



Making a difference...together

WATER ADVISORY COMMITTEE

Notice of Meeting on **Wednesday, June 7, 2017 @ 9 am**
Goldstream Conference Room, 2nd Floor, 479 Island Highway, Victoria, BC

R. Mersereau (Chair)
D. Blundon
B. June
C. Nowakowski
T. Wood

A. Gibson (Vice-Chair)
P. Elworthy
G. Logan
G. Orr

N. Banera
M. Demeulenaere
R. Neuman
M. Williams

AGENDA

1. Approval of Agenda
2. Adoption of Minutes of March 1, 2017
3. Chair's Remarks
4. Presentations/Delegations
 - No one has registered to speak.
5. Hotsheets from the Regional Water Supply Commission
6. Draft 2017 Strategic Plan for the Greater Victoria Water Supply System (Report #WAC 2017-01)
7. Post Disaster – Emergency Water Supply and Distribution (Report #SPWC 2017-03)
Forwarded from the Saanich Peninsula Water Commission
8. Reports From Working Groups
9. Water Watch
10. New Business
11. Adjournment

To ensure a quorum is present, please call Margaret at 250.474.9606 if you cannot attend.



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MINUTES OF A MEETING OF THE WATER ADVISORY COMMITTEE
Held Wednesday, March 1, 2017 at 9 am in the Goldstream Conference Room,
479 Island Highway, Victoria, BC

PRESENT: D. Blundon, M. Demeulenaere, A. Gibson, B. Gramigna, B. June, R. Mersereau,
G. Orr, M. Williams, T. Wood,
Staff: T. Robbins, A. Constabel, M. Montague (Recorder), S. Orr (Recorder)

T. Robbins explained the process for the first Water Advisory Committee meeting of 2017 and provided a brief overview of the Committee and its membership. He welcomed the newly appointed members to the meeting and congratulated the members that were reappointed to the Committee.

Introductions were then made around the table.

1. ELECTION OF CHAIR AND VICE-CHAIR

T. Robbins called for nominations for the position of Chair of the Water Advisory Committee for 2017.

M. Williams nominated R. Mersereau

T. Robbins called for nominations a second and third time and hearing none, declared R. Mersereau elected as Chair of the Water Advisory Committee for 2017 by acclamation. R. Mersereau assumed the chair and called for nominations for Vice Chair of the Water Advisory Committee for 2017.

G. Orr nominated B. June; B. June declined the nomination.
G. Orr nominated A. Gibson

The Chair called for nominations a second and third time and hearing none, declared A. Gibson elected as Vice-Chair of the Water Advisory Committee for 2017 by acclamation.

2. APPROVAL OF AGENDA

The following items were added to the agenda:

- 7(a) Water Advisory Committee Priorities
- 7(b) Status of Working Groups
- 7(c) Appointments to Working Groups

MOVED by M. Williams and **SECONDED** by G. Orr,
that the Water Advisory Committee approve the agenda as amended.

CARRIED

3. ADOPTION OF MINUTES OF SEPTEMBER 7, 2017

MOVED by M. Williams and **SECONDED** by A. Gibson,
that the Water Advisory Committee adopt the minutes of the meeting held September 7,
2016.

CARRIED

4. PRESENTATION - POST WILDFIRE MITIGATION PLANNING – TRESTLE MANAGEMENT UNIT CASE STUDY

A discussion took place about disaster preparedness and wildfire prevention activities in the water shed. It was suggested there might be interest from committee members of going on a walk through to view fire prevention activities.

5. 2017 MEETING SCHEDULE AND MEETING LIST

The Chair requested that the meeting list be circulated.

6. REPORTS FROM WORKING GROUPS

a) Water Advisory Committee Priorities

A group discussion took place about the three existing working groups and whether or not the themes were still valuable in terms of current priorities for the committee and staff.

b) Status of Working Groups

It was suggested that two working groups of Water for Food and Water Value and Conservation be merged into one working group and keep the Disaster Planning group as is.

c) Appointments to Working Groups

Appointments were made to the following working groups:

- Water for Food and Water Value and Conservation working group: A. Gibson, B. June, T. Wood, D. Blundon; and R. Mersereau
- Disaster Planning working group: M. Williams and M. Demeulenaere

7. WATER WATCH

T. Robbins reported that the reservoir reached full storage capacity in December 2016 with snow currently at higher elevations. There were no water quality issues to report.

8. NEW BUSINESS

There was no new business.

9. ADJOURNMENT

MOVED by Anne and **SECONDED** by M. Demeulenaere, that the meeting of the Water Advisory Committee be adjourned at 11:35 a.m.

CARRIED



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CAPITAL REGIONAL DISTRICT REGIONAL WATER SUPPLY COMMISSION
Wednesday, May 17, 2017

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.

1. RECOMMENDATIONS FROM OTHER WATER COMMISSIONS

That the Regional Water Supply Commission receive the report for information.

CARRIED

2. GREATER VICTORIA WATER SUPPLY AREA MINING ACCESS REQUESTS

That the Regional Water Supply Commission authorize Andy Barry and Stephen Abercrombie access and special use to the Leech Water Supply Area until April 30, 2018, as described in the access application and with the conditions required in the Access Agreement.

CARRIED

3. LEECH WATER SUPPLY AREA ACCESS REQUEST: WESTCOAST FLYFISHERS ASSOCIATION

That the Regional Water Supply Commission authorize the Westcoast Flyfishers Association access and special use of the Leech Water Supply Area for a maximum of 20 members for one day, when the Fire Danger Rating is less than Extreme (planned for June 18, 2017), to fish in Weeks, Worley and Jarvis Lakes, under the conditions of the access permit which limits the type of vessels to those that can be effectively decontaminated, and pending receipt of the security deposit, evidence of insurance for personal vehicles, and completion of waivers.

CARRIED

4. GREATER VICTORIA DRINKING WATER QUALITY – 2016 ANNUAL REPORT

That the Regional Water Supply Commission recommend to the Capital Regional District Board:

That the Greater Victoria Drinking Water Quality 2016 Annual Report be approved.

CARRIED

5. WATER WATCH

That the Regional Water Supply Commission receive the report for information.

CARRIED



**REPORT TO WATER ADVISORY COMMITTEE
MEETING OF WEDNESDAY, JUNE 7, 2017**

SUBJECT **DRAFT 2017 STRATEGIC PLAN FOR THE GREATER VICTORIA WATER
SUPPLY SYSTEM**

ISSUE

To present the summarized draft 2017 Strategic Plan for the Greater Victoria Water Supply System content and stakeholder engagement plan to the Water Advisory Committee for review and feedback prior to consideration by the Regional Water Supply Commission.

BACKGROUND

Section 5 of British Columbia Regulation 284/97 under the *Capital Region Water Supply and Sooke Hills Protection Act* required that the Capital Regional District (CRD) adopt a strategic plan for a 20 year period and that the plan be reviewed on a regular basis. In October 1999, the CRD Board passed a *Bylaw to Adopt a Strategic Plan for Water Management* and the first Strategic Plan was prepared. The Strategic Plan provided direction for the development and management of the water supply, transmission system, demand management program, and water supply catchment lands. The Plan has been reviewed and updated in 2004 and 2012. The 2012 Strategic Plan can be found on the CRD website at <https://www.crd.bc.ca/docs/default-source/water-pdf/2012strategicplanforhegvwss.pdf?sfvrsn=2>. The 2012 Strategic Plan focused on three strategic priority areas: Climate Change Adaptation, Addressing Changing Trends in Water Use, and Workforce Planning. In addition to the strategies and actions associated with the strategic priorities, the 2012 Strategic Plan presented a number of additional recommended actions to improve the management of the water supply system. A status report on the implementation of the actions was presented to the Regional Water Supply Commission in September 2015. At that time, the majority of the actions set out in the plan were either underway or planned; it is expected that all of the actions will be fully considered and/or implemented where feasible by the end of 2017.

The summarized draft 2017 Strategic Plan for the Greater Victoria Water Supply System content has been prepared. The vision for the plan is to produce a concise, strategic plan that serves the Regional Water Supply Commission, that serves as a guiding document for service delivery, and that is a document suitable for public consumption.

The Plan will include the following sections:

- Introduction and Context
- Governance and Stakeholder Overview
- Mandate, Mission, Vision and Values
- Plan alignment with CRD Board, Corporate and other Plans and Strategies
- Commitments, Strategic Priorities, and Actions
- Advancing the Plan and Measuring Success

The planning horizon used for the development of the Plan is to the year 2050, based on the following considerations:

- Based on a higher population growth rate (1% - 2% per year) and water demand projections for the Region, this is the projected earliest date that the Leech Water Supply Area may be

required to supplement source water to the Sooke Lake Reservoir to meet the Regional Water Supply System demands.

- Water supply system components can have a useful life as short as 15 years for electronic equipment and as long as 80 years or more for reservoir dams and large diameter pipelines.
- 30 years strikes a balance with what can reasonably be planned considering the projected water supply needs of the Region and implications of impacts of such factors as climate change and advances in technology, while looking far enough ahead to allow informed decision making regarding key infrastructure and financial decisions.

The key Plan content centers around the Plan Commitments, Strategic Priorities, and Actions. The three **Commitments** are the key commitments the CRD makes and is accountable to, today and into the future with respect to water supply for the Greater Victoria area served by the Regional Water Supply System. These long term commitments are foundational to the plan and to achieving the service mandate, mission and vision. The commitments are expected to remain virtually unchanged for several decades.

Each commitment has supporting **Strategic Priorities** and **Actions** which will guide shorter term initiatives and service planning and delivery. The strategic priorities are based on the need to mitigate or adapt to changing factors affecting the service, while ensuring achievement of long term commitments remains the first priority. The Actions focus on tactics including initiatives, projects or studies intended to inform or meet near term objectives and support the strategic priorities. It is expected that the Strategic Priorities would be reviewed and updated every 5-10 years and the Actions would be planned, budgeted, and implemented (subject to Commission approval) over the five years following approval of the plan.

Strategic Plan Commitments, Strategic Priorities, and Actions

Commitment 1: PROVIDE HIGH QUALITY, SAFE DRINKING WATER

Strategic Priority: Manage and protect the Greater Victoria Water Supply Area (GVWSA).

Actions:

- Continue to actively protect the GVWSA and water supply infrastructure from unauthorized activities and seek opportunities to acquire ownership and control of the remaining catchment lands and critical adjacent lands to act as a buffer.
- Reduce risk to water supply and ecosystems from contaminants and invasive plants, animals and pathogens by completing a biosecurity risk assessment and implementing biosecurity mitigation measures.
- Implement the recommendations of the GVWSA Climate Change Adaptation Strategy to reduce the impact of the potential types, magnitude and rate of climate change on GVWSA ecosystems, water quality and infrastructure.
- Assess the need for more active forest management to protect and enhance forest health and resilience.
- Reduce risk of landscape level wildfire by designing and implementing forest fuel management treatments.

Strategic Priority: Maintain a multi-barrier approach to drinking water supply, which includes multi-step water disinfection, extensive water quality monitoring, operation of water quality and aquatic ecology laboratories, ownership of watershed catchment lands, watershed protection programs, control of activities in the watershed, trained and certified water system operators, good infrastructure maintenance, cross connection and backflow prevention program.

Actions:

- Regularly evaluate the effectiveness of the water treatment processes.
- Consider the Regional Water Supply Service drinking water safety plan in operational and capital project decision making.
- Continue to develop and refine the Utility Operator Training Program and ensure adherence to Environmental Operator Certification Program requirements and identify progressive and innovative training and development opportunities with respect to utility operations and management for departmental staff.

Strategic Priority: Maintain a risk register for the Regional Water Supply System that identifies potential risks to water quality, water supply and water transmission and provides mitigation measures.

Actions:

- Regularly consider Regional Water System hazards, risks and vulnerabilities and update the risk register.
- Continue the emphasis on wildfire prevention, early detection and suppression capability, preparedness, forest fuel management and post-fire rehabilitation planning to reduce and mitigate the risk of a large-scale wildfire affecting the water supply area and source water quality.
- Continue to monitor and evaluate the implications of the reliance on unfiltered source water and the absence of a filtration step in the water treatment process.
- Conduct specific seismic risk evaluations of critical assets.

Commitment 2: ENSURE AN ADEQUATE, LONG-TERM SUPPLY OF DRINKING WATER

Strategic Priority: Plan and prepare for future water supply needs to meet demand considering impacts of climate change, population growth, and per-capita demand rates.

Actions:

- Determine climate change impacts and risks on water supply and incorporate mitigation and adaptation recommendations in operating and capital plans.
- Update service population and service population growth rate forecasts with current census data, considering municipal Official Community Plan land use and population directions, to estimate growth related water demand.
- Establish long-term per capita demand rate projections and Demand Management Program objectives to achieve rates and determine annual water demand by sector.
- Undertake regular monitoring and assessment of the physical, chemical, and biological parameters of the Leech Water Supply Area (WSA) source water and determine a plan to address potential water quality, ecological and ecosystem implications at Sooke Lake Reservoir resulting from diversion of Leech WSA source water (Leech River water) to Sooke Lake Reservoir and (ie. combining source waters).
- Develop a plan to undertake more 'intensive' monitoring of Leech River water quality to inform treatability recommendations and long term treatment strategy.

- Determine conceptual 'hard' capital infrastructure plan to design and construct the necessary infrastructure to divert Leech WSA flows to Sooke Lake Reservoir
- Conduct a feasibility study to explore the design and construction of supply and transmission infrastructure at Sooke Lake Reservoir to provide increased resiliency, including consideration of a deep northern intake and a secondary transmission pipe between the reservoir and the treatment facilities.
- Undertake biannual Supply System hydraulic modelling to confirm system capacity.

Strategic Priority: Develop a higher level of public understanding of the drinking water supply system and value of water through education and engagement.

Actions:

- Continue to improve Regional Water Supply service and system information available to the public through a variety of media streams, to raise awareness around specific topics including water supply and conservation, and supply infrastructure investment.
- Continue to promote the value of the drinking water resource through Water Supply Area public and school tours.
- Continue to have two-way dialogue with the Water Advisory Committee regarding water supply matters.
- Explore opportunities for mutually beneficial collaborative partnerships to carry out research and monitoring initiatives in the water supply area and across the system.

Commitment 3: ENSURE THE RELIABLE AND EFFICIENT TRANSMISSION OF DRINKING WATER

Strategic Priority: Maintain a capital planning process and appropriate investment in Water Supply infrastructure to ensure reliable system performance

Actions:

- Complete a short term (annual and 5-year), medium term (5-10 year), long term (10-20 year) and long range (20-50 year) asset management plan – informed by asset condition and remaining service life assessment, water operation and maintenance history, water audit, changing regulatory requirements, HRVA recommendations, and system capacity requirements
- Explore Regional Water Development Cost Charges to fund future growth related supply system infrastructure improvements
- In collaboration with municipal and First Nations water purveyors, establish water supply service agreements.

Strategic Priority: Continually consider cost effectiveness of service respecting operations and maintenance and capital investment decisions.

Actions:

- Continue to review reactive, preventive and predictive operations and maintenance history and confirm operation and maintenance service levels for the Regional Water Supply Service that consider a best practices and reliability centered maintenance approach.
- Consider life cycle costs with new infrastructure design and asset replacement.
- In asset replacement decisions, balance maximizing infrastructure service life with infrastructure reliability.
- Optimize capital investment taking into consideration priority, annual and long term budget and water rate impacts and resource availability to deliver the projects.

Strategic Priority: Consider emergency drinking water supply systems for Greater Victoria.

Actions:

- Establish emergency and post-disaster water supply protocols and obtain necessary supplies, materials and equipment to implement protocols. Establish water purveyor support roles and responsibilities in emergency water supply and distribution.
- Outline how emergency/post disaster drinking water supply can be supported by Regional emergency management plans and available senior government supports under certain conditions.

Strategic Priority: Continue to focus on retaining and recruiting experienced and professional employees responsible for the Regional Water Supply System engineering, system operation and maintenance, and management of the water supply area.

Actions:

- Develop a succession plan to ensure key positions are backfilled by experienced and knowledgeable employees, and that system knowledge is preserved.
- In alignment with the CRD Organizational Development Plan, provide learning and development opportunities for employees to ensure the work environment and Regional Water Supply System operation is in accordance with occupational health and safety legislation, senior government regulations, and best practices.

Advancing the Plan and Measuring Success

The 2017 Strategic Plan would be used at the highest level to guide the CRD's commitments to the customers of the Regional Water Supply Service, as well as guide the day-to-day activities and decision making associated with the service, to ensure the safe, reliable and efficient delivery of water supply for the current and future customers in Greater Victoria. The actions will direct the initiatives, projects and studies that will form the annual and five-year work programs – the activity associated with the actions will be reported to the Regional Water Supply Commission each Fall, along with how the actions are contributing to achieving the strategic priorities and supporting the commitments.

2017 Strategic Plan Engagement and Implementation

A key part of the development of the Strategic Plan is to engage with the stakeholders including the Regional Water Supply Commission, the Water Advisory Committee, the municipal and First Nations water purveyors, and the public, to share the plan and gather feedback prior to finalizing. A summary of the process and timeline for engagement and implementation is detailed below. It is proposed to hold six public open houses in early July with a series of information boards containing plan content.

The proposed process and timeline for implementation is as follows:

- Water Advisory Committee review and feedback of summarized draft Strategic Plan content and public engagement plan – June 2017
- Regional Water Supply Commission review and feedback of Strategic Plan summary, public engagement plan, and Water Advisory Committee comments – June 2017
- Strategic Plan public and municipal engagement sessions – July 2017
- Final Strategic Plan presentation to Regional Water Supply Commission – November 2017
- Final Strategic Plan presentation to CRD Board and public distribution – December 2017

CONCLUSION

The summarized draft 2017 Strategic Plan for the Greater Victoria Water Supply System content has been prepared. The vision for the plan is to produce a concise, strategic plan that serves the Regional Water Supply Commission, that serves as a guiding document for service delivery, and that is a document suitable for public consumption. The planning horizon used for the development of the plan is to the year 2050. The key content centers around the Plan Commitments, Strategic Priorities, and Actions. A key part of the development of the Strategic Plan is to engage with the stakeholders including the Regional Water Supply Commission, the Water Advisory Committee, the municipal and First Nations water purveyors and the public, to share the plan and gather feedback prior to finalizing. The next steps in advancing the Plan include presenting the draft information to the Regional Water Supply Commission, incorporating feedback from the Water Advisory Committee, then proceeding with stakeholder engagement.

RECOMMENDATION

That the Water Advisory Committee recommends to the Regional Water Supply Commission, the Committee's endorsement of the draft 2017 Strategic Plan for the Greater Victoria Water Supply System information presented in this report.

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

REPORT TO SAANICH PENINSULA WATER COMMISSION MEETING OF THURSDAY, MAY 18, 2017

SUBJECT **POST DISASTER - EMERGENCY WATER SUPPLY AND DISTRIBUTION**

ISSUE

This report provides an update on the Post Disaster - Emergency Water Supply and Distribution Planning initiative directed by the Regional Water Supply Commission in 2016.

BACKGROUND

In 2016, the Regional Water Supply Commission (RWSC) approved the Post Disaster – Emergency Water Supply and Distribution Planning initiative which included two phases, an initial assessment and plan development phase, followed by an implementation phase that would include emergency water supply and distribution equipment purchase, training and deployment plan. Staff have been requested to provide a status update on this initiative.

The first phase began with a focus on conducting a screening level hazard, risk and vulnerability assessment (HRVA) of the Regional Water Supply system, which was used to identify situations for which appropriate emergency response and recovery plans should be developed and to inform the Post Disaster – Emergency Water Supply and Distribution Plans for the Greater Victoria area. The HRVA is being finalized and will be presented to the RWSC at an upcoming meeting. Phase two will involve developing and finalizing the Post Disaster – Emergency Water Supply and Distribution Plan and preparing for deployment, including acquiring equipment and supplies necessary to fulfill the plan.

Prior to developing the regional plan for emergency water supply, it was imperative that staff gained an understanding of current emergency water supply standards and plans that are in place at the provincial and federal government levels to ensure that the Capital Regional District (CRD) plans would be aligned and compliant. CRD staff have been working closely with the Emergency Management BC Logistics Planning team to develop the provincial approach to emergency water supply, and have been researching existing community and response agency systems and plans that are in place across Canada and internationally. As per the provincial earthquake Immediate Response Plan, the minimum emergency water supply target is 15 litres per person per day of which a minimum of 4 litres must be potable. Regional alignment with provincial planning is critical to the development of the CRD emergency water supply plan.

Additionally, preliminary work has been done with each municipality and electoral area through the Local Government Emergency Program Advisory Commission to address the need for each local government to be able to receive and distribute emergency aid such as water, food, and shelter materials in a disaster event. This is a key aspect of a regional emergency water plan going forward. A backgrounder and recent survey for local governments is attached for information (See Attachment 1).

A Post Disaster – Emergency Water Supply and Distribution Plan is now being developed. The plan is being prepared based on the potential impacts of a destructive earthquake on regional and municipal water infrastructure. Significant upgrades and replacement of critical Regional Water

Supply system infrastructure, including the source, treatment and transmission assets, have taken place over the last twenty years with particular attention to design and construction standards intended to improve seismic resilience.

The conceptual Emergency Water Supply and Distribution plan relies on the availability of water in the large diameter CRD transmission mains in locations across Greater Victoria. Water distribution centres would be established at locations based on the following criteria:

- Population centres
- Proximity to CRD water transmission mains
- Suitable sites for distribution centre equipment, supplies and orderly movement of people and traffic
- On or near major transportation/post disaster routes

The water distribution centre equipment and supplies would include (in concept):

- Piped connection to a nearby 'hardened' hydrant - it is proposed to construct 'hardened' hydrants at select locations on CRD water transmission mains that would serve as emergency water supply points in the event that the transmission mains needed to be isolated from damaged municipal distribution systems in a post disaster situation.
- Portable 5000 gallon 'pillow tank' reservoirs, fed from hydrant water supply point.
- Water tap manifold system fed from pillow tank reservoir for customers to fill water containers.
- Additional portable 1300 gallon pillow tank reservoirs suitable for transport on flatbed trucks to shuttle water between locations.
- Portable pumping equipment.
- Water purification supplies (tablets) and water quality testing equipment.
- Tents and supplies for distribution centre attendants.
- Supplies for site signage, instructions and traffic control.
- In addition to the above, a staffing/human resourcing plan would be developed to establish and staff the distribution centres for the necessary duration.

Next steps:

- Explore on-site water treatment solutions, utilizing local lake sources – Spring 2017
- Provide a status update on the Post Disaster – Emergency Water Supply and Distribution Planning initiative to the Regional Water Supply Commission – Summer 2017
- Present the conceptual Post Disaster – Emergency Water Supply and Distribution Plan to the Local Government Emergency Program Advisory Commission (LG EPAC), all other municipal engineering, operations, and emergency services staff and coordinators across Greater Victoria, and the Regional Emergency Management Partnership (REMP) policy group and steering committee established under the REMP Memorandum of Understanding (Attachment 2) established in 2016, for initial input on: plan concept, regional/municipal roles and responsibilities, integration of plan with municipal, regional and provincial plans, implementation, resourcing, deployment – Fall 2017
- Finalize Post Disaster – Emergency Water Supply and Distribution Plan and acquire equipment and supplies with 2017 Regional Water Supply Service funding – Winter 2017
- Undertake further seismic assessments of critical infrastructure to further inform additional system hardening required to improve system seismic resilience - 2018

CONCLUSION

In 2016, the Regional Water Supply Commission (RWSC) approved the Post Disaster – Emergency Water Supply and Distribution Planning initiative, which included two phases, an initial assessment and plan development phase, followed by an implementation phase that would include emergency water supply and distribution equipment purchase, training and deployment plan. Work on this initiative is progressing. A Post Disaster – Emergency Water Supply and Distribution Plan is now being developed and next steps have been identified which include seeking input on the plan from regional stakeholders.

RECOMMENDATION

That the Saanich Peninsula Water Commission receive the staff report for information.

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| Submitted by: | Ted Robbins, BSc, CTech, General Manager, Integrated Water Services |
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Attachments:

1. EMBC Drinking Water Resource Identification Project Survey for Local Authorities
2. Memorandum of Understanding – Regional Management Partnership

EMERGENCY MANAGEMENT B.C. (EMBC) DRINKING WATER RESOURCE IDENTIFICATION PROJECT SURVEY FOR LOCAL AUTHORITIES

INTRODUCTION & BACKGROUND

The Province of British Columbia is working to continuously improve its preparedness, response, and recovery planning related to a significant emergency event such as a catastrophic earthquake in British Columbia. The overarching provincial framework that governs the initial response efforts for a seismic event is the “B.C. Earthquake Immediate Response Plan” (IRP).¹ Emergency Management British Columbia (EMBC) is the lead provincial coordinating agency for emergency management on behalf of the Province.² As a part of ongoing planning efforts, EMBC Logistics section is responsible for the overall provincial level planning and coordination for delivery of critical resources required during the response phases of large-scale and catastrophic events, working with many stakeholders as part of these processes. Among the four critical supply chains required (water, fuel, medical and food) in the immediate response phase, the water supply chain was agreed upon by stakeholders as the first of four critical supply chains to develop plans for provincial level response and coordination.³

The Water Supply Chain Governance Team (WSCGT), established in April 2016 consists of provincial and local authority members and has representation from Non-Government Organizations (NGOs) and industry experts. One of the WSCGT’s first projects through the *Drinking Water Resource Identification Project* (DWRIP) will be to determine the province’s current capacity to supply drinking water to affected residents in the aftermath of a catastrophic event. Recognizing that, under the *Emergency Program Act*, emergency preparedness lies with local authorities, if and when a catastrophic event occurs, local authority resources may become quickly exhausted resulting in requests for provincial coordination for critical resources. To support responsiveness and water supply chain reliability – two key attributes of the water supply chain strategy - the WSCGT tasks include: designing a drinking water supply chain management process (end-to-end planning); identifying drinking water requirements and available resources; and developing decision-making tools that will balance available supply versus competing demand for drinking water during a large-scale event response. The WSCGT adopted the IRP’s performance metric requirement for drinking water⁴ requirements based on the Sphere Project⁵

¹ See: <http://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/provincial-emergency-planning/irp.pdf>

² See: <http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery>

³ For a list of critical resources see Annex I of the “BC Earthquake Immediate Response Plan,” July 2015. <http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-management-bc/provincial-emergency-planning/provincial-emergency-planning-irp>

⁴ Drinking water includes water for personal hygiene. See Page 103 Item 16 in Table of Annex I, “Critical Resource List,” at the following link:

<http://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/provincial-emergency-planning/irp.pdf>

⁵ See: <http://www.sphereproject.org/about/>

standards (a minimum of 15 litres of potable water⁶ per person per day as the minimum standard) in order to meet demand under a seismic event response.

The DWIRP is organized into three phases in order to facilitate the overall project. This first phase will determine Capital Regional District and local authority preparedness. The second phase will be to solicit responses through a survey to Metro Vancouver. Follow on projects will cover broad regional areas across the Province in order to gain planning requirements for planning, sourcing and delivering drinking water to first responders and affected populations under this scenario.

By completing the attached survey, your response will help to determine the overall readiness of the province, regional authorities, and local authorities related to drinking water resources and requirements as well as help address gaps in current resources in order to support residents and others as part of earthquake preparedness for the Province. Your input is greatly appreciated. We will continue to work with our local authority representatives on the WSCGT to articulate and provide progress on the work of the DWIRP.

You are requested to complete this survey by 17 April and return to Tim Walshaw at Tim.Walshaw@gov.bc.ca.

Thank you for your contribution towards our collective preparedness.

Mary-Ellen Clark
Executive Director, Logistics
Emergency Management British Columbia

⁶ See: <http://www.spherehandbook.org/en/water-supply-standard-1-access-and-water-quantity/>

SURVEY

Please complete the following as it applies to your community. Your feedback and observations will serve to improve the planning process and factors to be considered.

A. JURISDICTION

1. *Organization:*
2. *Emergency Program Coordinator (EPC) or Equivalent:*
3. *Population(#):*
 - Resident:*
 - Transient:* *Describe types and timing*
 - Vulnerable:*
 - Pets:*
 - Livestock:*
 - Other:*
4. *Volume Of Drinking Water Needed Per Person Per Day (litres):*
 - a. *Normal Consumption:*
 - b. *Planned Emergency Consumption⁷:*
5. *Planning Horizon (in years)⁸:*
 - a. *Normal Consumption:*
 - b. *Planned Emergency Consumption:*
6. *Minimum Requirements (litres) of Jurisdiction for Readiness:*

B. CURRENT SOURCES:

1. *Current Drinking Water Sources (local suppliers, emergency suppliers):*
2. *Percent of Population on Private Wells:*
3. *Current Emergency Drinking Water Generation Capacity:*
4. *Alternate Drinking Water Sources(bulk, commercial, wells):*
5. *Planned New Water Sources:*

C. CURRENT ASSETS

1. *Purification Units and Capacity (litres/day):*
2. *Desalination Units and Capacity (litres/day):*

⁷ SPHERE standard or an alternate amount based on local requirements.

⁸ Planning horizon refers to the how far in the future does the local authority plan its estimates for future consumption, both normal and emergency, and methods of meeting that consumption demand.

3. *Purification Products on Hand (e.g. tablets):*
4. *Water Tankers and Capacity (litres/day):*
5. *Point Distribution Units and Capacity (litres/day):*
6. *Other Distribution Facilities:*

D. CURRENT AGREEMENTS

1. *Primary Drinking Water Arrangements/Agreements:*
2. *Formal Arrangements with Water Suppliers in the Event of Loss of Supply:*
3. *Drinking Water Mutual Aid Agreements in Place:*
4. *Commercial Contracts:*
5. *Other Arrangements/Agreements:*

E. DISTRIBUTION & LOGISTICS in the event of a catastrophic event

1. *Distribution Process Plan:*
2. *Inventory Reserves (describe types):*
3. *Warehousing & Storage Facilities:*
4. *Transportation Arrangements:*
5. *Distribution Resources:*
 - a. *Employed Personnel:*
 - b. *Volunteers:*
 - c. *Other Agencies:*

F. RISKS & MITIGATION

1. *Vulnerability of Drinking Water Infrastructure to Seismic Threat:*
2. *Mitigation Strategies in Place:*
3. *Anticipated Time to Repair Municipal Water Main Ruptures⁹:*
4. *Estimated Time Required to Implement Emergency Drinking Water Supply Distribution to Disrupted Residents :*
5. *Estimated Emergency Drinking Water Production Capacity (litres) of all forms¹⁰ in:*
 - a. *24 hours*
 - b. *48 hours*
 - c. *72 hours*
 - d. *96 hours*

⁹ In the event of a seismic event.

¹⁰ e.g. bulk, bottled

- e. 1 week
- 6. *Potential Gaps in Emergency Drinking Water Supply versus Demand¹¹:*
 - a. *Bulk water*
 - b. *Bottled*
 - c. *Describe The Local Authority Water Quality Monitoring Expertise*
 - d. *Tanker Trucks*
 - e. *Sustainability (How long and how much)*
- 7. *Impact if Water is Not Available and Any Resulting Actions Anticipated:*

G. ADDITIONAL DRINKING WATER ISSUES, OBSERVATIONS AND RECOMMENDATIONS

- 1. *How well prepared is your jurisdiction to provide drinking water to first responders and citizens after a catastrophic event:*
- 2. *Additional comments – Please Share Anything Felt to be Relevant:*

¹¹ Please provide general observations and the water volume in litres if known.

MEMORANDUM OF UNDERSTANDING

Regional Emergency Management Partnership

BETWEEN:

The Capital Regional District (herein referred to as CRD) on behalf of the Local Authorities, Electoral Areas and First Nation members of the capital region.

AND:

Her Majesty the Queen in Right of the Province of BC as represented by the Minister of Transportation and Infrastructure (herein referred to as the Province).

TOGETHER referred to as the "Partners".

WHEREAS

1. emergencies can occur that cross municipal and electoral area boundaries or have impacts or demand for response beyond one local authority's capability to respond;
2. events can occur that are cross-jurisdictional in nature or require a coordinated multi-jurisdictional, multi-agency response; and,
3. it is far more effective to build relationships, plan the responses, coordinate emergency management activities, and determine roles and responsibilities before regional emergency events take place;

AND WHEREAS, the Partners seek to achieve a vision of the Capital Region as a disaster resilient region where all levels of government and stakeholders work collaboratively towards enhanced emergency management.

THEREFORE the Partners hereto agree to form a Regional Emergency Management Partnership (the Partnership) to address regional emergency management issues as follows:

Article I INTERPRETATION

In this Memorandum of Understanding each of the following terms shall, unless the context otherwise requires, have the meaning set out beside it:

- a) CRD Board Chair: means the person elected to that position by the CRD Board of Directors.

- b) IEPC: means Inter-Agency Emergency Preparedness Council which will provide provincial executive representation to the Partnership Steering Committee as outlined in Appendix II to this MOU.
- c) LGEPAC: means Local Government Emergency Program Advisory Commission which will provide local authority representation to the Partnership Steering Committee as outlined in Appendix II to this MOU.
- d) MOU: means this Memorandum of Understanding.
- e) NGOs: means Non-Government Organizations.
- f) Partnership Management: means the person or persons responsible for the operational management and planning for the Partnership in accordance with direction from the Steering Committee and as outlined in Appendix II.
- g) Partnership Support Staff: means the Regional Emergency Systems Coordinator and the Regional Emergency Planning Coordinator that will provide regional planning support for the Partnership.
- h) Policy Group: means the Elected Officials representing the Partners and responsible for setting policy direction and liaising with other elected officials as outlined in Appendix II to this MOU.
- i) Regional Emergency: is an emergency or disaster under the *Emergency Program Act* (RSBC 1996 Chapter 111, the "Act"), that has or has the potential to have an extraordinary level of risk to lives, property, environment, social and/or economic wellbeing across jurisdictional boundaries in the region, which could require one or more of the following:
 - i) Non routine levels of coordination between the Partners and local authorities involved;
 - ii) Sharing of situational awareness information between the Partners and local authorities involved;
 - iii) Joint decision making between the Partners and local authorities involved;
 - iv) Prioritizing resources within and between the Partners and local authorities involved;
 - v) Allocating resources within and between the Partners and local authorities involved; and/or,
 - vi) Response by multiple stakeholders including the Partners and one or more local authorities.
- j) REMP: means Regional Emergency Management Partnership established by this MOU, and name given to the Partnership.

- k) Steering Committee: means the committee responsible for the Partnership's strategic policy development, program direction, endorsement of working group output, liaising with other senior appointed officials and reporting out to member agencies as outlined in Appendix II to this MOU.

Article II APPLICATION OF GOVERNING AGREEMENTS AND LEGISLATION

Nothing in this MOU shall be interpreted as limiting or altering in any way the jurisdiction, authority and fulfillment of responsibilities of:

- a) The Minister and Ministry of Transportation and Infrastructure in respect to emergency management under the *Emergency Program Act* and Regulations or any other Acts or Regulations;
- b) CRD in respect to emergency management under the *Emergency Program Act*, *Local Government Act* and Regulations or any other Acts or Regulations; or,
- c) Local Authorities within the CRD region in respect to emergency management under the *Emergency Program Act*, Community Charter, *Local Government Act* and Regulations or any other Acts or Regulations.

Nothing in this MOU shall be interpreted as limiting in any way the authorities and obligations of any partner (to this Memorandum) who is a party to a master agreement or collective agreement entered into with a bargaining unit.

This MOU is not legally binding or enforceable.

Article III: PURPOSE AND DELIVERABLES

3.1 PURPOSE

The Partners wish to enter into this MOU to establish the Regional Emergency Management Partnership (REMP), a local/regional/provincial partnership, that will enhance regional emergency management and disaster resilience across the CRD and to ensure collaboration between government, local authorities and stakeholders during a regional emergency.

3.2 OBJECTIVES

This MOU seeks to:

- a) Confirm the emergency management roles and responsibilities of local authorities within the CRD, Provincial and Federal Governments and key Stakeholder

Agencies, so as to optimize opportunities for integration and coordination before, during and after a Regional Emergency.

- b) Engage senior decision makers such as Chief Administrative Officers (CAOs) within the CRD in emergency management, planning/preparedness; response; recovery and mitigation to ensure understanding and responsiveness in a Regional Emergency.
- c) Promote increased coordination, cooperation, collaboration, capacity and integration between the Partners during all phases of emergency management planning, preparedness; response; recovery and mitigation.
- d) Increase ability for Partners to provide oversight and accountability on regional issues, and for the Partners to develop common (emergency) plans, regional strategies, and operational redundancies, to enhance capabilities and capacity across the region that will support Regional Emergencies more effectively.
- e) Increase effectiveness in responding to regional emergencies that cross jurisdictional boundaries or have impacts or demands for response and recovery that are beyond one local authority's capacity, or require a coordinated multi-jurisdictional plan of action.
- f) Establish a regional concept of operations that can be applied to support enhanced regional situational awareness, regional priority setting, resource sharing, joint public messaging and decision making on regional issues, ensuring that local autonomy is respected and maintained.
- g) Through collaboration, enhance the CRD's level of emergency preparedness, through coordinated public education campaigns and common public messaging for each of the key hazards likely to affect the region.
- h) Strengthen regional information sharing and communications, and joint planning, training and exercising.
- i) Foster CRD participation and engagement with EMBC in policy development and other collaborative emergency management activities.

Article IV: SUBJECT MATTER

4.1 The Partners intend to:

- a) Contribute equal resources to facilitate achieving the objectives outlined in this MOU, as set out in Appendix I.

- b) Consider for approval equally shared additional funding for specific regional emergency management projects.
- c) Apply for grants together or separately, from external entities in order to provide funding for additional regional emergency management projects and capacity.
- d) The Partners commit to (as outlined and defined in Appendix II):
 - i) Participate in a Steering Committee (see Appendix II);
 - ii) Provide in-kind contribution for staff participation in Tasked Working Groups (subgroups of the Steering Committee, as outlined in Appendix II to this MOU); and,
 - iii) Encourage local authorities and provincial ministries to participate in Tasked Working Groups.
- e) Consider and provide additional in-kind contributions under this MOU, including, but not limited to:

Each partner, (Province of BC and Capital Regional District), will provide:

- i) One Partnership Support Staff each, with respective office space located in EMBC Headquarters at 2261 Keating Crossroad, Saanichton and in the CRD offices at 625 Fisgard Street, Victoria. Partnership Support Staff have the flexibility to move between, and be hosted at, either of the offices as necessary to maintain effective collaboration;
- ii) The necessary logistics support such as telecommunications, information technology, basic office supplies, and contract management; and,
- iii) Consideration as to whether additional Partnership Support Staff is required, and if so, in consultation with the Steering Committee, consider options such as seconding from appropriate organizations.

4.2 DECISION MAKING BY PARTNERS

- a) The Partners will determine an appropriate decision making structure that will provide for giving policy direction, project management structure and effective participation by local authorities within the CRD.
- b) The CRD Board Chair and the Minister responsible for emergency management shall constitute the Policy Group and will jointly approve the work priorities of the Partners following consultation with the Steering Committee.

- c) Equal executive representatives from provincial and local authorities shall constitute the Steering Committee and will decide on priorities, resources and policy recommendations.
- d) Partnership objectives of the MOU will be managed by EMBC, in accordance with established and future regional emergency management partnerships. The Regional Emergency Planning Coordinator position will be supervised by EMBC and the Regional Emergency Systems Coordinator position will be supervised by the CRD.

Article V: COMMUNICATION

External communication pertaining to the MOU will be consistent with approved protocols established by the Partners.

Article VI: DISPUTE RESOLUTION

Any new issue, matter of general concern, or dispute arising from this MOU shall first be directed to the Steering Committee for resolution. If it is not resolved, it shall be referred to the Policy Group for final resolution.

Article VII: TERM OF AGREEMENT

- a) This MOU will be effective on the date of signing by both Partners.
- b) This MOU may be amended by mutual written agreement duly executed by the Partners to this MOU.
- c) A Partner wishing to withdraw from this MOU must provide 24 months' notice of the Partner's intention to withdraw.
- d) This MOU will remain in full force and effect until terminated or amended in accordance with the MOU.

Article IIX: AMENDMENTS TO APPENDICES

Appendices may be amended from time to time in writing on approval of the Policy Group, except for their responsibilities and membership which shall require the approval of the Partners.

Article IX: SIGNATORIES

This MOU reflects the good faith and spirit of cooperation of the Partners.

Minister of Transportation and Infrastructure

Date: March 3, 2016



Honourable Todd G. Stone

Chief Administrative Officer (CAO), Capital Regional District

Date: MARCH 1, 2016



Robert Lapham

ATTACHMENTS:

- Appendix 1** Partners' Financial Contribution
- Appendix 2** Additional roles and responsibilities of the Partners and Participants

Appendix I

PARTNERS' FINANCIAL CONTRIBUTION

The partnership financial contributions will be equally shared between the CRD (on behalf of Local Authorities) and EMBC (on behalf of the Province of BC) with each party providing:

- 1) In-kind partnership management provided by EMBC;
- 2) In-kind supervision of REMP staff by EMBC and CRD;
- 3) Funding for Partnership staff (1 FTE provided each);
- 4) In-kind office space for designated Partnership Support Staff with necessary operating support; and,
- 5) In-kind administrative support, as needed.

Appendix II

ADDITIONAL ROLES AND RESPONSIBILITIES OF THE PARTNERS AND PARTICIPANTS

THE POLICY GROUP:

- a) Responsibilities:
 - i. Set policy and direction;
 - ii. Recommend regulatory or legislative changes;
 - iii. Ratify the business plan and budget; and,
 - iv. Liaise with other elected officials as appropriate.
- b) Consists of the CRD Board Chair representing the CRD (as determined by the CRD Board), and the Minister representing the Province.
- c) Is Co-Chaired.
- d) Shall meet a minimum of twice annually.
- e) Shall otherwise determine its own operating procedures.

THE STEERING COMMITTEE:

- a) Responsibilities:
 - i. Collective decision making on priorities, resources and policy recommendations;
 - ii. Develop and administer the business plan and budget; and,
 - iii. Liaise with other senior appointed officials as required.
- b) Consists of executive representatives from:
 - i. Emergency Management BC, Ministry of Transportation and Infrastructure (1 representative chosen by EMBC);
 - ii. Inter-Agency Emergency Preparedness Council (3 representatives chosen by that body);
 - iii. CRD CAO;
 - iv. Local Authority Chief Administrative Officers (2 representatives chosen by the local authorities);
 - v. LGEPAC (1 representative); and,
 - vi. Ex-officio Members (non-voting Regional Stakeholders) as approved by Steering Committee.
- c) Shall annually elect co-chairs, one from the provincial appointees, and one from the local/regional appointees.

- d) Reports through the Policy Group to the CRD Board and the Minister for approval of the annual business plan (including milestones) and the budget.
- e) Shall meet a minimum of four times annually.
- f) Shall otherwise determine its own operating procedures.

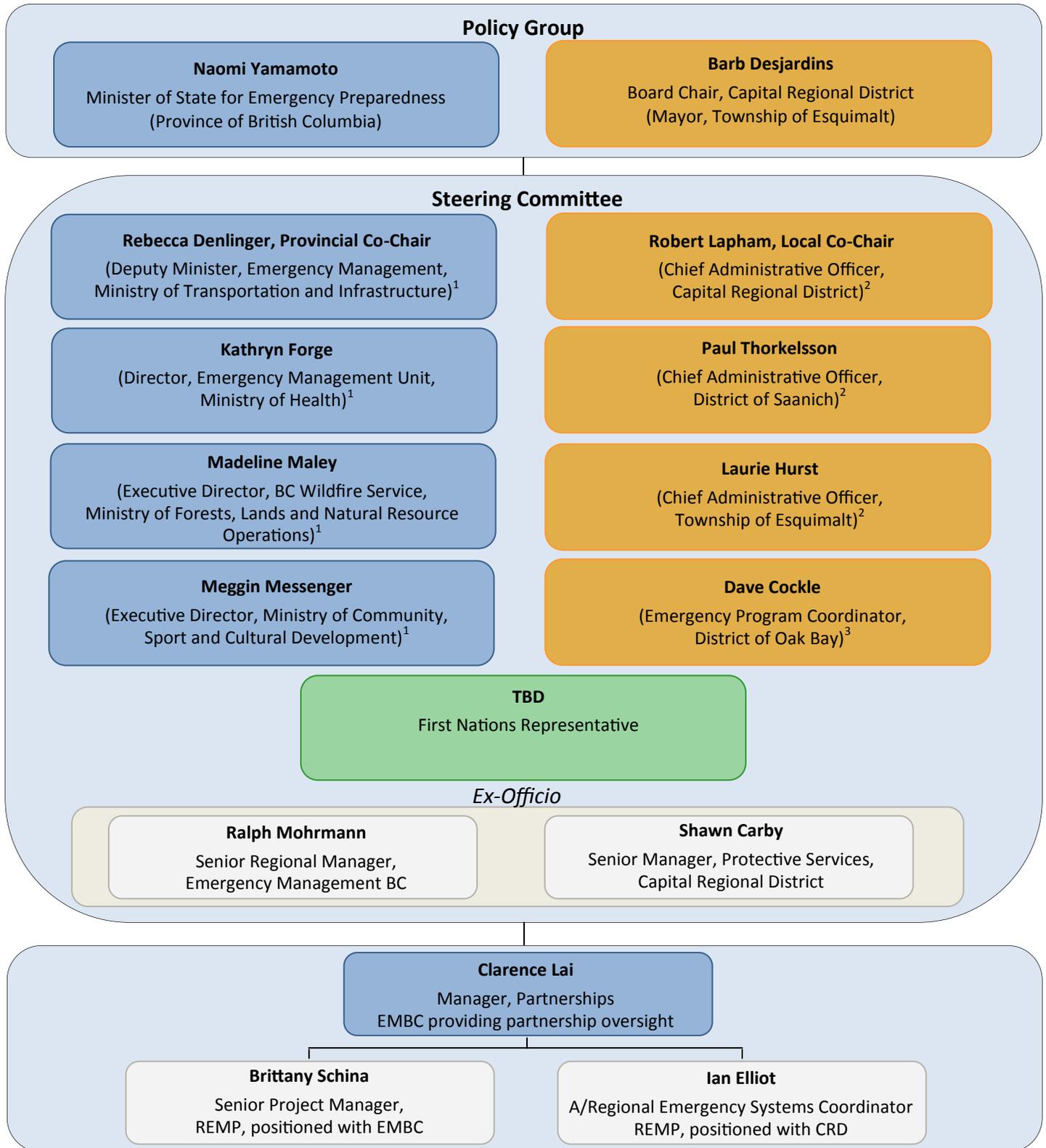
PARTNERSHIP MANAGEMENT, PARTNERSHIP SUPPORT STAFF AND TASKED WORKING GROUPS:

- a) The partnership management and partnership support staff will provide:
 - i. Team coordination and support;
 - ii. Research and analysis;
 - iii. Program development, direction and monitoring; and,
 - iv. Identification of issues through stakeholders.
- b) In addition the partnership management will be responsible for:
 - i. Managing partnership support staff activities, including any secondments, contractors and/or consultants hired by the partnership;
 - ii. Setting up and managing Tasked Working Groups;
 - iii. Receiving financial reports from both partners, reporting out on financial arrangements and partnership budget; and,
 - iv. Developing and reporting out on partnership work plans.
- c) The Tasked Working Groups:
 - i. Will be established by the partnership support staff and Steering Committee as required to review terms of reference, analyze issues, develop options and make recommendations; and,
 - ii. May have membership from local, regional, provincial and federal departments and agencies, NGOs and private sector within and/or beyond the CRD.

| AGREEMENT AUTHORIZATION | | | |
|-------------------------|----------------|---------|-----------|
| Content | | Initial | Date |
| | Procurement | | |
| | Financial Plan | | |
| | Content | KL | Feb 26/16 |
| GM Approval | | KL | Feb 26/16 |
| Form | | | |
| Authority | | | |

REMP

Regional Emergency Management Partnership in the Capital Regional Organizational Chart



Notes:

- 1) Provincial representatives are appointed by the Inter-Agency Emergency Preparedness Council
- 2) CAO representatives are selected by the Capital Regional District Board
- 3) Representative elected by the Local Government Emergency Program Advisory Commission

Regional Emergency Management Partnership in the Capital Regional Steering Committee Alternates

Steering Committee—*Alternates*

Rebecca Denlinger, Provincial Co-Chair
Alternate: Robert Turner

Kathryn Forge, Province (Health)
Alternate: John Lavery

Madeline Maley, Province (FLNRO)
Alternate: Jennifer Goad

Meggin Messenger, Province (MCSCD)
Alternate: Kris Nichols

Robert Lapham, Local Co-Chair
Alternate: Kevin Lorette

Paul Thorkelsson, Local (Saanich/CRD Board)
Alternate: Michael Burgess

Laurie Hurst, Local (Esquimalt/CRD Board)
Alternate: Jeff Miller

Dave Cockle, Local (LGEPAC)
Alternate: Maegan Thompson, Saanich/LGEPAC

TBD, First Nations Representative
Alternate TBD

Ex-Officio

Ralph Mohrmann, EMBC
Alternate: Ian Foss

Shawn Carby, CRD
Alternate: Kevin Lorette

REMP Strategic Plan – 2017-2019

(Ratified by the REMP Policy Group on March 16, 2017)

| | | | | | | | | | | | |
|--|---|---|---|---|--|--|---|--|---|--|--|
| VISION | A disaster resilient region where local, provincial, First Nation and federal governments work together with regional and community stakeholders as partners towards enhanced emergency management. | | | | | | | | | | |
| MISSION | REMP leads the development and delivery of regional emergency management. | | | | | | | | | | |
| CORE VALUES | <ul style="list-style-type: none"> • Collaboration • Unity | | | <ul style="list-style-type: none"> • Purposeful engagement • Transparency | | | <ul style="list-style-type: none"> • Continuous improvement • Consistency | | | <ul style="list-style-type: none"> • Expertise • Shared accountability | |
| PRIORITIES | 1) Understanding regional emergencies, hazards and vulnerabilities to support loss prevention, mitigation and preparedness. | | | 2) Planning for collaborative emergency response, business continuity and disaster recovery by regional partners. | | | 3) Enhancing REMP's governance, capabilities and efficiency. | | | | |
| GOALS | Motivate residents and organizations within the Region to mitigate and prepare for risks through an understanding of potential impacts and how they may be vulnerable. | | | Coordinate and integrate partner emergency plans to address priority risks, with an expectation of joint decision-making, unified communications, and resource sharing. | | | Operate REMP efficiently within the bounds of the MOU, and continuously improve relationships among regional partners. | | | | |
| TARGETS (Measurable or observable outcomes by December 31, 2019) | Significantly increase the number of households in the Region that are prepared to survive for 7 days without government assistance. | | Significantly increase the number of homeowners in the region that report taking mitigative actions based on risks. | | All government partners within the Capital Region collaborate on regional planning to address priority risks. | | All critical infrastructure (CI) organizations active in the Region communicate their emergency response plans. | | REMP decision structure and resources are sufficient to meet all goals and strategies selected for 2017-2019. | | All REMP partners receive regular communications and are engaged in regional emergency management. |
| STRATEGIES (General approach to meeting goals) | 1.1 Assess regional vulnerabilities to future disasters. | 1.2 Communicate regional hazards, vulnerabilities and risks and need for preparedness. | | 1.3 Educate residents on mitigation options and benefits. | 2.1 Engage partners in advancing the Regional Concept of Operations for collaborative response. | 2.2 Develop procedures that activate and manage response resources within the region. | 2.3 Inform response planning among critical infrastructure owners and operators. | 3.1 Define REMP decision-making and implementation process. | 3.2 Ensure resources meet requirements of activities selected for 2017-2019. | 3.3 Advance REMP partner accountability and engagement. | |
| KEY ACTIVITIES (Approaches to meeting the strategies. Staff and volunteer <u>actions</u> , and funded <u>projects</u> , are detailed later.) | <p>a) Examine existing hazard and vulnerability information for the region.</p> <p>b) Complete a risk analysis (HRVA) for the region to set priorities.</p> | <p>a) Measure the current level of public preparedness in the Region.</p> <p>b) Present consistent risk information to the public through multiple sources.</p> <p>c) Reassess public preparedness after efforts.</p> | | <p>a) Explore insurance industry roles in residential hazard mitigation.</p> <p>b) Identify successful resident mitigation in other jurisdictions.</p> <p>c) Communicate the benefits of mitigation over the long term.</p> | <p>a) Review the potential role of CAOs in response decision-making.</p> <p>b) Examine the feasibility and develop a Regional Concept of Operations, such as regional and/or sub-regional EOCs.</p> <p>c) Develop and implement an exercise to validate a Regional Concept of Operations.</p> <p>d) Research options for regional recovery coordination.</p> | <p>a) Update the Disaster Mutual Aid Agreement.</p> <p>b) Identify public, private resources available in region's Concept of Operations.</p> <p>c) Develop procedures to support regional supply chain, including transportation.</p> | <p>a) Identify all CI organizations within the Region.</p> <p>b) Capture the content of response plans among CI organizations.</p> <p>c) Communicate regional risks to each CI and advise how their plans may be integrated.</p> <p>d) Reassess the content of CI response plans.</p> | <p>a) Recommend methods for the participation in decisions of local authorities, including CAOs.</p> <p>b) Develop a process to include First Nations in REMP decision-making.</p> <p>c) Document and evaluate the REMP initiative and set priorities.</p> | <p>a) Identify resources required for activities and projects selected for 2017-2019.</p> <p>b) Develop, task, and manage the Working Groups needed to meet priorities.</p> | <p>a) Develop a Community Profile and methods for assessing partner engagement.</p> <p>b) Develop and implement REMP partner communication plan.</p> <p>c) Exchange information with IPREM and other regional initiatives in BC.</p> | |

CAPITAL REGIONAL DISTRICT - INTEGRATED WATER SERVICES

Water Watch

Issued May 29, 2017

Water Supply System Summary:

1. Useable Volume in Storage:

| Reservoir | May 31 5 Year Ave | | May 30/16 | | May 28/17 | | % Existing Full Storage |
|------------|----------------------|--------|-----------|--------|-----------|--------|----------------------------|
| | ML | MIG | ML | MIG | ML | MIG | |
| Sooke | 88,206 | 19,405 | 84,385 | 18,565 | 90,472 | 19,904 | 97.6% |
| Goldstream | 8,851 | 1,947 | 8,064 | 1,774 | 8,484 | 1,866 | 86.4% |
| Total | 97,056 | 21,352 | 92,449 | 20,339 | 98,956 | 21,770 | 96.5% |

2. Average Daily Demand:

| | | |
|------------------------------|-----------|------------|
| For the month of May | 126.8 MLD | 27.90 MIGD |
| For week ending May 28, 2017 | 160.7 MLD | 35.35 MIGD |
| Max. day May 2017, to date: | 186.0 MLD | 40.91 MIGD |

3. Average 5 Year Daily Demand for May

| | | |
|-----------------------|------------------------|-------------------------|
| Average (2012 - 2016) | 145.7 MLD ¹ | 32.06 MIGD ² |
|-----------------------|------------------------|-------------------------|

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

4. Rainfall May:

| | |
|-------------------------|-------------------------------|
| Average (1914 - 2016): | 48.3 mm |
| Actual Rainfall to Date | 41.1 (85% of monthly average) |

5. Rainfall: Sep 1 - May 28

| | |
|------------------------|--------------------------|
| Average (1914 - 2016): | 1543.9 mm |
| 2016 / 2017 | 1749.5 (113% of average) |

6. Water Conservation Action Required:

Stage 1 water conservation bylaw is now in effect.

Check our website at www.crd.bc.ca/water for more information.

If you require further information, please contact:

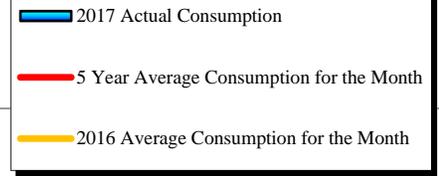
Ted Robbins, B.Sc., C.Tech
General Manager, CRD - Integrated Water Services
or

Deborah Walker
Demand Management Coordinator

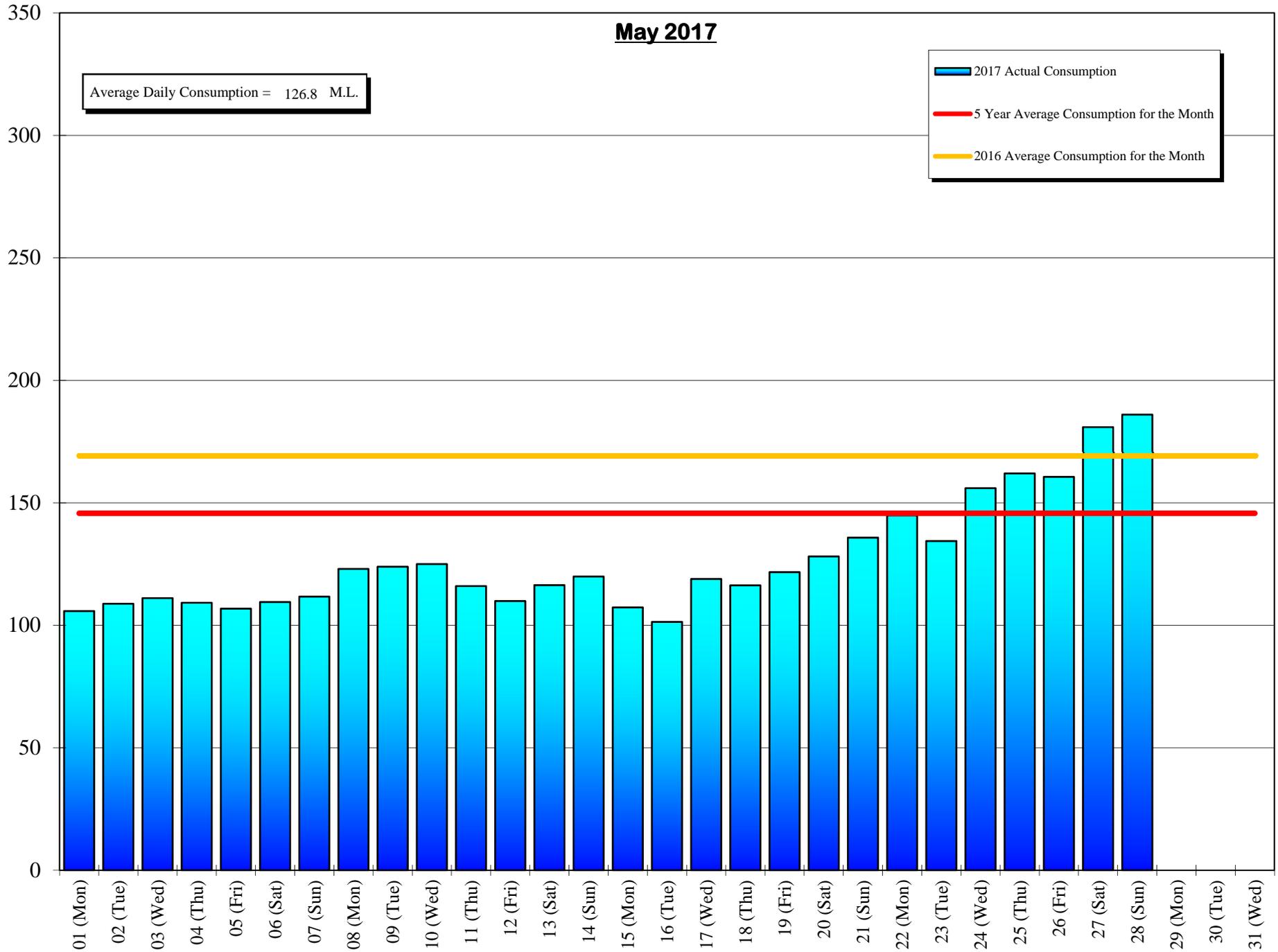
Capital Regional District Integrated Water Services
479 Island Highway
Victoria, BC V9B 1H7
(250) 474-9600

May 2017

Average Daily Consumption = 126.8 M.L.



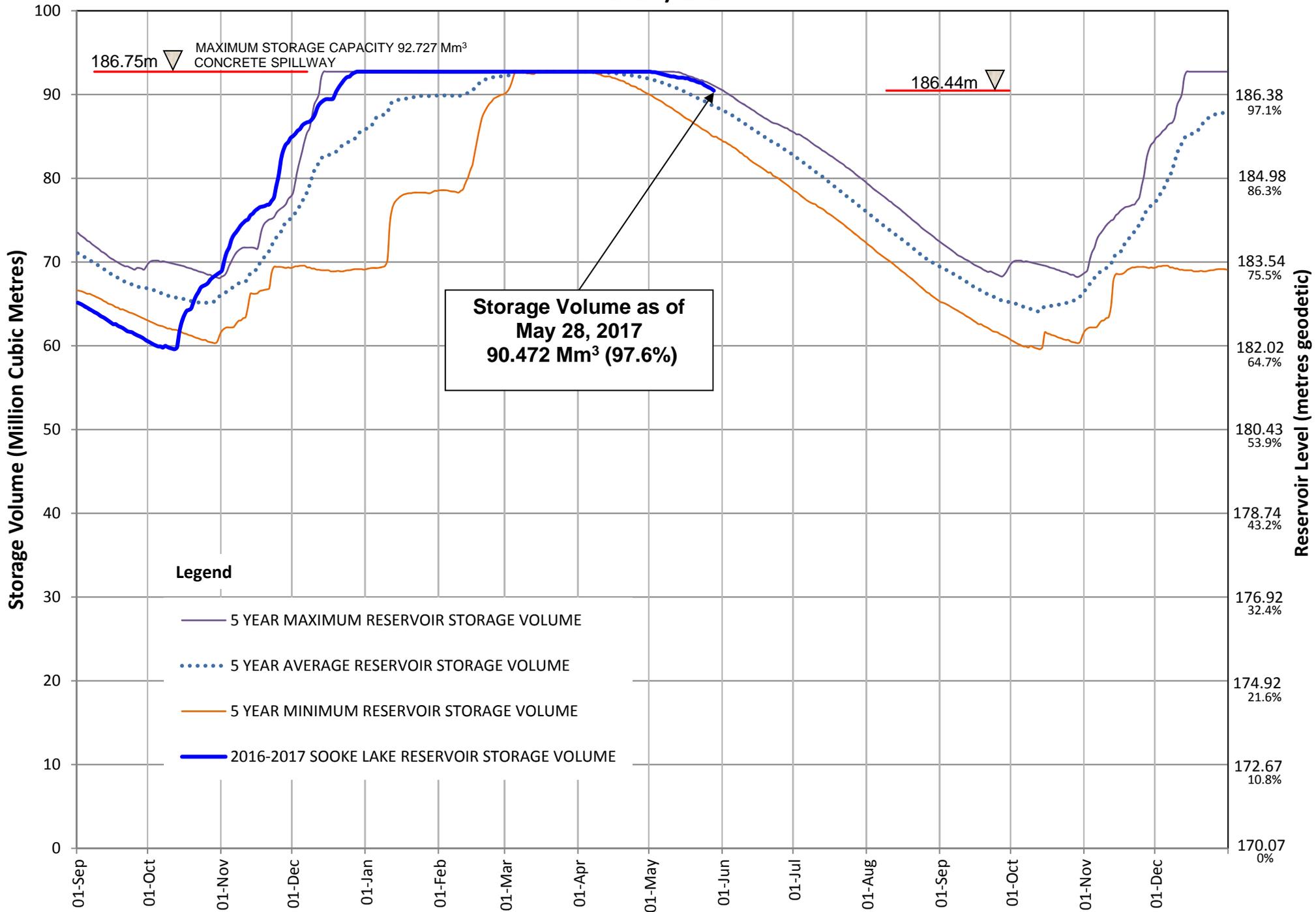
Consumption (Million Litres)



Day

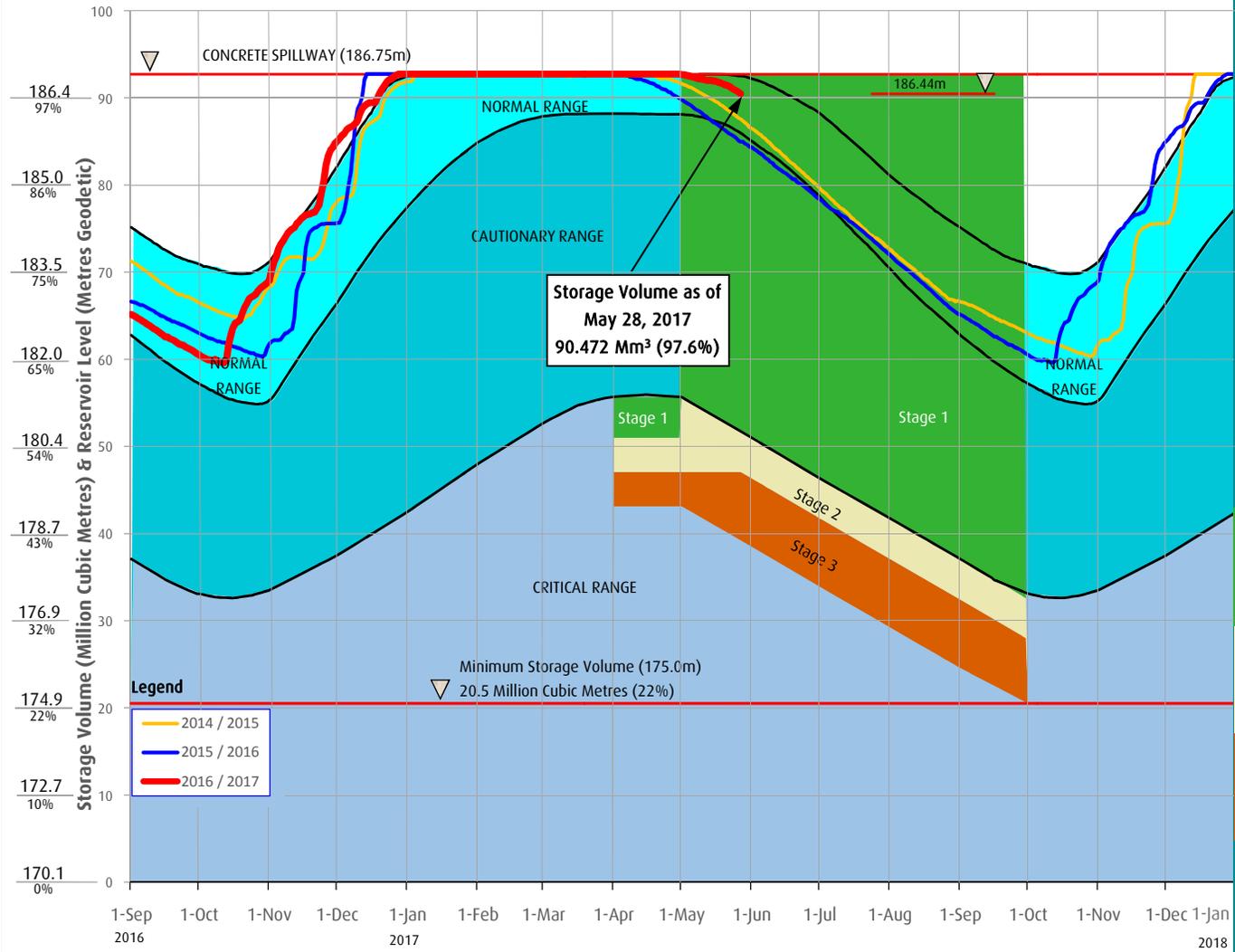
SOOKE LAKE RESERVOIR STORAGE SUMMARY

2016 / 2017



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