bad) on 4 criteria: Age, Leaks, Flow, Ancillary. The lowest score being 1, the highest score being 5.

4-6	Lowest Priority
7-8	Medium-Low Priority
9-10	Medium Priority
11-12	Medium-High Priority
13-20	Highest Priority





AC & CI Pipe Assessment
Metchosin
2022



Supply Main
Distribution Main
Reservoir
Pump Station
Pressure Control Station

Total Score - Priority Rating
Pipe is scored from 1-5 (good-bad) on 4 criteria: Age, Leaks, Flow, Ancillary. The lowest score being 4, the highest score being 20

4-6	Lowest Priority
7-8	Medium-Low Priority
9-10	Medium Priority
11-12	Medium-High Priority
13-20	Highest Priority

Flow

1	<25 services/ha/ha
2	25-50 services/ha/ha
3	50-100 services/ha/ha
4	100-200 services/ha/ha
5	>200 services/ha/ha

Ancillary

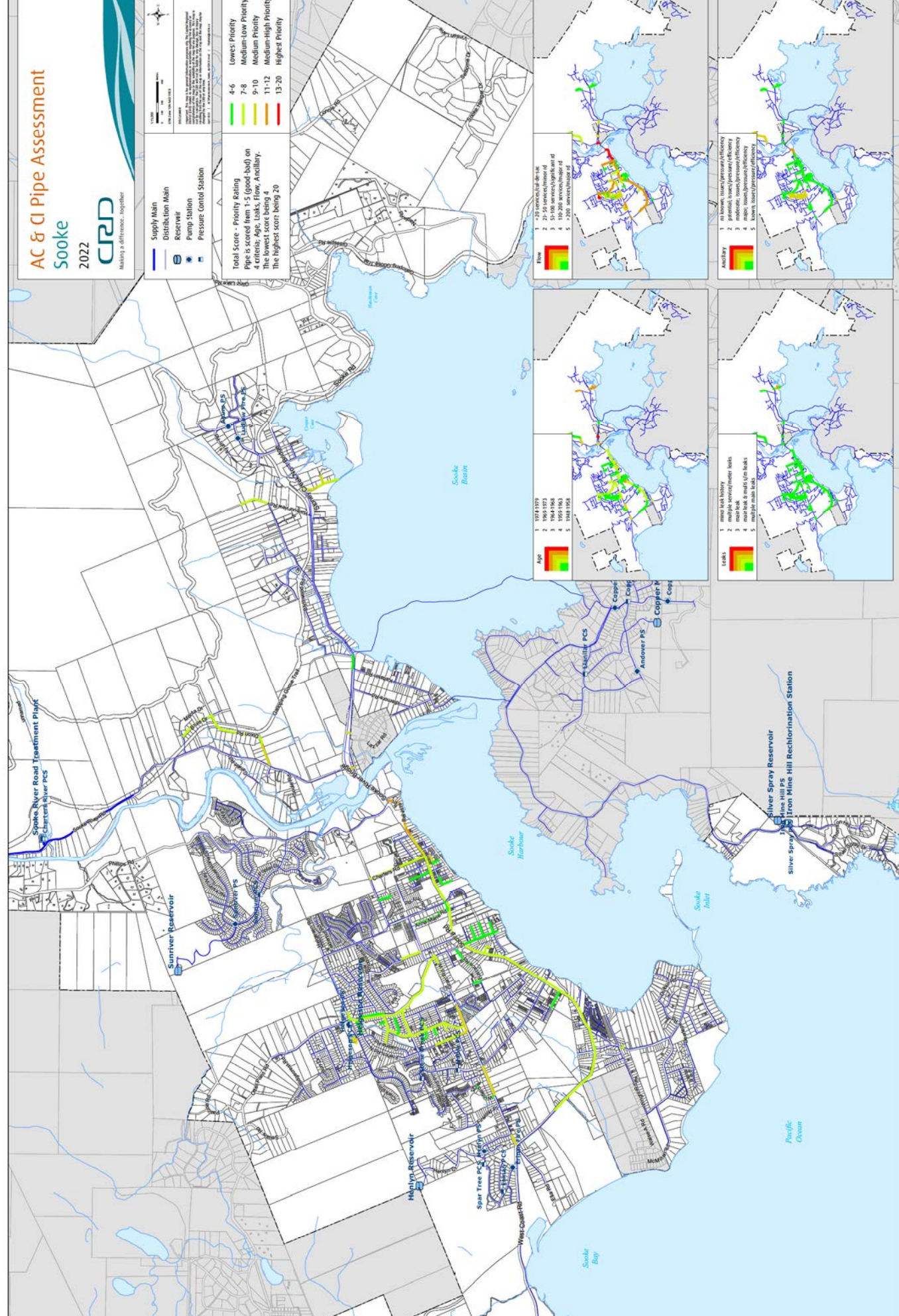
1	no issues
2	potential issues/primary efficiency
3	potential issues/secondary efficiency
4	major issues/primary efficiency
5	major issues/secondary efficiency

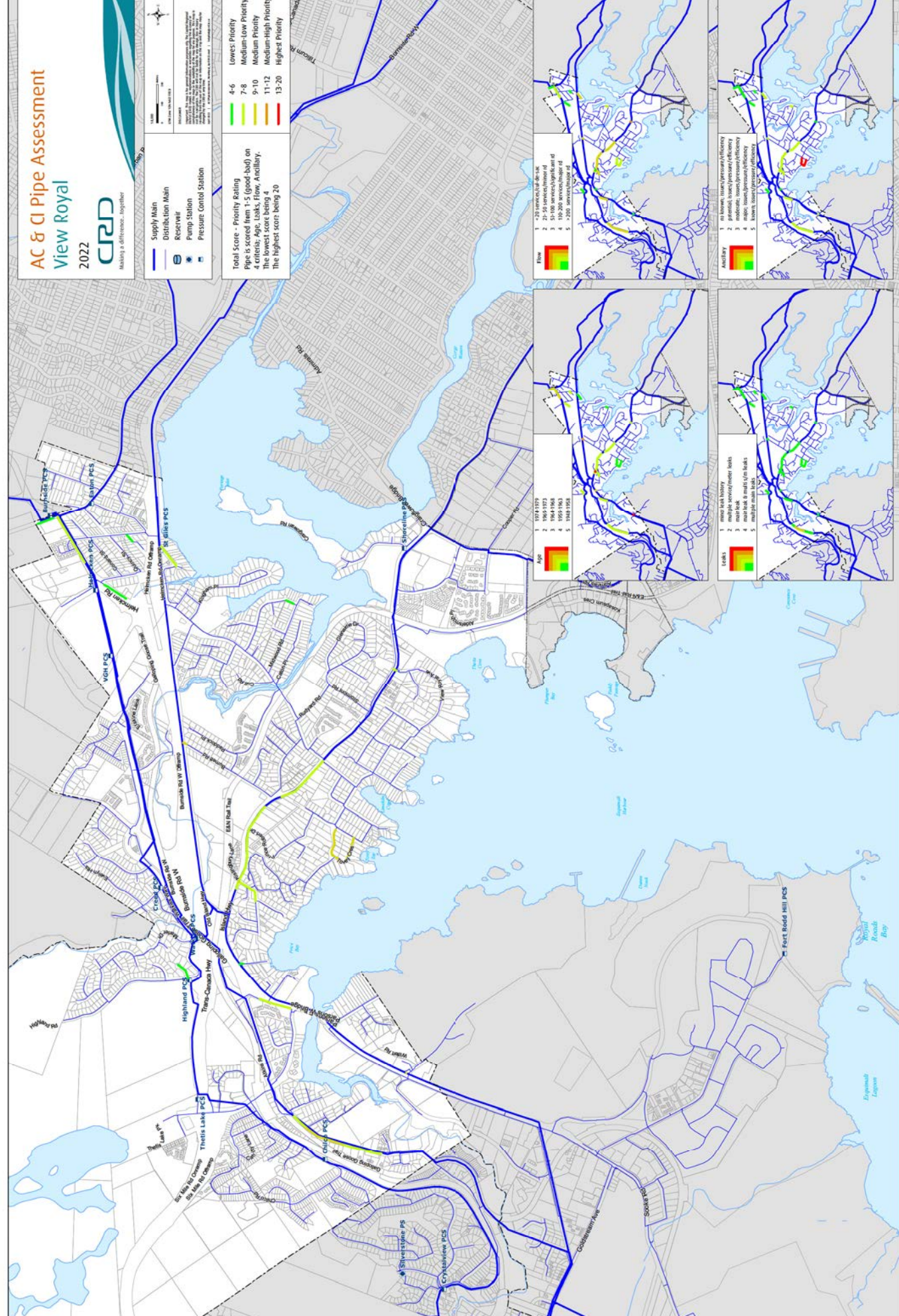
Age

1	1974-1979
2	1980-1983
3	1984-1986
4	1987-1988
5	1989-1993

Leaks

1	no leaks/leak-free
2	multiple minor/leak-free
3	major leak & multi-cm leaks
4	major leak & multi-cm leaks
5	major leak & multi-cm leaks





AC & CI Pipe Assessment
View Royal
2022

Supply Main
Distribution Main
Reservoir
Pump Station
Pressure Control Station

Total Score - Priority Rating
Pipe is scored from 1-5 (good-bad) on 4 criteria: Age, Leaks, Flow, Ancillary. The lowest score being 4, the highest score being 20

4-6	Lowest Priority
7-8	Medium-Low Priority
9-10	Medium Priority
11-12	Medium-High Priority
13-20	Highest Priority

Flow

1	< 250 services/ha/ha
2	251-500 services/ha/ha
3	501-1000 services/ha/ha
4	1001-2000 services/ha/ha
5	> 2000 services/ha/ha

Ancillary

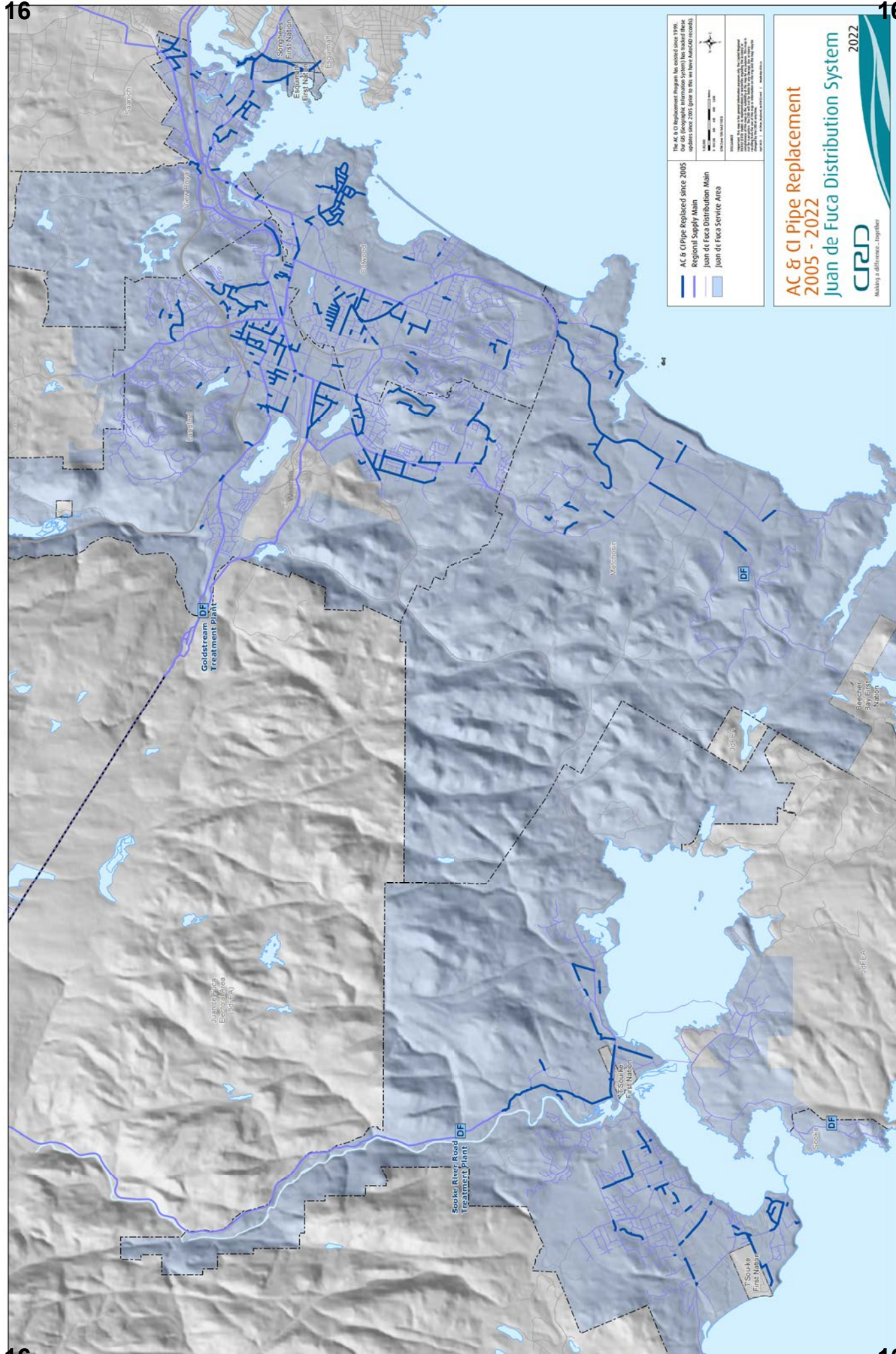
1	no ancillary
2	partial: issues by pressure efficiency
3	moderate: issues by pressure efficiency
4	major: issues by pressure efficiency
5	severe: issues by pressure efficiency

Age

1	1974-1977
2	1964-1973
3	1954-1963
4	1944-1953
5	1934-1953

Leaks

1	no leaks
2	minor: 1-2 leaks
3	moderate: 3-5 leaks
4	major: 6-10 leaks
5	severe: > 10 leaks



**AC & CI Pipe Replacement
2005 - 2022**

**Juan de Fuca Distribution System
2022**

CRFD
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Capital Regional District

HOTSHEET AND ACTION LIST

Regional Water Supply Commission

Wednesday, April 19, 2023

11:30 AM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC

The following is a quick snapshot of the FINAL Regional Water Supply Commission decisions made at the meeting. The minutes will represent the official record of the meeting. A name has been identified beside each item for further action and follow-up.

3. ADOPTION OF MINUTES

That the minutes of the February 15, 2023 meeting be adopted.

CARRIED

7. COMMISSION BUSINESS

7.1 Bylaw No. 4521 Water Supply Local Service Area Establishment Bylaw Amendment

Recommendation: The Regional Water Supply Commission recommends to the Capital Regional District Board:

1. That Bylaw No. 4541, "Capital Regional District Water Supply Local Service Area Establishment Bylaw No. 1, 1997, Amendment Bylaw No. 3, 2023", be introduced and read a first, second, and a third time.
2. That Bylaw No. 4541 be referred to the service participants for approval by way of council and electoral area director consent on behalf, and that if successful, Bylaw No. 4541 be referred to the Inspector of Municipalities for approval.

CARRIED

THE FOLLOWING ITEMS WERE RECEIVED FOR INFORMATION

- 7.2 Potential Impacts of Climate Change on Regional Water Supply Operations
- 7.3 Summary of Recommendations from Other Water Commissions
- 7.4 Water Watch Report

CAPITAL REGIONAL DISTRICT - INTEGRATED WATER SERVICES

Water Watch

Issued April 24, 2023

Water Supply System Summary:

1. Useable Volume in Storage:

Reservoir	April 30 5 Year Ave		April 30/22		April 23/23		% Existing Full Storage
	ML	MIG	ML	MIG	ML	MIG	
Sooke	91,888	20,215	92,727	20,400	92,727	20,400	100.0%
Goldstream	8,200	1,804	9,825	2,162	9,906	2,179	99.9%
Total	100,087	22,019	102,552	22,561	102,633	22,579	100.0%

2. Average Daily Demand:

For the month of April	107.0 MLD	23.53 MIGD
For week ending April 23, 2023	108.0 MLD	23.76 MIGD
Max. day April 2023, to date:	112.6 MLD	24.78 MIGD

3. Average 5 Year Daily Demand for April

Average (2018 - 2022)	114.1 MLD ¹	25.11 MIGD ²
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¹MLD = Million Litres Per Day ²MIGD = Million Imperial Gallons Per Day

4. Rainfall April:

Average (1914 - 2022):	88.8 mm
Actual Rainfall to Date	96.2 mm (108% of monthly average)

5. Rainfall: Sep 1- Apr 23

Average (1914 - 2022):	1,487.0 mm
2022/2023	987.8 mm (66% of average)

6. Water Conservation Action Required:

If each of us saves a little, together we can save a lot.
Visit our website at www.crd.bc.ca/water for more information.

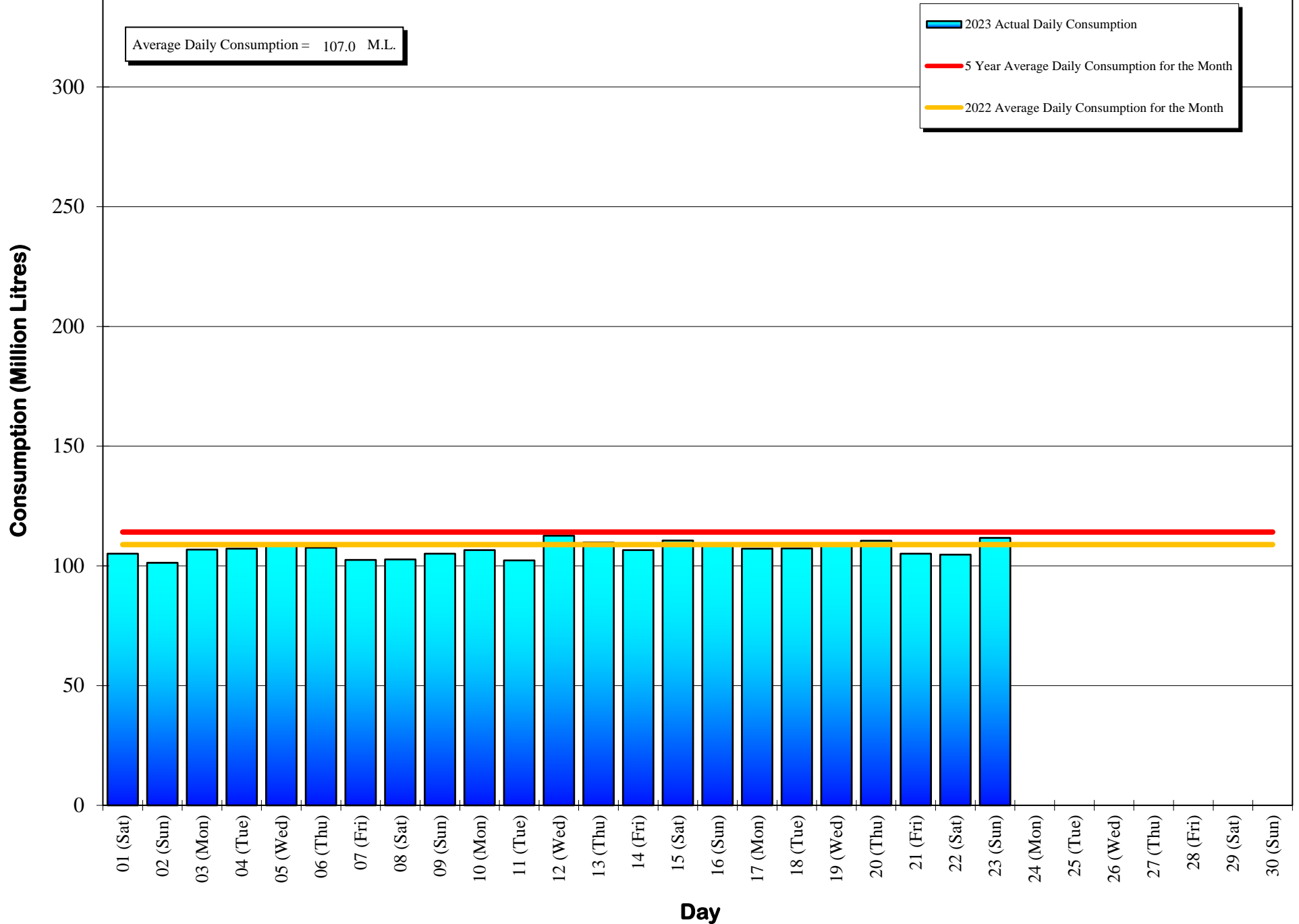
If you require further information, please contact:

Ian Jesney, P. Eng.
Acting General Manager, CRD - Integrated Water Services
or
Glenn Harris, Ph D., RPBio
Senior Manager - Environmental Protection

Capital Regional District Integrated Water Services
479 Island Highway
Victoria, BC V9B 1H7
(250) 474-9600

Daily Consumption

April 2023



Daily Consumptions: - April 2023

Date	Total Consumption		Air Temperature @ Japan Gulch		Weather Conditions	Precipitation @ Sooke Res.: 12:00am to 12:00am			
	(ML) ¹	(MIG) ²	High (°C)	Low (°C)		Rainfall (mm)	Snowfall ³ (mm)	Total Precip.	
01 (Sat)	105.1		23.1	7	2	Cloudy / P. Sunny / Showers	7.6	0.0	7.6
02 (Sun)	101.3	<=Min	22.3	7	1	Cloudy / Showers	7.1	0.0	7.1
03 (Mon)	106.8		23.5	10	1	Cloudy / Showers	0.3	0.0	0.3
04 (Tue)	107.2		23.6	9	-1	Cloudy / P. Sunny / Flurries	0.3	10.1	1.3
05 (Wed)	108.4		23.8	10	0	Cloudy	0.0	0.0	0.0
06 (Thu)	107.6		23.7	10	5	Cloudy / Showers	1.0	0.0	1.0
07 (Fri)	102.5		22.6	13	6	Sunny / P. Cloudy / Showers	1.0	0.0	1.0
08 (Sat)	102.7		22.6	9	5	Cloudy / Showers	1.8	0.0	1.8
09 (Sun)	105.1		23.1	11	5	Cloudy / Rain	18.3	0.0	18.3
10 (Mon)	106.6		23.4	10	4	Cloudy / Showers	0.3	0.0	0.3
11 (Tue)	102.3		22.5	9	3	Cloudy / P. Sunny / Showers	8.4	0.0	8.4
12 (Wed)	112.6	<=Max	24.8	12	3	Sunny / P. Cloudy	0.0	0.0	0.0
13 (Thu)	109.8		24.2	10	2	P. Cloudy / Showers	1.0	0.0	1.0
14 (Fri)	106.6		23.5	12	1	Sunny / P. Cloudy	0.0	0.0	0.0
15 (Sat)	110.6		24.3	11	4	Cloudy / Showers	2.8	0.0	2.8
16 (Sun)	109.1		24.0	9	2	Cloudy / Showers	9.6	0.0	9.6
17 (Mon)	107.2		23.6	9	0	P. Cloudy / Showers	1.0	0.0	1.0
18 (Tue)	107.3		23.6	9	2	Cloudy / Showers	12.2	0.0	12.2
19 (Wed)	109.4		24.1	11	2	Cloudy / P. Sunny / Showers	0.5	0.0	0.5
20 (Thu)	110.5		24.3	8	2	Cloudy / Showers	7.1	0.0	7.1
21 (Fri)	105.1		23.1	10	5	Cloudy / Showers	3.3	0.0	3.3
22 (Sat)	104.7		23.0	11	6	Cloudy / Showers	6.3	0.0	6.3
23 (Sun)	111.7		24.6	11	5	Cloudy / Showers	5.3	0.0	5.3
24 (Mon)									
25 (Tue)									
26 (Wed)									
27 (Thu)									
28 (Fri)									
29 (Sat)									
30 (Sun)									
TOTAL	2460.2 ML	541.25 MIG					95.2	10	96.2
MAX	112.6	24.78	13	6			18.3	10	18.3
AVG	107.0	23.53	9.9	2.8			4.1	0	4.2
MIN	101.3	22.28	7	-1			0.0	0	0.0

1. ML = Million Litres

2. MIG = Million Imperial Gallons

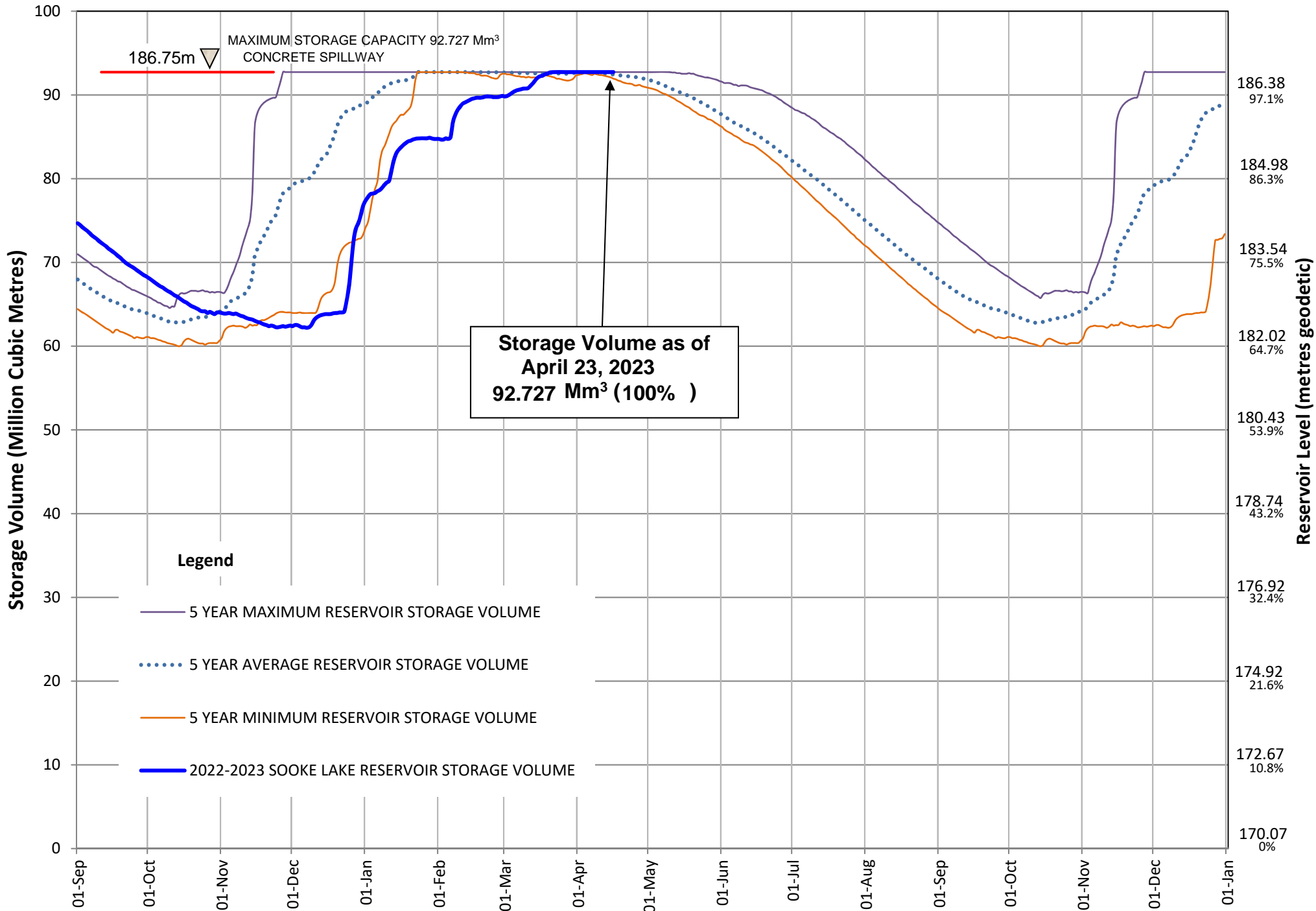
3. 10% of snow depth applied to rainfall figures for snow to water equivalent.

Average Rainfall for April (1914-2022)	88.8 mm
Actual Rainfall: April	96.2 mm
% of Average	108%
Average Rainfall (1914-2022): Sept 01 - Apr 23	1,487.0 mm
Actual Rainfall (2022/23): Sept 01 - Apr 23	987.8 mm
% of Average	66%

Number days with precip. 0.2 or more
20

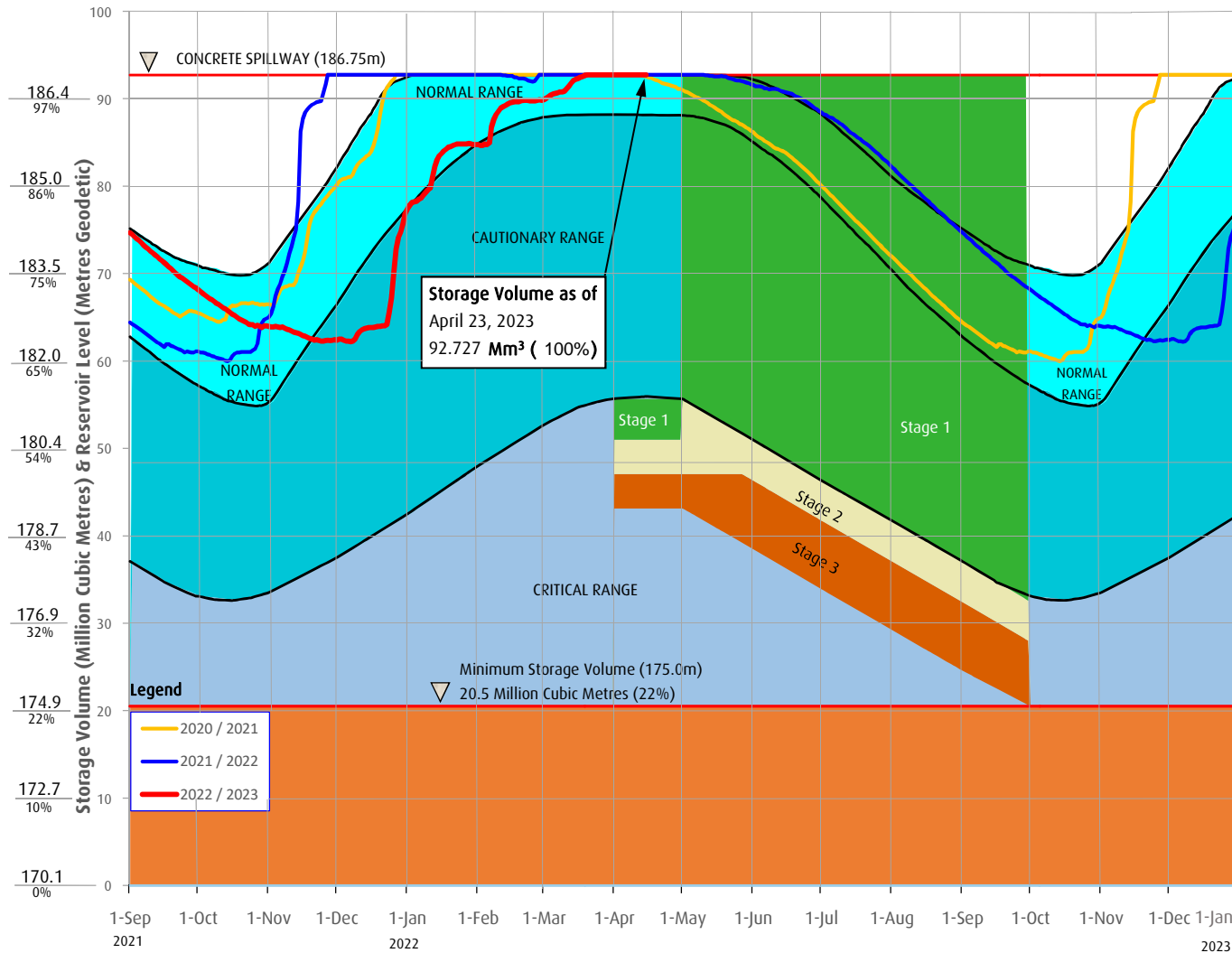
Water spilled at Sooke Reservoir to date (since Sept. 1) = 0.80 Billion Imperial Gallons
 = 3.60 Billion Litres

SOOKE LAKE RESERVOIR STORAGE SUMMARY 2022 / 2023



Sooke Lake Reservoir Storage Level

Water Supply Management Plan



FAQs

How are water restriction stages determined?

Several factors are considered when determining water use restriction stages, including,

1. Time of year and typical seasonal water demand trends;
2. Precipitation and temperature conditions and forecasts;
3. Storage levels and storage volumes of water reservoirs (Sooke Lake Reservoir and the Goldstream Reservoirs) and draw down rates;
4. Stream flows and inflows into Sooke Lake Reservoir;
5. Water usage, recent consumption and trends; and customer compliance with restriction;
6. Water supply system performance.

The Regional Water Supply Commission will consider the above factors in making a determination to implement stage 2 or 3 restrictions, under the Water Conservation Bylaw.

At any time of the year and regardless of the water use restriction storage, customers are encouraged to limit discretionary water use in order to maximize the amount of water in the Regional Water Supply System Reservoirs available for nondiscretionary potable water use.

Stage 1 is normally initiated every year from May 1 to September 30 to manage outdoor use during the summer months. During this time, lawn watering is permitted twice a week at different times for even and odd numbered addresses.

Stage 2 is initiated when it is determined that there is an acute water supply shortage. During this time, lawn water is permitted once a week at different times for even and odd numbered addresses.

Stage 3 is initiated when it is determined that there is a severe water supply shortage. During this time, lawn watering is not permitted. Other outdoor water use activities are restricted as well.

For more information, visit www.crd.bc.ca/drinkingwater





Useable Reservoir Volumes in Storage for April 23, 2023

