Making a difference...together

WATER ADVISORY COMMITTEE
Notice of Meeting on **Thursday, December 2, 2021 at 1:30 pm**
Goldstream Meeting 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.

Elise Cote (Chair)	Mike Doehnel	Wilf Scheuer
Jennifer Todd (Vice Chair)	Tayler Krawczyk	Heather Thompson
Gord Baird	Craig Nowakowski	David Timothy
Jeremy Caradonna	John Rogers	Mike Turner
Celine Davis	Karen Sander	

AGENDA

1. **TERRITORIAL ACKNOWLEDGEMENT**

2. **APPROVAL OF AGENDA**

3. **ADOPTION OF MINUTES** 3

   ***Recommendation**: That the minutes of the September 2, 2021 meeting be adopted.*

4. **CHAIR'S REMARKS**

5. **PRESENTATIONS/DELEGATIONS**

   This meeting will be held by without the public present. A phone in number is provided above that will allow the public to listen to the meeting.

   Presentation and Delegation requests can be made online or complete this printable form (PDF). Requests must be received no later than 4:30 p.m. two calendar days prior to the meeting.

6. **UPDATES FROM WORKING GROUPS**

   - Long term water supply and demand management
   - Water Quality
   - Major Capital Projects
   - Agricultural Water Rates
     - Correspondence from the Working Group **7**

*To ensure quorum, advise **DENISE DIONNE, 250.360.3087** if you cannot attend.*

IWSS-297445977-7897

7. COMMITTEE BUSINESS

8. UPDATE ON COMMITTEE MEMBERSHIP

9. NEW BUSINESS

10. ADJOURNMENT

Next Meeting: Thursday, March 3, 2022

Making a difference...together

MINUTES OF A MEETING OF THE WATER ADVISORY COMMITTEE, held Thursday, September 2, 2021 at 1:30 pm, Goldstream Meeting Room, 479 Island Highway, Victoria, BC, Victoria, BC

PRESENT: E. Cote (Chair) (EP); G. Baird; J. Caradonna (EP); M. Doehnel; T. Krawczyk (EP); J. Rogers (EP); K. Sander; W. Scheuer (1:50 pm)(EP); H. Thompson (EP); D. Timothy (EP); J. Todd (EP); M. Turner (EP)

Staff: T. Robbins, General Manager; A. Constabel, Senior Manager, Watershed Protection; J. Marr, Manager, Water Distribution & Planning; D. Dionne (Recorder)

REGRETS: C. Davis; C. Nowakowski

EP = Electronic Participation

The meeting was called to order at 1:35 pm.

1. TERRITORIAL ACKNOWLEDGEMENT

Chair Cote provided the territorial acknowledgement.

2. APPROVAL OF AGENDA

MOVED by K. Sander, **SECONDED** by G. Baird,
That the agenda be approved as circulated.

CARRIED

3. ADOPTION OF MINUTES

MOVED by G. Baird, **SECONDED** by M. Doehnel,
That the minutes of the June 3, 2021 and June 22, 2021 meetings be adopted.

CARRIED

4. CHAIR'S REMARKS

The Chair thanked staff for including her requested items of interest on the agenda and for their work in preparing to speak to these items.

5. PRESENTATIONS/DELEGATIONS

There were none.

6. UPDATES FROM WORKING GROUPS

- Long term water supply and demand management
  E. Cote advised that the group has not had a chance to meet and there is no report at this time.

- Water Quality
  There was no report.

- Major Capital Projects
  G. Baird advised that he and Wilf met with staff on June 22, 2021 to discuss the major capital projects. Staff are working on a report that will provide some grounds for them to start working on.

- Water Rates
  There was no report.

  T. Robbins advised that the request for proposals (RFP) has been drafted and is being referred through Capital Regional District's (CRD) finance staff for review of potential financial implications of the different rate models. Staff are hoping to get the RFP out in the next couple of weeks. All the feedback received from the Working Group was incorporated.

W. Scheuer joined the meeting.

7. COMMISSION BUSINESS

7.1. Provincial Drought Level 4 – Capital Regional District Water Service Impacts [Verbal Report/Discussion]

T. Robbins spoke to the item and provided the Provincial definition of drought for context. He noted that the region's early drought and high demand began in June this year however there has been minimal impact on Sooke Lake Reservoir. The reservoir is about 8% lower than average.

He advised that the CRD is not responsible for the smaller water systems and that they rely on groundwater wells or small lakes for their fresh water supply. Both are vulnerable and have seen aquifers draw down with the worst case scenario on Mayne Island this summer. The CRD did truck water to that service to allow the aquifer to recharge.

He noted that customers of these small service areas are well aware of their water use behaviour and how it impacts on their water supply. A Stage 3 water conservation notice was issued early to the small service customers, however there are no bylaws in place to enforce.

T. Robbins responded to questions from the Committee regarding:
- The consideration or use of desalination systems in the small service areas.
- Water Release program for maintaining the salmon habitat.
- Long term solutions for the small water services.

7.2. Greater Victoria Water Supply Area Wildfire Management and Water System Capacity [Verbal Report/Discussion]

T. Robbins introduced the item noting that the request for information came from the Chair and was related to the fire in Lytton, BC this summer. This fire raised some questions regarding the capacity of water systems to deal with large urban fires.

J. Marr provided a PowerPoint presentation with an overview on how urban water systems are designed. He spoke to the following items:

- Water Systems Overview
- Fire Flow Design Requirements
- Fire Underwriters Survey
- Wildfires
- Wildfire Protection Plans

Discussion ensued regarding:

- Building code and fire regulations.
- Fire hazard zones in North Saanich.
- Community wildfire protection plans.
- Various types of fire resistant/retardant housing materials.
- Water sources in parks in urban areas and responsibility for fire response in these areas.
- Water flow and concerns with very large conflagration events or multiple fires.
- Managing water storage within distribution systems.
- Consultant review of the previous Cloak Hill Reservoir capacity study.

3 pm J. Caradonna and W. Scheuer left the meeting

7.3. Summary of Regional Water Supply Commission Recommendations

T. Robbins was asked to provide an update on the once-through-cooling motion that was passed at the last Regional Water Supply Commission meeting. He advised that staff will be preparing a report to the next Regional Water Supply Commission meeting that will outline how the rebate program would be implemented, what the rebate would be set at as well as the most recent information on how many once-through-cooling units are out there.

MOVED by G. Baird, **SECONDED** by T. Krawczyk,
That the Summary of Recommendations be received for information.

CARRIED

7.4. Water Watch Report

MOVED by M. Turner, **SECONDED** by T. Krawczyk,
That the August 23, 2021 water watch report be received for information.

CARRIED

8. COMMITTEE MEMBERSHIP

T. Robbins advised that the following members' term on the Committee is expiring on December 31, 2021. He noted that all are concluding their first 2-year term and are able to serve an additional two terms (up to six years). He asked that those members interested in putting their names forward for another term email Denise Dionne (ddionne@crd.bc.ca) with their intention.

- Heather Thompson- Environmental
- Jennifer Todd - Environmental
- Karen Sander – Other Organizations – Environmental/Community Engagement
- Mike Turner – Fish Habitat Protection
- Elise Cote (Chair) – Resident / Ratepayer

9. NEW BUSINESS

There was no new business.

10. ADJOURNMENT

MOVED by G. Baird, **SECONDED** by T. Krawczyk,
That the December 2, 2021 meeting be adjourned at 3:23 pm.

CARRIED

_____
CHAIR

_____
SECRETARY

Denise Dionne

From: ksplanning@sasktel.net
Sent: Wednesday, November 03, 2021 1:07 PM
To: Denise Dionne; velazquez.cote@gmail.com
Cc: tayler@hatchetnseed.ca; jeremycaradonnayyj@gmail.com; john.rogers007@shaw.ca; Vimalt@shaw.ca
Subject: Agriculture Water Rate Background Discussion Notes

Hi Elise and Denise
Could you please include this in the next meeting package on behalf of our Working Group.
Thank you.

On behalf of the group,
Karen

AG Water Rate Sub-Committee
Background Discussion Notes - May 24, 2021

CRD Intended Outcome: Price mechanism to increase food security and to ensure public accountability for the Ag-Rate subsidy

1. **How can the CRD provide rationale and wording to ensure consumers are paying for food first, land protection second.**

The CRD has the authority to inspect, assist and educate towards the goal of food security.

Scale of Agricultural/Food production

Definition of farm - Subsidy Accountability, food security,

Need Staff Outreach - i.e. Field Days

CRD owns decision on Ag Water Rates. Quick help to farmers in ALR – AG

2**. How can the CRD assure consumers that the ag rate is justified?**
Taxpayer fatigue needs to be considered as the wholesale and retail rates steadily climb for new pipe, new intake tower at north end, Leech collection and more dams on hillsides.

3. **How is the subsidy helping to achieve the goals of the CRD Water Subsidy (i.e. Food Production)?**

Ensuring maximum producers get maximum subsidy - incentive to produce food.

Motivate -

Commercial component - i.e. $$ or bio mass, size of farms, gross sales, caloric vs dollars

Requires work and funding- monitor and enforcement

Food and fiber definitions, outside ALR, Garden Allotments

Urban Agriculture

Farm stands

Who should get? Comprehensive Audit - Annual or bi-annual Survey or Permit application

Increase rate on Quasi farming

Currently tied to BC Assessment which was easy

Keep rate low for Agricultural food producers

Promote **Efficiency in Irrigation Practices -** Conservation Promotion/Grants etc

4. **How can the CRD promote water conservation as we now expect consumers to be water wise and conserve, same goes for farmers?**

Water guns source their water from ponds or ground water - message needs to be communicated to public

Water is not being wasted on the Peninsula (use 4X less than Okanogan)

Education and Price

Graded system - self scoring

Best Practices

Education , soil fertility, workshops field days.

$$ Saved by Ag Rate

Compose - bio solids, food waster (vs landscaping materials)

Soil blending

Horses provide zero carbon cycling, run-off , no commercial component

Diversified vegetable products vs orchard

Water Footprint

Scale - impact on consumption. Will this solve the problem?

5. Should the CRD take on a role promoting soil health and farm water together?

For example, having a small "CRD Agricultural & Soil Health Unit" or Crop Action Team - dedicated seasonal equipment operators setup to exclusively drill seed a wide variety of cover crops depending on the soil type/production goals

Drive Innovation - Long Term Project is young and small farmers (Coop machinery, target rebates)

Increase capacity through best practices

Brittleness of landscape vs desertification and urbanization

Regional landscaping Maintenance

Gord Baird project

6. How can the Ag-water rate subsidy make the connection to the CRD Regional Food Strategy?

Where are the food guys?

Inclusive of all farmers

Affordability to Maintain access to Irrigation

Incentivize with Educational Resources

7. **Can the CRD direct Municipalities what to do with the Ag Water Subsidy funds?**

Could the CRD pay the portion up to the wholesale price of what the municipalities pay for water but not up to the differential of the retail rate the muni's charge (the current formula)?

Make them "municipalities" whole. How about making the farmers "whole"

What are the water rates paid by small urban farms

Growing more food: Could the subsidy $$ be directed to improve water distribution or irrigation practices? i.e. when a 2 inch meter affects the pressure.

In areas where a new housing subdivision is put in water pressure drops for farm users more at the end of the line. So engineers and planners prioritizing development over farming needs. Apply some water subsidy towards water balancing, freq drives on electric motors to maintain pressure and flow, explain to farmers and citizens why they are prioritizing one over another.

Enforcement and/or spot-checks by a qualified individual.

8. Are there examples of sliding scale Ag Water Rates?

Variable rates would require hefty monitoring, at very least landowners should be subject to annual audit. The rationale for a sliding scale of discount would assure residents they are paying to support food

Golf courses: John to find out which rate they are paying

Riding ring vs riding stables should charge their clients for the water use

Illicit Trade off water - how can municipalities catch cheaters and re-coup taxes?

Verified farm status

Increase consumer confidence

CRD Pride in local food production (and the subsidy)

Young Farmers and long term leases

Ensure the program is assured for the long term

it would help pay for a regional Agrologist.

Increase Education and Outreach

Could there be too many categories/tiers of rate structure to administer?

9. What are the Potential Negative Consequences

Increased price of land

Horticulture (Tree Nurseries or Herbs/non-caloric food)

A bigger problem is the bait and switch, whereby a legit farmer leases the land for nothing, the landowner gets his tax and water rate discount and nothing substantial is grown or harvested, but the lovely lawns and shrubs get lots

of subsidized water. The other one is the animal swap and sale, like lamas for example. I did have this explained to me at one time but can't remember how it works. BC assessment should have all the workaround tactics figured out by now and should be able to give us the details.

10. SCALE of FARM OPERATIONS

· Urban and small leasing farmers

· Larger operations who farm bigger pieces of land and also produce huge amounts of food

· Value added processing of farm grown products need safe and clean water for vegetable washing and packing

· Unused or underutilized land could produce human food in vast quantities, chickpeas, lentils, beans with minimal water.

11. IRRIGATION INFRASTRUCTURE

Infrastructure is gone or almost gone, investment needed to reverse trends consumer water pricing fatigue. The 5-year projections show it is getting far worse as aging infrastructure must be replaced, new dams for new densities on hillsides, moving the Sooke lake intake tower, starting to get water from the Leech.

Well / aquifer water sources? Contamination testing standards ? The Partnership for Water Sustainability invites you to test drive the BC Landscape Water Calculator. Interesting, this map shows all the wells in the CRD. https://bcwatercalculator.ca/landscape/irrigation

12. COMPOST

· Food waste compost for reducing water requirements. All local soils need this bad. CRD not taking the lead on this although has been mentioned for at least 10 years, passing the buck. More cooperation needed amongst municipalities.

· Limited "Recycling of Manure" on Peninsula - horse manure specifically, all goes to landscapers
- compost available to farmers in Surrey, still a little pricy for broad acre farms as compared to Fertilizer but doable for smaller scale organic. currently processing 40,000 tonnes. A metric tonne would be more than a cubic meter of material of this consistency. Getting Victoria/all city dwellers onto a similar program would be good, not sending it to Delta or where ever it is going now.

11

Regional Water Supply 2022 Budget Overview

Water Advisory Committee

December 2, 2021

11

12

2021 – 2022 Budget Factors

- 2021 Budget – year end budget projections
- Water demand projection and trends
- Operating budget and minor service level adjustments
- Continuing investment in infrastructure upgrades
- Capital funding & debt servicing

12

13

2022 Budget Context

	% of Expenditures
Debt Servicing	22.7%
Capital Funding	28.7%
Supply System O&M	17.2%
Supply System Engineering	1.4%
Service Administration	0.6%
Watershed Protection Program	15.6%
Cross Connection Control Program	2.1%
Demand Management Program	1.9%
Water Quality Program	5.1%
Agricultural Water Rate Funding	4.7%
Total:	100%

13

14

2022
Operating & Capital Budgets

14

15

Operating Budget

2022 Supply System O&M Budget: $16,049,367

Item	2022 Budget	Budget change (over 2021)
Operations & Maintenance (Core)	$15,732,367	$955,081
One-time budget supplementary items	$175,000	$(100,000)
On-going budget supplementary items	$142,000	$(147,000)
Total	$16,049,367	$708,081

15

16

Capital Budget

2022 Supply System Capital Budget: $26,697,250
2022 Supply/JDF Distribution Capital Budget: $2,240,000

Item	2022 Budget	Budget change (over 2021)
Transfers to capital funds	$10,496,976	$850,646
Debt servicing	$8,292,927	$(40,740)
Total	$18,789,903	$809,906

16

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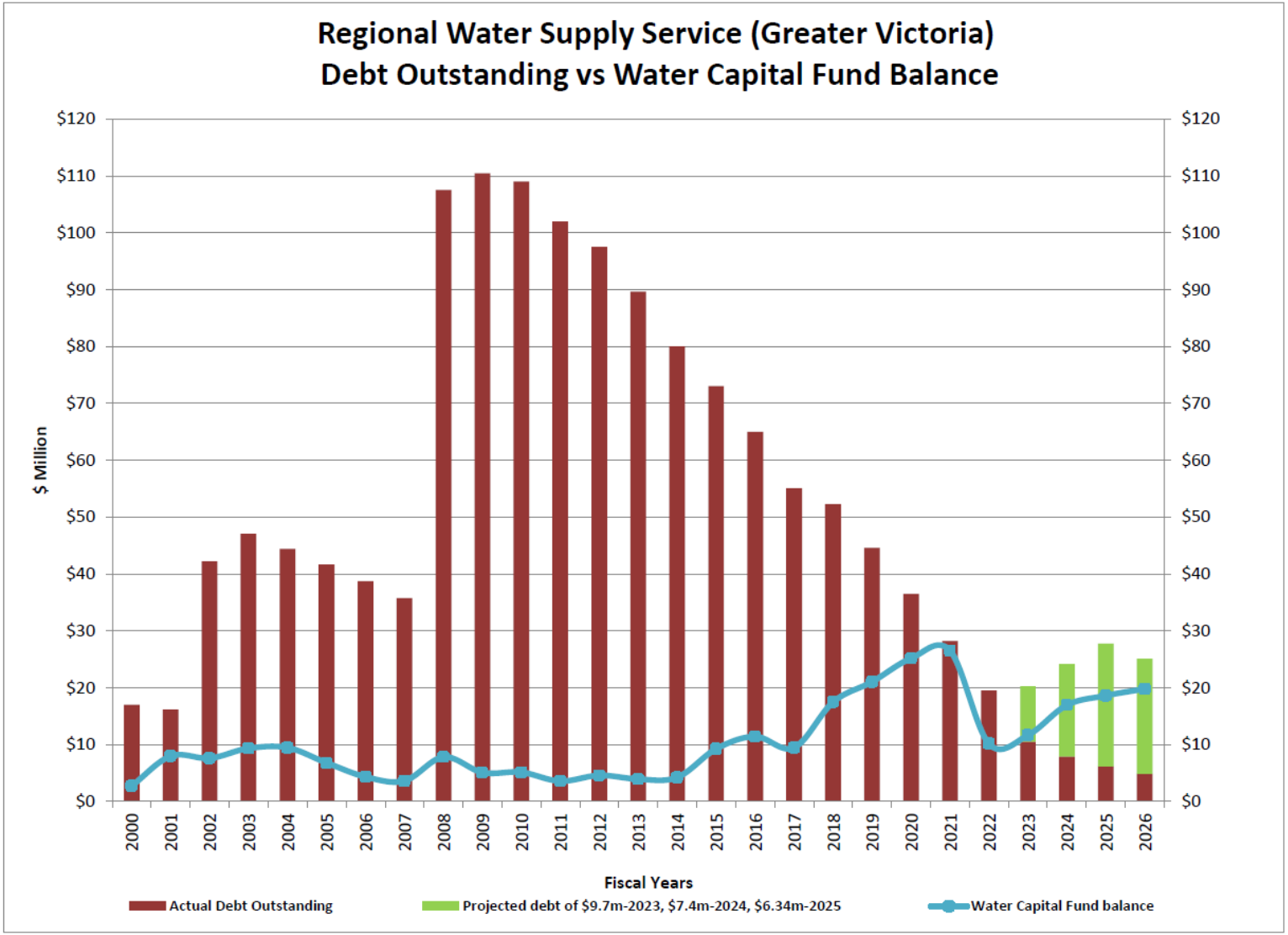
Outstanding Debt & Capital Funding



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Agricultural Water Rate Funding

- 2022 Agricultural Water Rate $0.2105 / cubic metre

- Total 2022 Agricultural Water Rate Budget $1,700,000

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2022
Water Demand & Wholesale Rate

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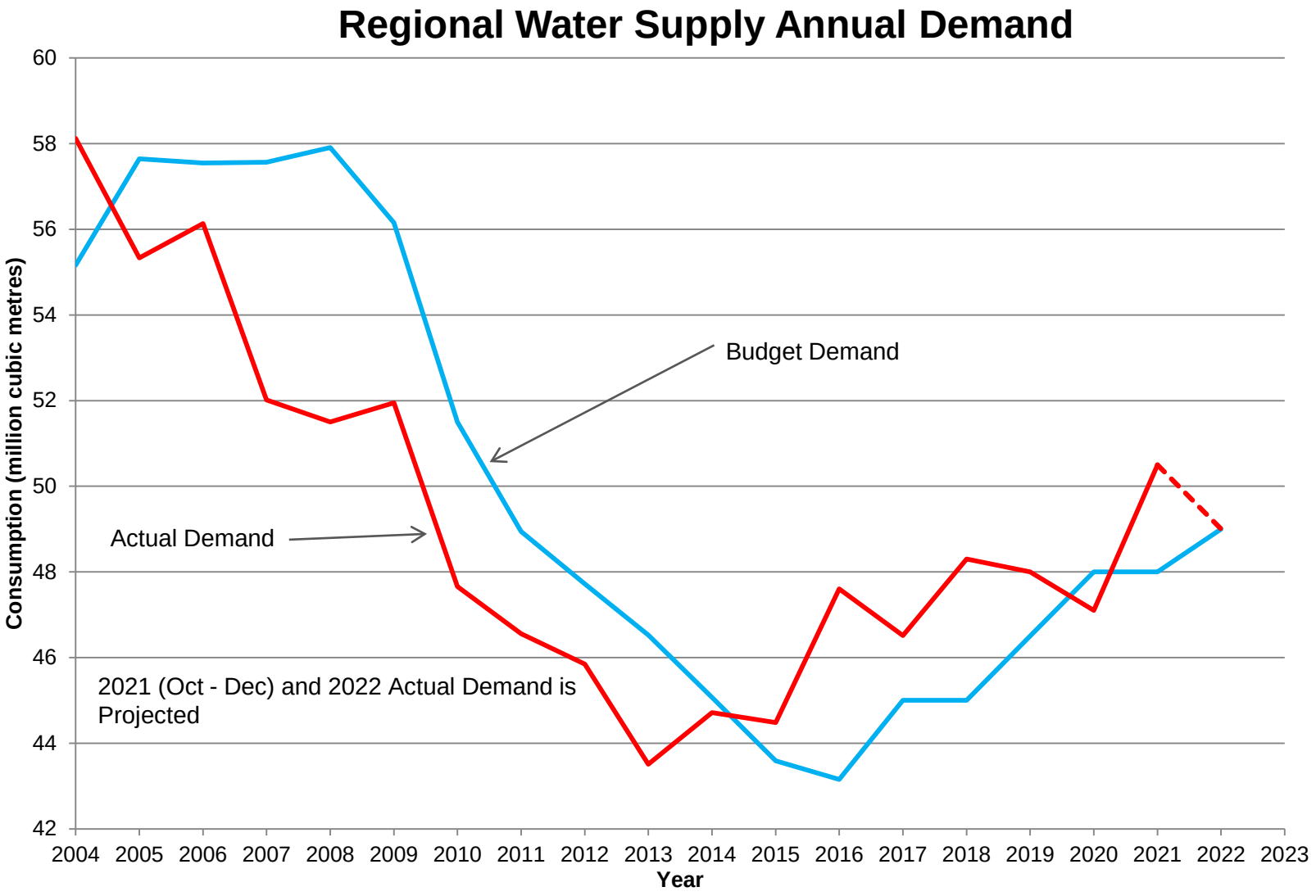
Budget Demand & Actual Demand



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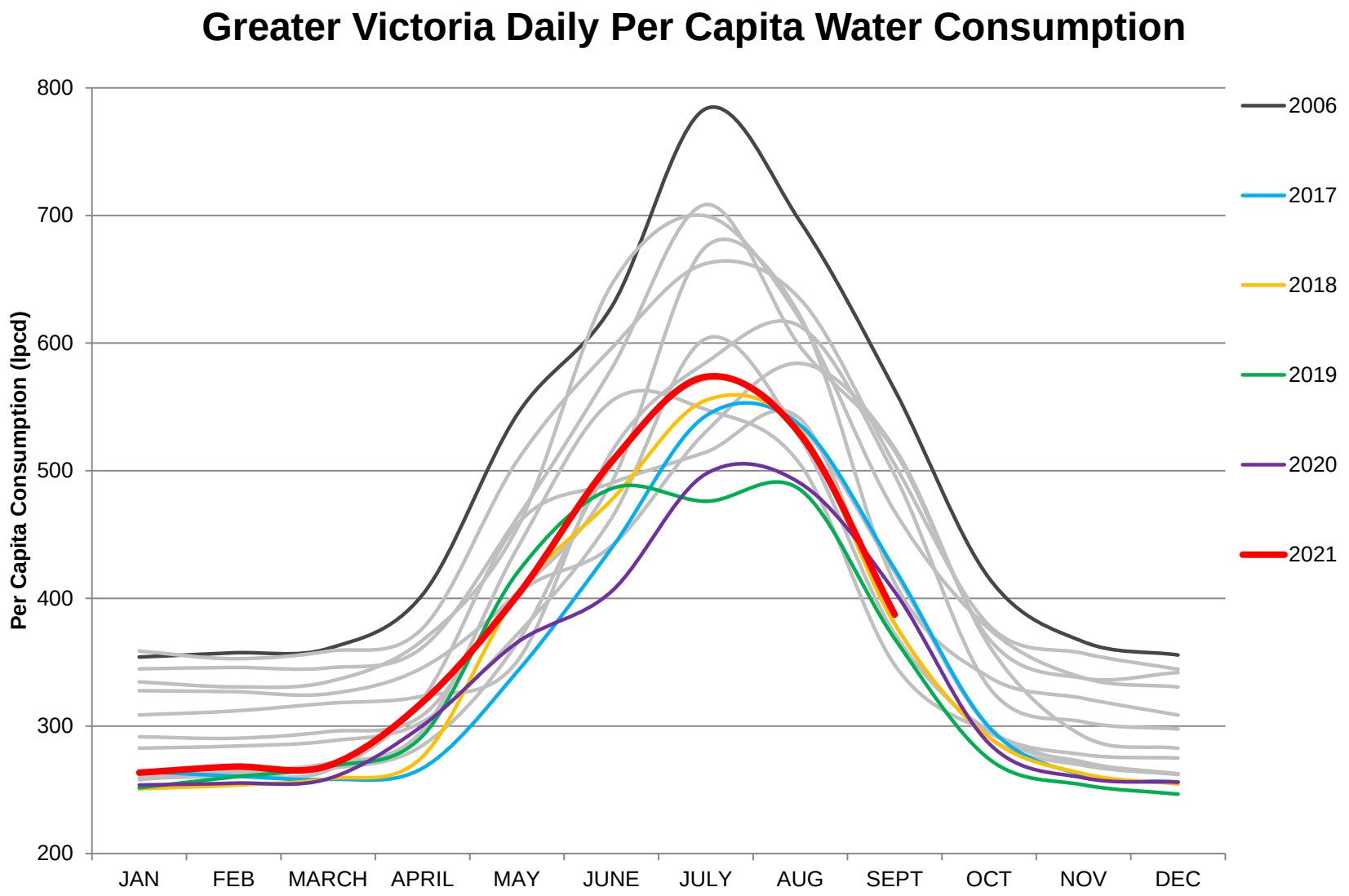
Monthly Per Capita Consumption



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Demand & Water Rate

2022 Total Revenue Budget: $36,539,270

Item	2022 Budget	Budget change (over 2021)
Budget Demand	49,000,000 m3	1,000,000 m3
Wholesale Water Rate	$0.7332 / m3	$0.0184 / m3
Annual cost increase to average household	$4.32	

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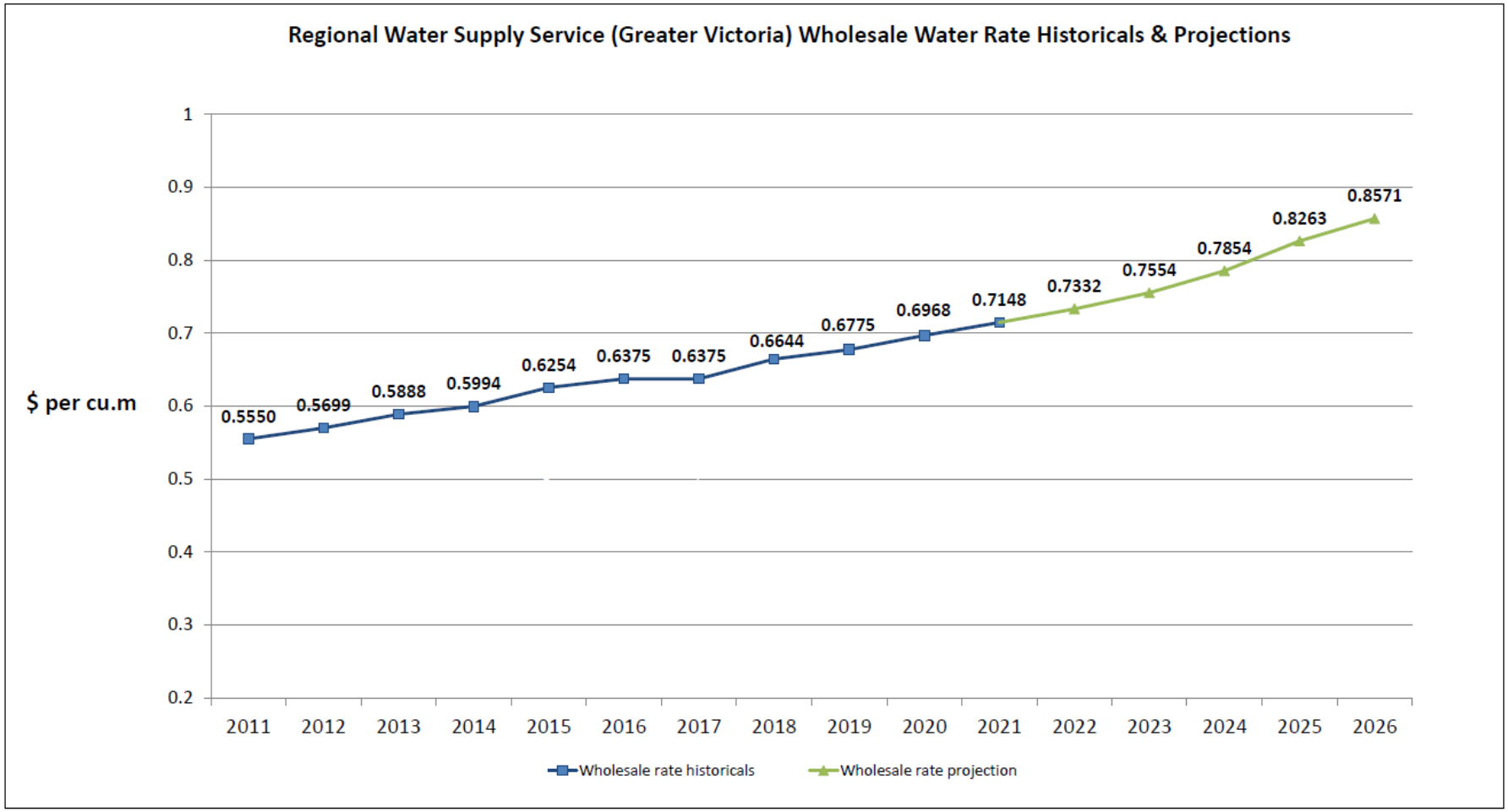
23

Wholesale Rate History & Projection



23

Making a difference...together

WAC 21-02

REPORT TO WATER ADVISORY COMMITTEE
MEETING OF THURSDAY, DECEMBER 2, 2021

SUBJECT **Regional Water Supply System – Electricity Generation Initiative History**

ISSUE SUMMARY

To provide a history of Regional Water Supply System electricity generation initiatives.

BACKGROUND

In 2004, the Capital Regional District (CRD) applied for and was awarded $75,000 in funding through the (Federal) Green Municipal Enabling Fund to assist with the study of a hydroelectric generation opportunity within the Regional Water Supply System. The Humpback Pressure Reducing Station (HPRS) was identified as a facility with the greatest potential for hydroelectric generation as this location has the largest flow and pressure across the valves in the system (See Appendix A). The HPRS reduces the pressure or head that results from the elevation difference between the Head Tank at the upstream end of the Kapoor Tunnel and the downstream end of Transmission Main No. 5 at the HPRS, to an operating pressure that provides adequate pressure for downstream transmission and distribution purposes while protecting the pipe infrastructure from over pressurization. The purpose of the study was to determine if the energy dissipated through the HPRS could be recovered through a power generating facility and converted to high quality electricity.

A conceptual design was prepared in order to inform the study. The design called for a single piped offtake that would divert the treated water from Transmission Main No. 5 up through the new powerhouse floor to a set of two Francis style turbines. After passing through the turbines, the water would be returned to the Transmission Mains No. 1 and No. 3 downstream of the HPRS (See Appendix B). The HRPS operation would continue to:

1. Regulate downstream water pressure in the Transmission Mains
2. Minimize water hammer in the upstream Transmission Main
3. Bypass flows during peak periods that exceed the flow capacity of the turbines
4. Control pressure during maintenance periods and when the power grid is down

The preliminary feasibility analysis addressed:

1. The quantity and availability of the flow and the pressure available for power generation.
2. The feasibility of adjusting to highly variable flows (day/night flow variation and summer/winter flow variation) while maintaining an acceptable level of efficiency and controlling the electrical frequency within an inherently variable system.
3. The feasibility of obtaining the necessary water licenses, local permits and Provincial approval under the mandate of the Regional Water Supply Service to engage in this type of project.
4. The feasibility of interconnecting to the BC Hydro power grid. For small projects such as this, the interconnection to the grid and associated communication and protection can be very complex and cost prohibitive.

The initial analysis concluded that the project was potentially feasible but further work was required to confirm the details of how the water system would be protected and the market for the

power output. The CRD subsequently received a favourable report from BC Hydro on the interconnection feasibility and cost. It was determined that the BC Hydro interconnection would occur via the BC Hydro three phase feeder that terminates near the HPRS and connects back to the Colwood BC Hydro substation. The electricity generated would be sold to BC Hydro under an Energy Purchase Agreement. Annual power production was estimated at up to 3,600 megawatt hours, or enough energy to supply about 250 homes.

There were also some notable environmental benefits of the project identified at the feasibility stage including a potential annual reduction of 1,800 tonnes of CO^2 (for every megawatt hour of green energy generated by the project, 0.50 tonnes of CO^2 emission would be avoided).

At the feasibility stage of the project, the CRD determined that the project would be developed and delivered as a Design, Build, Finance, Operate (DBFO) project. It was proposed that the contractor would operate the facility for a 20-year term and collect the revenues from the energy sold. An annual royalty would be paid to the CRD.

The next phase of the project was to advance the procurement process and a Request for Expressions of Interest (RFEOI) was released in 2008 to seek a DBFO partner. Six responses to the RFEOI were received and a preferred proponent was selected. All of the proponents indicated that the project was not financially viable without some level of grant funding. The preferred proponent indicated the initial capital cost to construct the facility would be approximately $2.9 million. Under the best case scenario, with a $500,000 capital grant, estimated operating costs of $81,000 annually, and estimated revenue of $370,000 annually, the annual CRD royalty payment was estimated at $37,000 (all 2009 dollars). At the time, North America was facing the onset of the global financial crisis. Ultimately, the preferred proponent could not raise the debt financing to fund the initial project capital costs and the Regional Water Supply Commission decided in 2009 to not take on the project financing in order to manage the Service's financial risk. The project did not proceed any further and has not been reconsidered since. Looking ahead, the operation of the HPRS may be adjusted in or order to provide higher pressure to the downstream Transmission Mains to meet future servicing requirements. This would mean that less pressure and flow would be available for power generation.

The Sooke River Road Disinfection Facility (part of the Regional Water Supply System) was constructed in 2012 and included a 'pump as turbine' (PAT) installation that generates power with water flowing through the facility. At a high flow of 90 litres/second, the PAT generates approximately 12 kilowatt hours of electricity which powers one of the ultraviolet water treatment reactors in the facility.

More recently, in 2017, the CRD reviewed power generation options at Sooke Lake Reservoir Dam as a potential backup to the overhead high voltage power lines that provide power to the dam control and head tank infrastructure. The overhead power lines are vulnerable to tree fall and extreme weather events. The study determined that power generation to meet the electricity load requirements of the infrastructure could only be met by diesel generators. As part of the recent intake tower screen replacement project, a generator was added at the Head Tank, to power the Head Tank equipment and an existing generator at the Dam became a dedicated generator to power the spillway equipment in the event of a power failure.

CONCLUSION

Potential opportunities to generate power through the Regional Water Supply infrastructure have been explored over the years. However, two previous feasibility studies have not resulted in the implementation of electricity generation facilities, primarily due to technical and financial limitations.

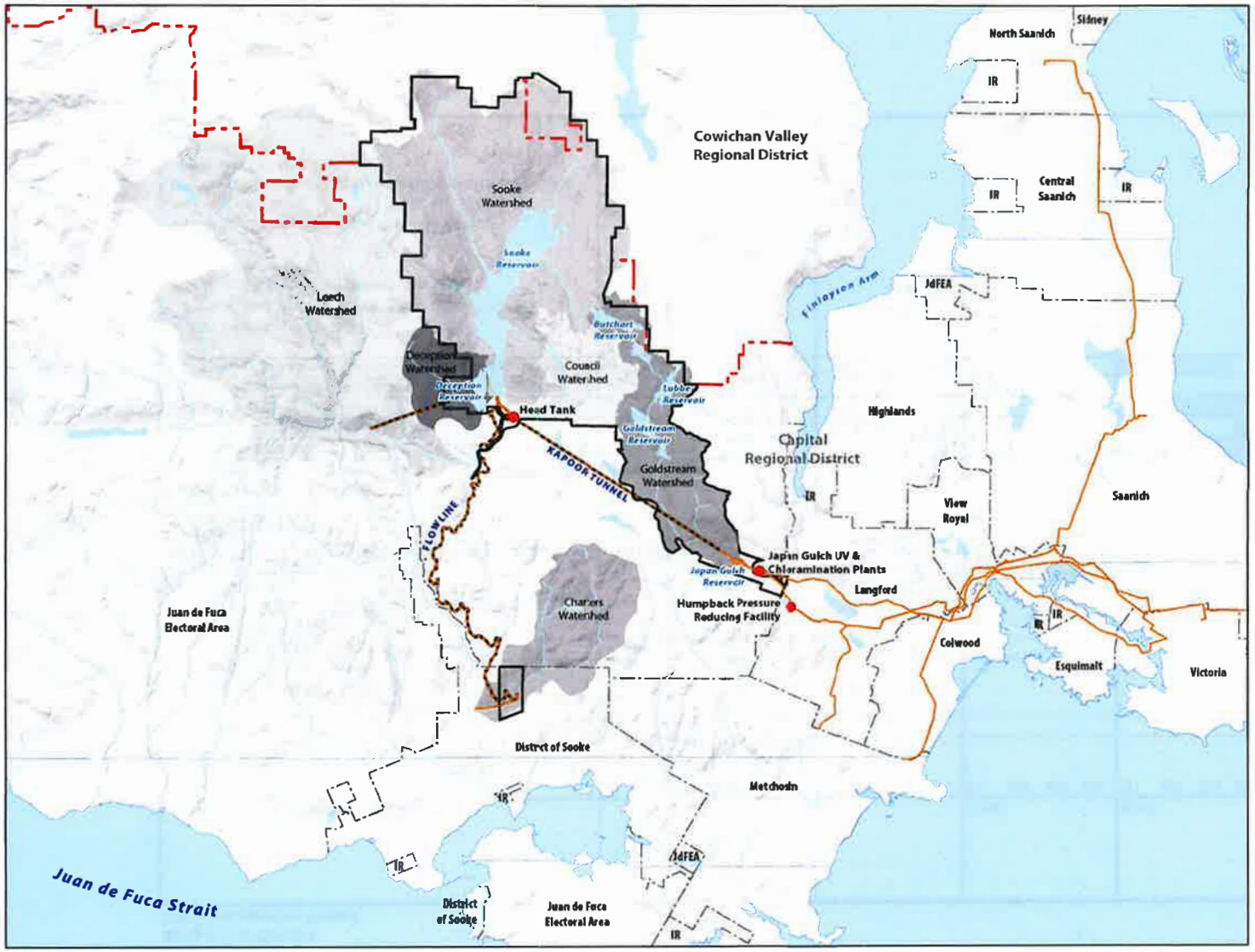
RECOMMENDATION

That the Water Advisory Committee receive this report for information.

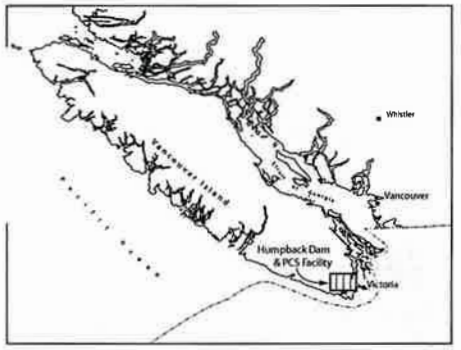
Submitted by:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services

ATTACHMENTS

Appendix A: Humpback Pressure Reducing Station Location
Appendix B: Proposed Powerhouse Plan



WATEFSHED OVERVIEW MAP



LOCATION MAP

LEGEND

- Tunnel / Flowline
- Supply Main
- Regional Boundary
- Municipal Boundary
- Water Body
- Watercourse / River
- Greater Victoria Water Supply Area

Prepared for Planit Management by: SPATIAL VISION GROUP

North

0 1 2 Kilometres

0 1 2 Miles

Projection: UTM Zone 10
Datum: NAD83

WATERSHED OVERVIEW
PLAN VIEW

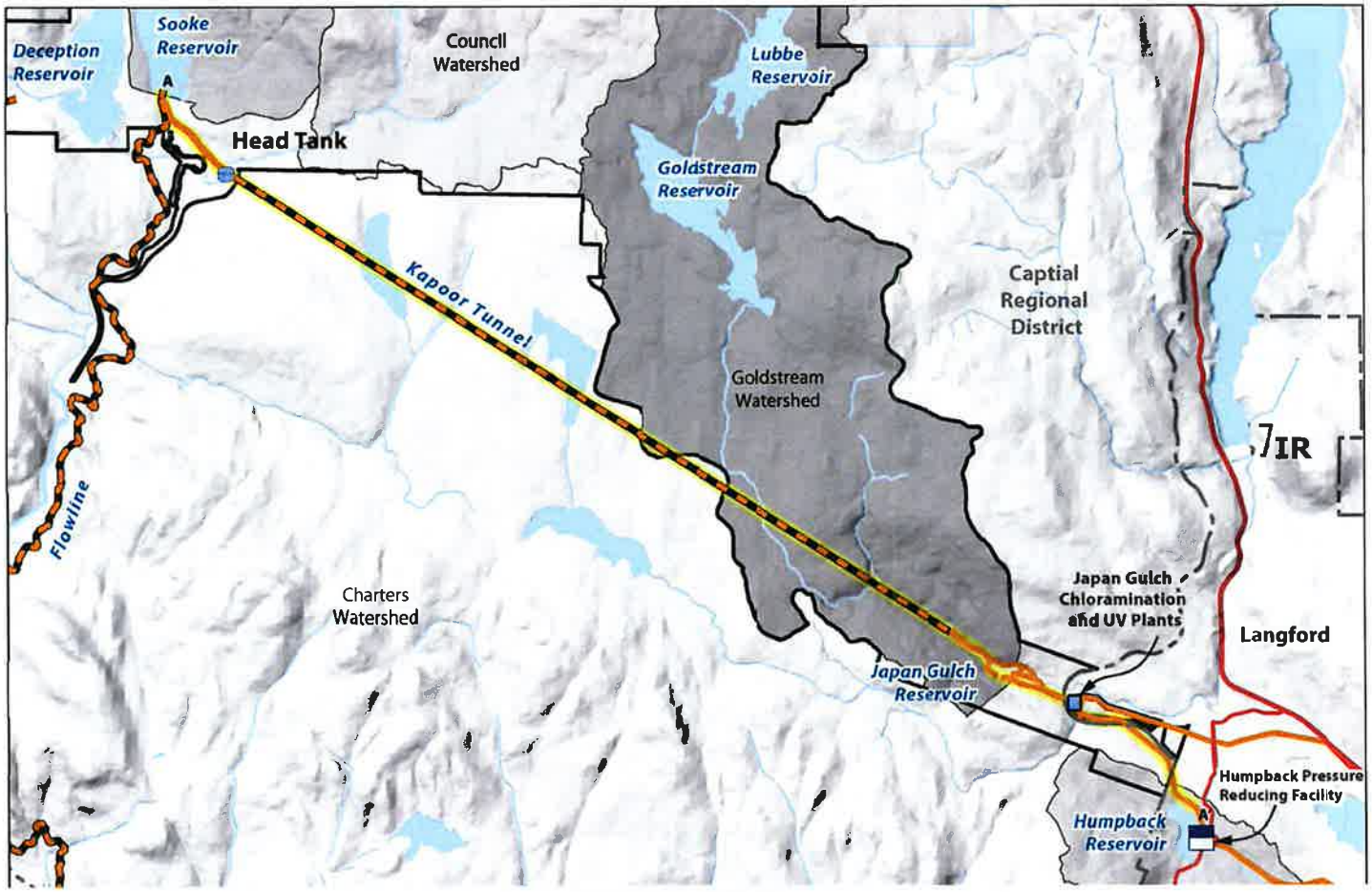
Data provided by: CRD CAPITAL REGIONAL DISTRICT

Date: October 2007

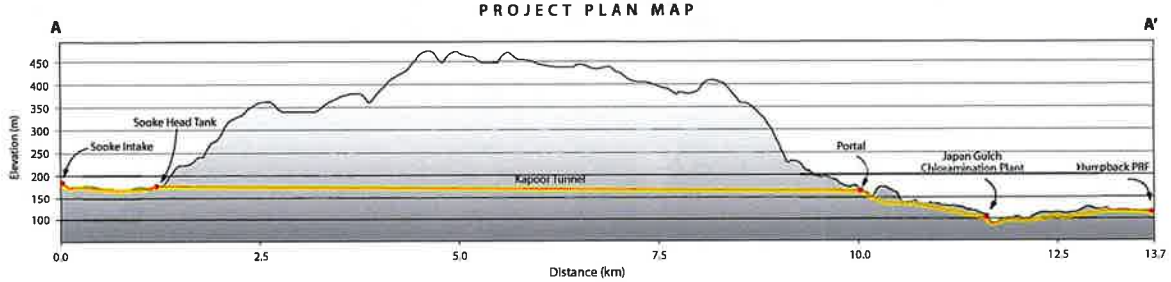
Drawing No: 001

Revision: D

Filename: /Watershed_Overview_Map_1D.pdf



PROJECT PLAN MAP



PROFILE

LEGEND

- Disinfection Plant
- Reservoir
- Pressure Control Station
- Tunnel / Flowline
- Supply Main
- Regional Boundary
- Municipal Boundary
- Water Body
- Watercourse / River
- Greater Victoria Water Supply Area
- Highway
- Major Road
- Road

Prepared for Planit Management by: SPATIAL VISION GROUP

North

0 0.5 1 Kilometre
0 0.5 1 Mile

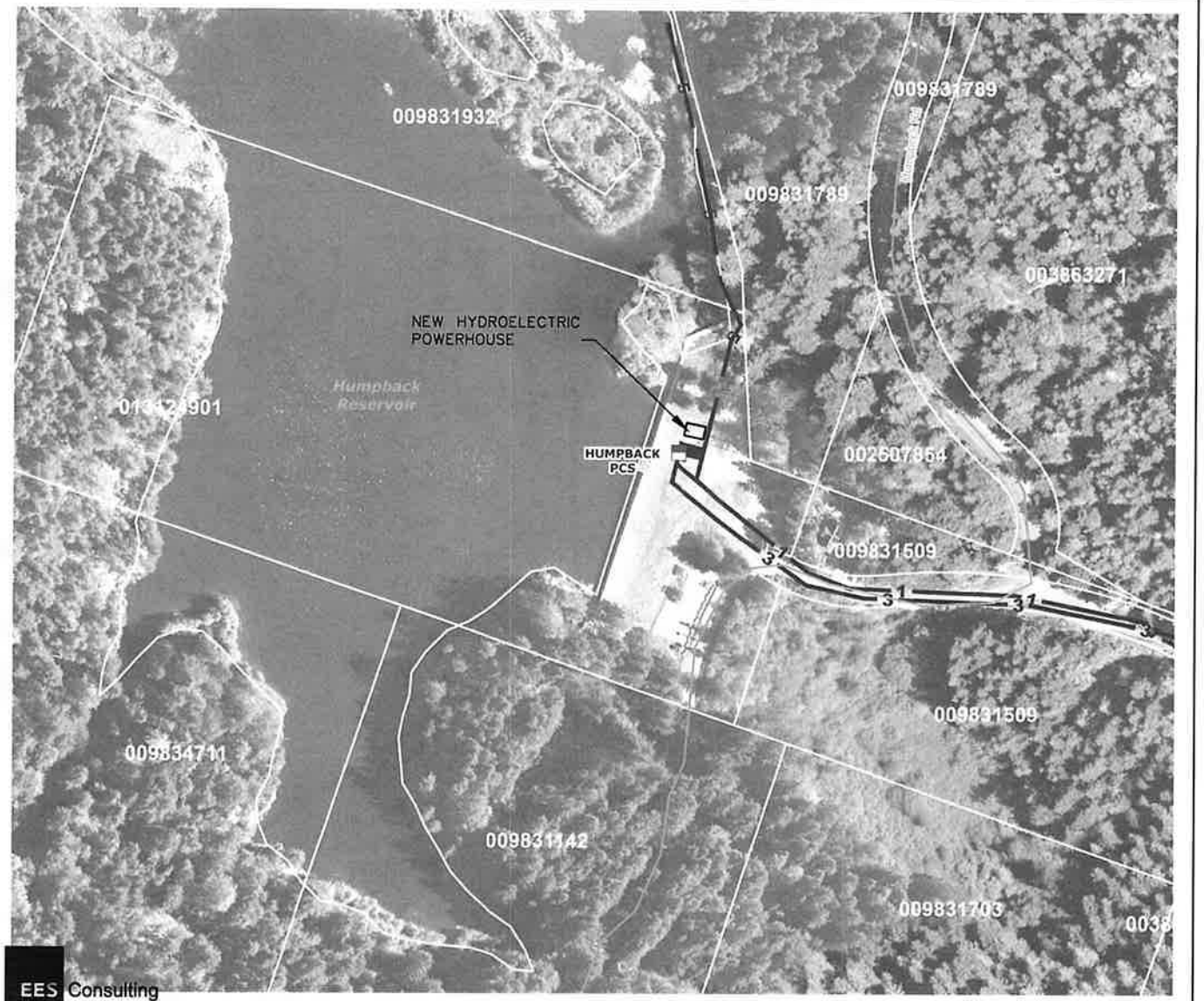
Projection: UTM Zone 10
Datum: NAD83

PROJECT OVERVIEW
PLAN AND PROFILE

Data provided by: CRD CAPITAL REGIONAL DISTRICT

Date: October 2007
Drawing No: 002
Revision: C

Filename: :/ProjectOverview_Map_2C.pdf



- DISINFECTION PLANT
- RESERVOIR
- PUMP STATION
- PRESSURE CONTROL STATION
- TUNNEL / FLOWLINE
- SUPPLY MAIN
- REGIONAL BOUNDARY
- MUNICIPAL BOUNDARY
- WATER BODY
- WATERCOURSE
- GREATER VICTORIA WATER SUPPLY AREA

LEGAL BOUNDARY, # = (PID)

North

PROPOSED POWERHOUSE

Site Overview

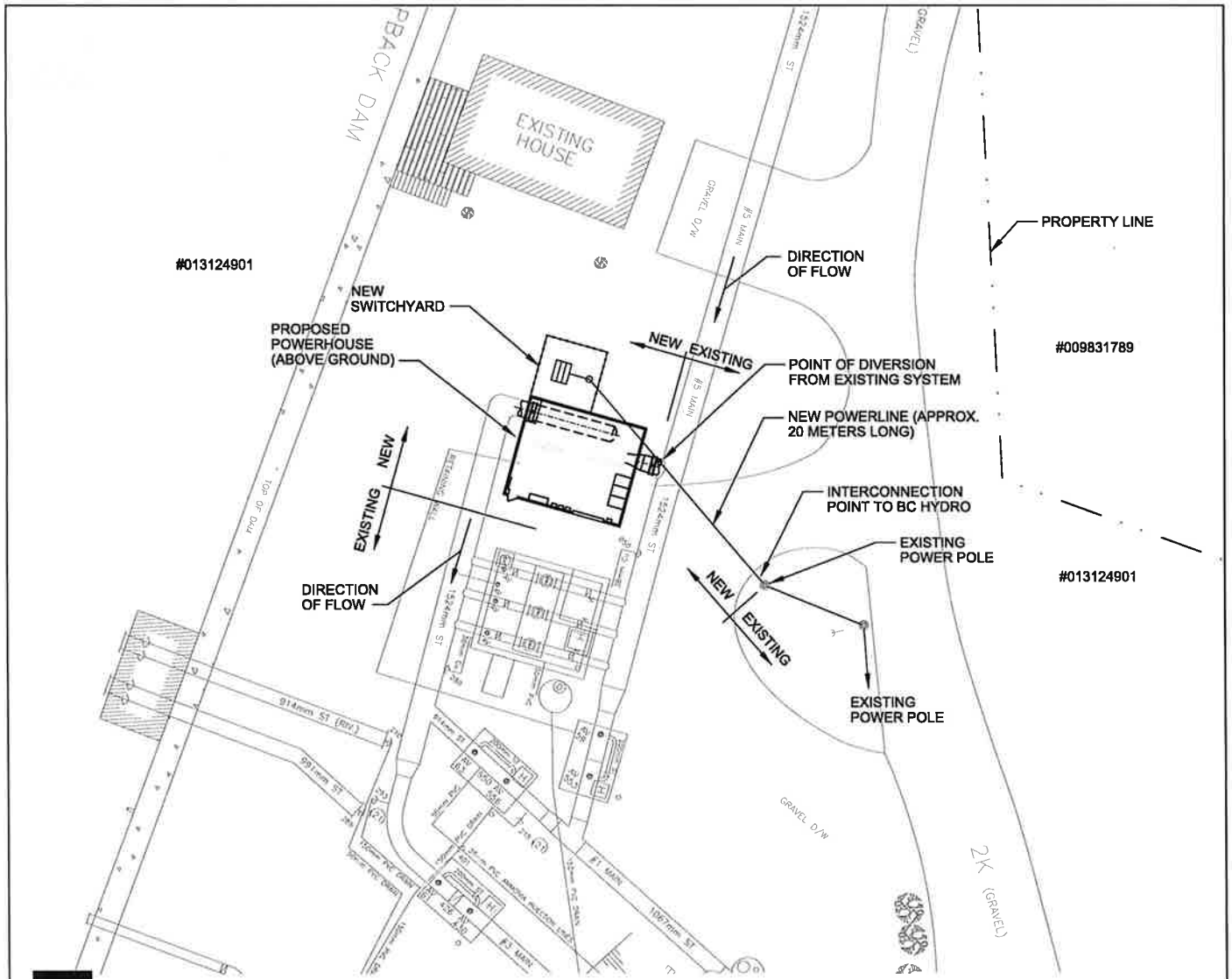
Data provided by: CRD Capital Regional District, Water Services

Date: MAY 2008

Drawing No: 003

Revision:

PRINTED BY: jackson 5/12/2008 3:46:13 PM
L:\Power Services Group Projects\Projects\Capital Regional District-Graham Mon\Drawings\EES - Site Overview.dgn



LEGEND

PROPERTY LINE

North

PROPOSED POWERHOUSE
PLAN VIEW

Data provided by: CRD Capital Regional District, Water Services	Date: MAY 2008
	Drawing No: 004
	Revision:

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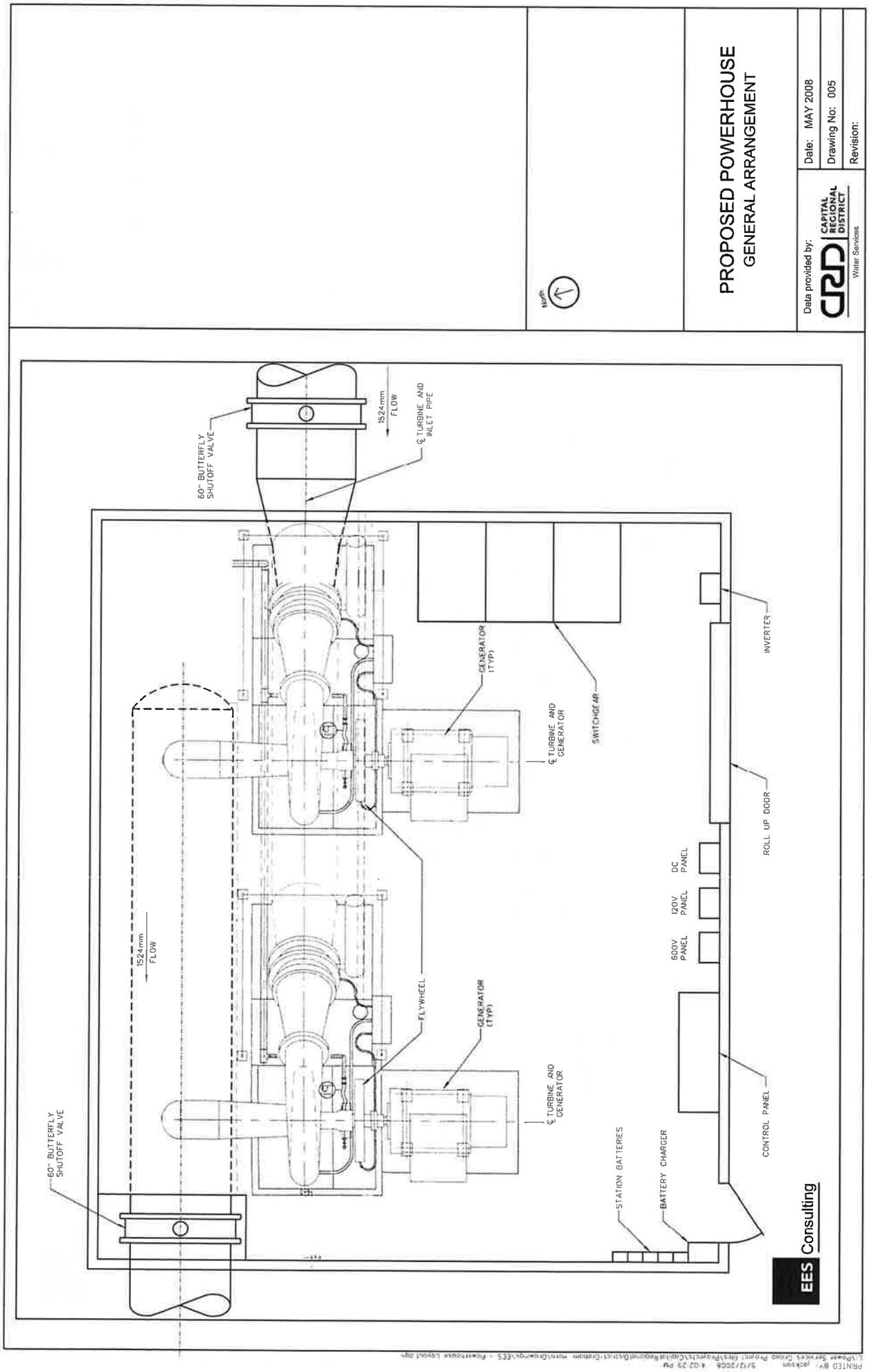
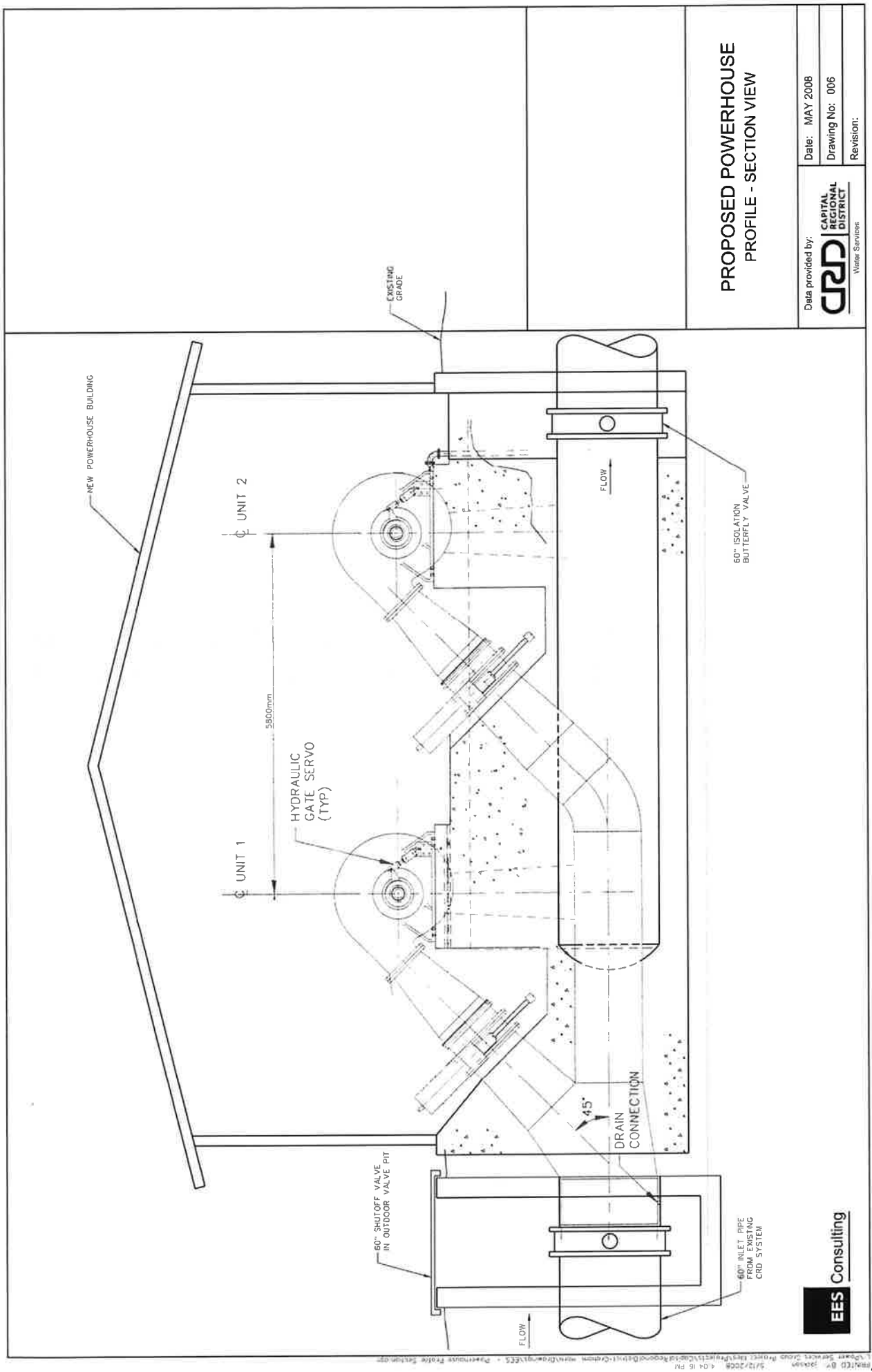
APPENDIX B

APPENDIX B


PROPOSED POWERHOUSE
GENERAL ARRANGEMENT
Data provided by:
CRD CAPITAL REGIONAL DISTRICT
Water Services
Date: MAY 2008
Drawing No: 005
Revision:
60" BUTTERFLY SHUTOFF VALVE
1524mm FLOW
℄ TURBINE AND INLET PIPE
GENERATOR (TYP)
℄ TURBINE AND GENERATOR
SWITCHGEAR
INVERTER
ROLL UP DOOR
600V PANEL
120V PANEL
DC PANEL
FLYWHEEL
CONTROL PANEL
STATION BATTERIES
BATTERY CHARGER
EES Consulting


PROPOSED POWERHOUSE
PROFILE - SECTION VIEW
Data provided by:
CRD CAPITAL REGIONAL DISTRICT
Water Services
Date: MAY 2008
Drawing No: 006
Revision:
EXISTING GRADE
NEW POWERHOUSE BUILDING
UNIT 2
UNIT 1
5800mm
HYDRAULIC GATE SERVO (TYP)
FLOW
60" ISOLATION BUTTERFLY VALVE
45°
DRAIN CONNECTION
60" SHUTOFF VALVE IN OUTDOOR VALVE PIT
60" INLET PIPE FROM EXISTING CRD SYSTEM
FLOW
EES Consulting

33

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REGIONAL WATER SUPPLY COMMISSION
Wednesday, November 17, 2021 at 11:30 AM

MEETING HOTSHEET (ACTION LIST)

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.

3. ADOPTION OF MINUTES

That the minutes of the October 20, 2021 meeting be adopted.

CARRIED

7. COMMISSION BUSINESS

7.1. Regional pH and Corrosion Study Update

The Regional Water Supply Commission receives the Greater Victoria pH & Corrosion Study report for information.

CARRIED

7.2. Water Quality Summary Report for Greater Victoria Drinking Water System – July-September 2021

That the Regional Water Supply Commission receive the Summary of Recommendations from Other Water Commissions for information.

CARRIED

7.3. Summary of Recommendations from Other Water Commissions

That the Regional Water Supply Commission receive the Summary of Recommendations from Other Water Commissions for information.

CARRIED

7.4. Water Watch Report

That the Regional Water Supply Commission receives the November 8, 2021 water watch report for information.

CARRIED

33

34

Making a difference...together

REGIONAL WATER SUPPLY COMMISSION
Wednesday, October 20, 2021 at 11:30 AM

MEETING HOTSHEET (ACTION LIST)

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.

3. ADOPTION OF MINUTES

That the minutes of the July 21, 2021 meeting be adopted.

CARRIED

8. COMMISSION BUSINESS

8.1. Water Conservation Initiative - Once-Through Cooling Project Reduced Rebates Program

That staff be directed to advertise and administer a once-through cooling equipment replacement rebate program in the 2022-2026 budgets for a total amount of $20,000 per year up to a maximum of $2,500 per water account.

CARRIED
Opposed: Graham

Action
Staff to report back at the end of 2022 on the environmental benefits of the once-through cooling equipment replacement rebate program including energy costs of once-through cooling versus forced air cooling.

G. Harris

8.2. 2022 Service Planning – Water

The Regional Water Supply Commission recommends the Committee of the Whole recommend to the Capital Regional District Board:
That Appendix A, Community Need Summary – Water be approved as presented and form the basis of the 2022-2026 Financial Plan.

CARRIED

8.3. Regional Water Supply Service 2022 Operating and Capital Budget

That the Regional Water Supply Commission recommends the Committee of the Whole recommends to the Capital Regional District Board to:

1. Approve the 2022 Operating and Capital Budget and the Five Year Capital Plan;

34

2. Approve the 2022 wholesale water rate of $0.7332 per cubic metre;
3. Approve the 2022 agricultural water rate of $0.2105 per cubic metre;
4. Direct staff to balance the 2021 actual revenue and expense on the transfer to the water capital fund; and
5. Direct staff to amend the Water Rates Bylaw accordingly.

CARRIED

8.4. Water Quality Summary Report for Greater Victoria Drinking Water System – April-June 2021

The Regional Water Supply Commission receives the Water Quality Summary Report for the Greater Victoria Drinking Water System – April to June 2021 for information.

CARRIED

8.5. Summary of Recommendations from Other Water Commissions

That the Regional Water Supply Commission receives the summary of recommendations from other water commissions for information.

CARRIED

8.6. Water Watch Report

That the Regional Water Supply Commission receives the October 11, 2021 water watch report for information.

CARRIED

File No. 902-03

CAPITAL REGIONAL DISTRICT - INTEGRATED WATER SERVICES

Water Watch

Issued November 22, 2021

Water Supply System Summary:

1. Useable Volume in Storage:

Reservoir	November 30 5 Year Ave		November 30/20		November 21/21		% Existing Full Storage
	ML	MIG	ML	MIG	ML	MIG	
Sooke	77,240	16,993	80,190	17,642	89,449	19,679	96.5%
Goldstream	7,189	1,582	8,989	1,978	9,907	2,179	99.9%
Total	84,429	18,574	89,179	19,619	99,355	21,858	96.9%

2. Average Daily Demand:

For the month of November	106.3 MLD	23.39 MIGD
For week ending November 21, 2021	106.0 MLD	23.32 MIGD
Max. day November 2021, to date:	115.1 MLD	25.33 MIGD

3. Average 5 Year Daily Demand for November

Average (2016 - 2020)	99.7 MLD [1]	21.93 MIGD [2]

[1]MLD = Million Litres Per Day [2]MIGD = Million Imperial Gallons Per Day

4. Rainfall November:

Average (1914 - 2020):	260.7 mm
Actual Rainfall to Date	406.0 mm (156% of monthly average)

5. Rainfall: Sep 1- Nov 21

Average (1914 - 2020):	411.3 mm
2021	796.4 mm (194% of average)

6. Water Conservation Action Required:

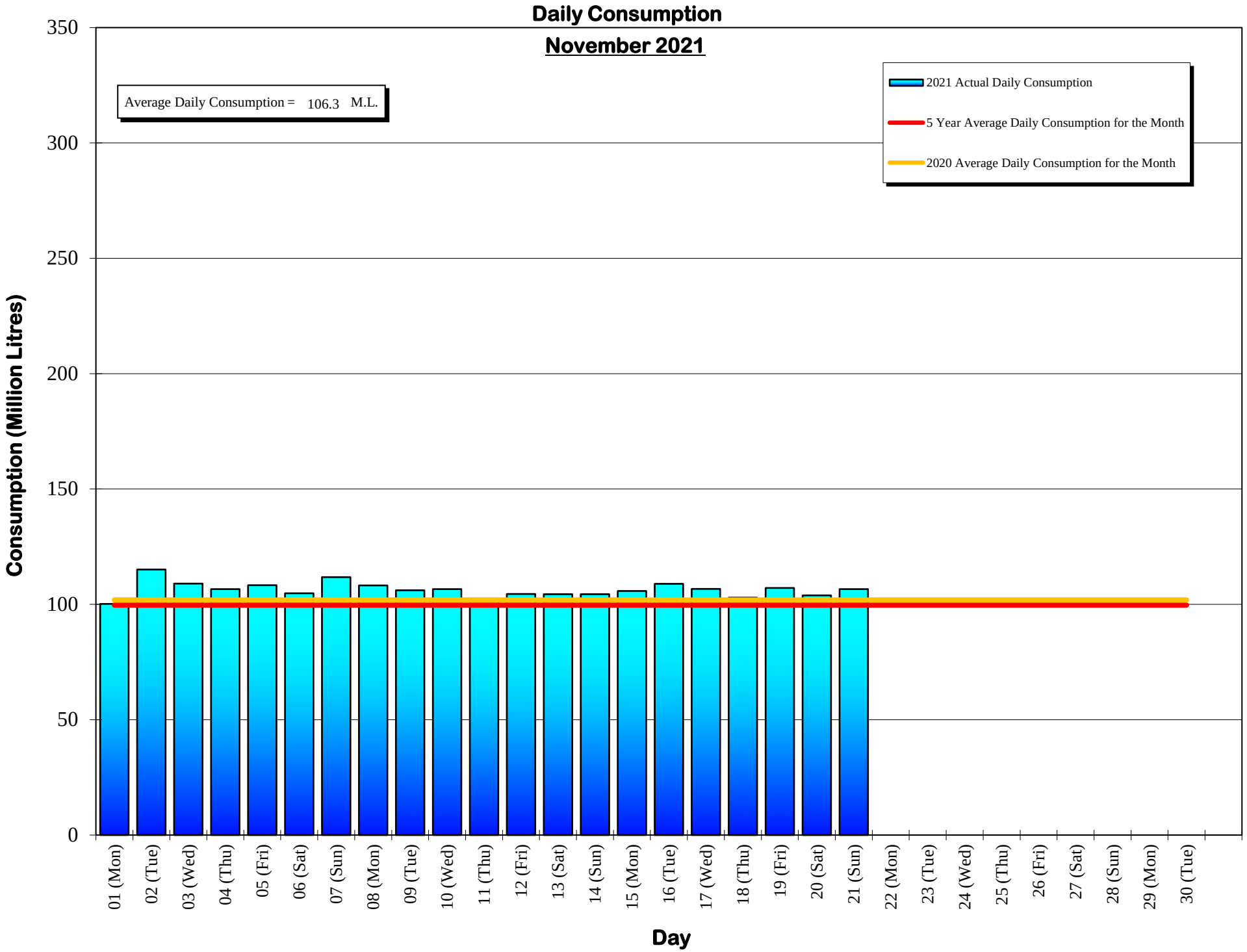
To avoid possible leaks this spring, now is the time to winterize your sprinkler system.
Visit our website at www.crd.bc.ca/water for more information.

If you require further information, please contact:

Ted Robbins, B.Sc., C.Tech
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

37



37

J:\WATERENG\HYDROLGY\AMRIT\MONTHEND.21\H2o watch 2021.xlsxCons. Chart

38

Daily Consumptions: - November 2021

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 (Mon)	100.2	<=Min	22.1	9	3	Sunny / P. Cloudy / Showers	7.6	0.0	7.6
02 (Tue)	115.1	<=Max	25.3	9	6	Rain	24.1	0.0	24.1
03 (Wed)	109.0		24.0	11	9	Rain	18.5	0.0	18.5
04 (Thu)	106.6		23.4	13	6	Cloudy / Showers / P. Sunny	11.7	0.0	11.7
05 (Fri)	108.3		23.8	8	5	Cloudy / Showers / P. Sunny	5.3	0.0	5.3
06 (Sat)	104.8		23.0	7	4	Cloudy / Showers	12.2	0.0	12.2
07 (Sun)	111.8		24.6	6	2	Cloudy / Rain	20.6	0.0	20.6
08 (Mon)	108.2		23.8	9	4	Cloudy / Showers / P. Sunny	0.8	0.0	0.8
09 (Tue)	106.1		23.3	7	5	Cloudy / Rain	33.5	0.0	33.5
10 (Wed)	106.6		23.4	8	4	Cloudy / Showers	6.3	0.0	6.3
11 (Thu)	101.3		22.3	9	6	Cloudy / Rain	16.5	0.0	16.5
12 (Fri)	104.5		23.0	12	7	Cloudy / Showers	6.6	0.0	6.6
13 (Sat)	104.4		23.0	7	6	Cloudy / Rain	36.3	0.0	36.3
14 (Sun)	104.4		23.0	14	7	Heavy Rain	89.9	0.0	89.9
15 (Mon)	105.8		23.3	11	4	Heavy Rain	101.8	0.0	101.8
16 (Tue)	108.9		24.0	8	1	Sunny / P. Cloudy / Showers	0.3	0.0	0.3
17 (Wed)	106.7		23.5	6	1	Sunny	0.0	0.0	0.0
18 (Thu)	102.9		22.6	5	2	Cloudy / Showers	13.2	0.0	13.2
19 (Fri)	107.1		23.6	6	2	Sunny / P. Cloudy / Showers	0.8	0.0	0.8
20 (Sat)	103.9		22.9	7	1	Sunny / P. Cloudy	0.0	0.0	0.0
21 (Sun)	106.6		23.4	7	2	Sunny / P. Cloudy	0.0	0.0	0.0
22 (Mon)									
23 (Tue)									
24 (Wed)									
25 (Thu)									
26 (Fri)									
27 (Sat)									
28 (Sun)									
29 (Mon)									
30 (Tue)									
TOTAL	2233.2 ML		491.29 MIG				406.0	0	406.0
MAX	115.1		25.33	14	9		101.8	0	101.8
AVG	**106.3**		23.39	8.5	4.1		19.3	0	19.3
MIN	100.2		22.05	5	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.

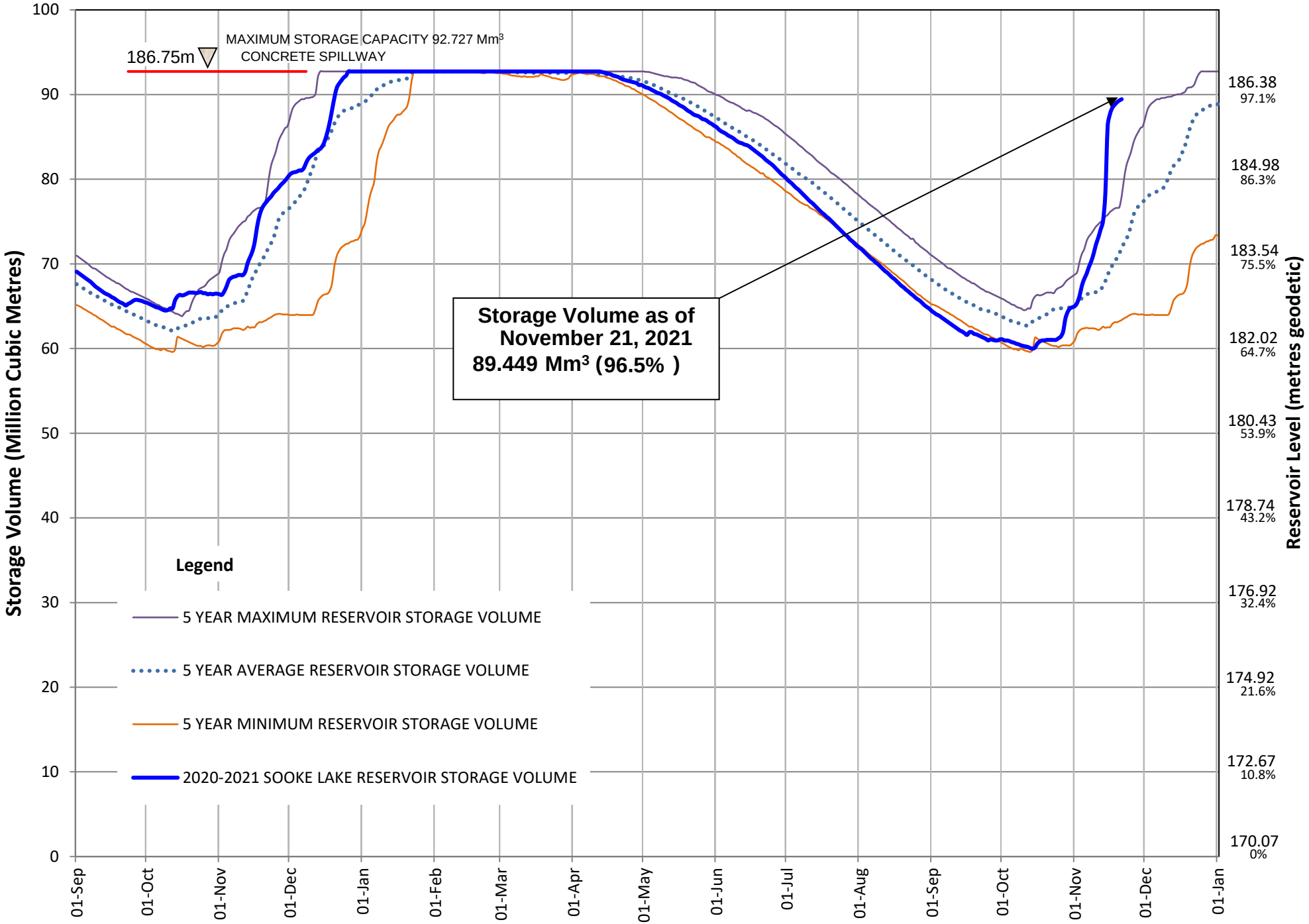
Average Rainfall for November (1914-2020)	260.7 mm
Actual Rainfall: November	406.0 mm
% of Average	156%
Average Rainfall (1914-2020): Sept 01 - Nov 21	411.3 mm
Actual Rainfall (2021): Sept 01 - Nov 21	796.4 mm
% of Average	194%

Number days with precip. 0.2 or more
18

Water spilled at Sooke Reservoir to date (since Sept. 1) = 0.00 Billion Imperial Gallons
= 0.00 Billion Litres

39

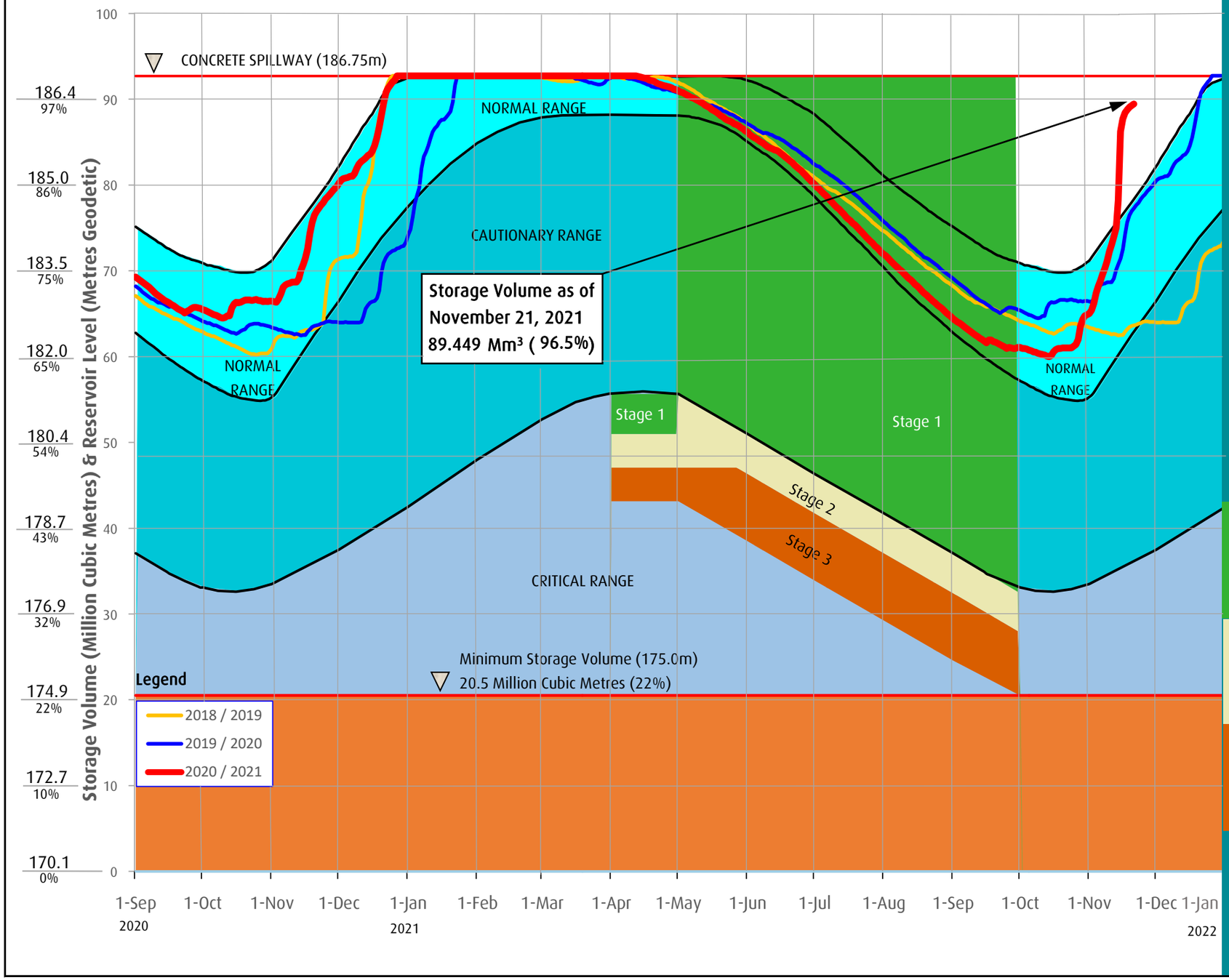
SOOKE LAKE RESERVOIR STORAGE SUMMARY
2020 / 2021



39

40

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

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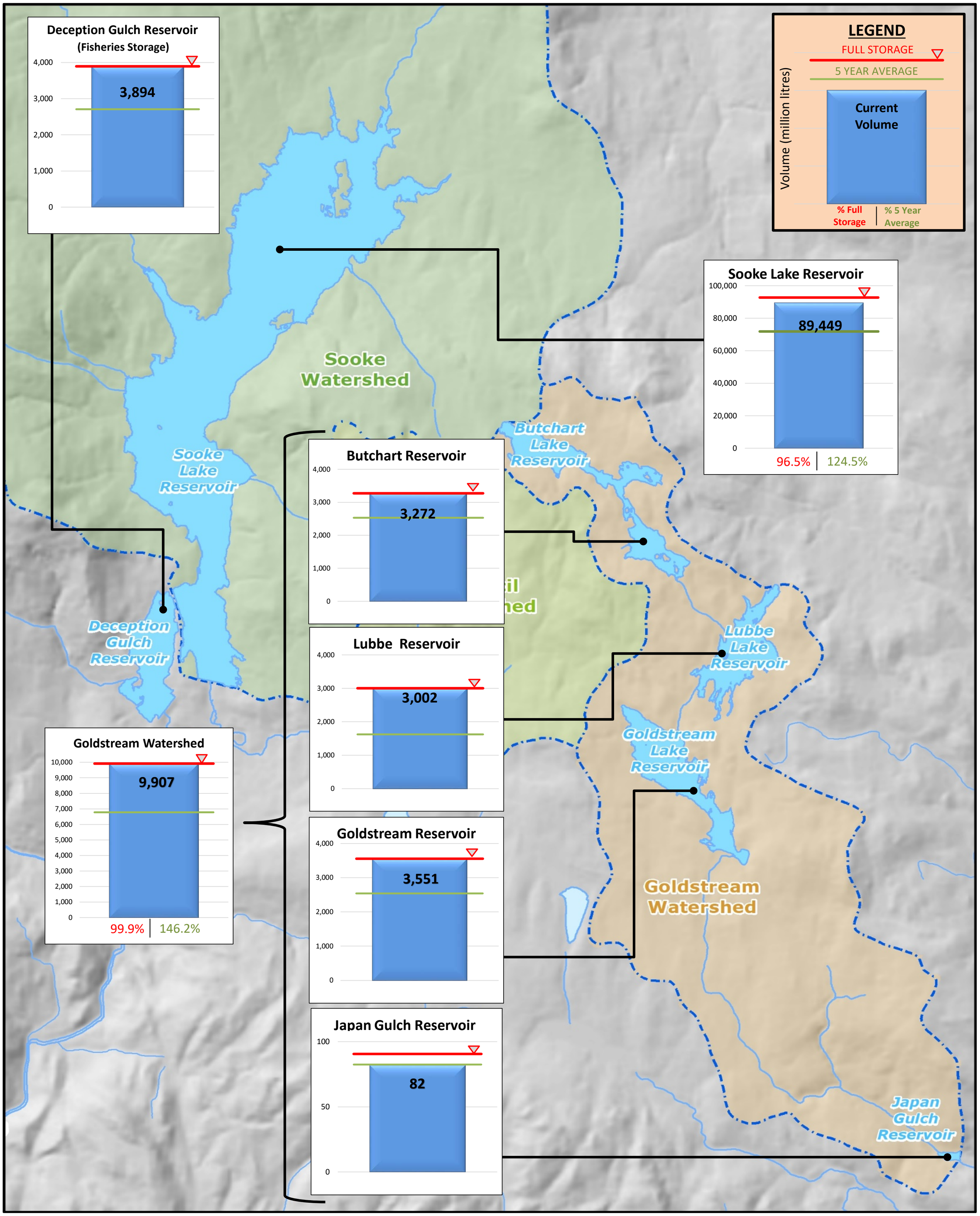
40

41

Capital Regional District Integrated Water Services

Making a difference...together

Useable Reservoir Volumes in Storage for November 21, 2021



41