

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, JUNE 19, 2019**

SUBJECT Demand Management Program Overview

ISSUE

To update the Commission on the Demand Management program for the Regional Water Supply Service.

BACKGROUND

Demand management is an integral part of the (2017) Regional Water Supply Strategic Plan. In order to provide an adequate, long-term supply of high quality, safe drinking water, it is important to understand the key demand curves over time and their relationship to strategic planning, infrastructure planning, water quality and water conservation. The program has adopted an evidence-based approach, relying on water use data with predicted trends for population growth, per capita water use, water use by sector, and advancement of water saving technologies. The program will also quantify water consumption over land use, building sectors, location, season and daily cycles, in order to establish demand curves and inform planning components of the water service.

The demand curves will inform long-term, strategic planning. It is recognized that there are other factors (e.g., redundancy, resilience, risk) that will also inform strategic planning; the curves will indicate when demand is predicted to meet the currently-fixed source supply and transmission system capacities. This will allow both regional and municipal staff to work back from building to designing to planning major infrastructure for additional source supply and transmission capacity. The demand curves can also inform short- to medium term infrastructure planning. Growth across the region is uneven and each municipal distribution system will reach capacity at different times. The analyses will inform municipalities as to when they may need to build additional balancing storage capacity within their systems. The demand management data will also be a foundation for future water service agreements between the Capital Regional District (CRD), as a water supplier, and the bulk water purchasers.

An analysis of seasonal and daily water use patterns (Appendix A) will inform both water quality and water conservation. High morning and evening peak demands, especially in the summer, have the potential to challenge the water treatment systems. Understanding the relationship between water flow and water treatment allows staff to ensure a constant high quality water supply.

The water conservation programs are intended to reduce the per capita water demand over time. The CRD research will allow staff to refine and focus their strategies to reduce per capita water consumption across the region. Appendix B highlights the current approach to water conservation for both the residential and industrial/commercial/institutional sectors. By identifying water use by land use, property type and location over time, staff can develop strategies to assist residents, business owners and institutions to use water efficiently and effectively. With the Water

Conservation Bylaw as a foundation for the programs, staff are focusing on education and outreach in order to effect water conservation. Other tools are available and can be considered over time as the demand curves are evaluated and any need for accelerated water conservation is determined.

ALTERNATIVES

Alternative 1

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

Alternative 2

That the Regional Water Supply Commission refer the report back to staff for additional information.

SOCIAL IMPLICATIONS

The regional water service currently provides an abundant supply of safe, high quality drinking water at an affordable price. Effective oversight of the demand versus supply capacities allows staff to effectively plan for future growth in a changing climate and avoid significant costs to supply an essential natural resource. The water conservation strategy promotes conservation with the intention to allow the CRD to defer as long as possible, but ultimately plan for, costly infrastructure in a strategic way that minimizes long-term costs and risks.

CLIMATE IMPLICATIONS

The changing climate will impact the water cycle, which in turn informs the regional water service planning. Current and future research will help staff to understand the demand (water consumption) and supply (Sooke Lake Reservoir usable volume), as well as any potential risks to water quality.

ECONOMIC IMPLICATIONS

The overall demand management budget for 2019 is \$665,000. Demand management is an integral component in the overall water supply service. Investments in research, as well as water conservation, will ensure effective and efficient delivery for the service, defer costly infrastructure, and allow for long-term, strategic planning to ensure a sustainable safe drinking water supply for the region for the foreseeable future. Concurrently, successful water conservation will also benefit residents, businesses and institutions with lower water use.

INTERGOVERNMENTAL IMPLICATIONS

Regional and local governments and other bulk water purchasers will need to coordinate infrastructure planning. Demand management data will be a key aspect of that joint planning. Staff will continue to communicate formally and informally with all stakeholders for all aspects of demand management planning (e.g., infrastructure planning, water conservation messaging, etc).

CONCLUSION

Demand Management is a critical planning tool for regional water supply system. The CRD's Demand Management Program is using an evidence-based approach. The program will analyze consumption data for comparison to critical supply infrastructure capacity against demand forecasts. With a growing population, changing technology and climate change, the program will remain an essential component of the drinking water service and help ensure a long-term sustainable and affordable drinking water supply in the region.

RECOMMENDATION

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

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Attachments: Appendix A – Demand Management Planning
Appendix B – Water Conservation Strategy