



Corporate Report

NO: R233

COUNCIL DATE: October 17,

2005

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **October 12,
2005**

FROM: **General Manager,
Engineering** FILE:

SUBJECT: **Drinking Water Management Plan**

RECOMMENDATIONS

1. That Council endorse the Greater Vancouver Water District's (GVWD) Drinking Water Management Plan.
2. That Council direct staff to implement the Municipal actions in the Drinking Water Management Plan, as summarized in this report.

INTENT

To seek Council's endorsement and approval to implement the Municipal actions of the regional Drinking Water Management Plan.

BACKGROUND

The Drinking Water Management Plan was initiated and prepared by the GVWD and the member municipalities. The draft Plan was completed and submitted to GVWD Board in February, 2005. Consultation on the draft plan included workshop and discussion with Regional Water Advisory Committee, municipal Mayors and Councillors at the Council of Councils, Provincial and Federal agencies, and eight public consultation events. The Plan was revised based on the input received.

The final DWMP is an action oriented plan which provides the direction and priority for drinking water initiatives in the Region in order to have an affordable and sustainable water supply for at least the next 25 years. This will be achieved through the Plan's goals, strategies and actions.

The Plan has the following three primary goals:

- Goal 1: Provide Clean, Safe Drinking Water
- Goal 2: Ensure the Sustainable Use of Water
- Goal 3: Ensure the Efficient Supply of Water

There are detailed strategies and actions in the DWMP in order to achieve each of the primary goals. These actions are outlined in the discussion below:

However, the Plan, through its actions, will add cost to the GVWD. The GVWD water rate is projected to increase by 2 cents per cubic meter to pay for the initiatives under the DWMP.

DISCUSSION

The successful implementation of the Plan will rely on the joint actions of GVWD and the member municipalities.

The Plan outlines actions that are required by both the GVWD and member municipalities. The details of the strategies and actions by the GVWD is provided in Appendix A.

The following outlines the municipal actions suggested under the Plan, the current status of Surrey's action, and its impact to Surrey if the Plan is fully implemented.

Goal 1: Provide Clean, Safe Drinking Water

The first goal is to provide clean and safe drinking water. The strategy is to use a Risk Management Multi-barrier approach from source to tap to manage the source watersheds, complete the Seymour-Capilano Filtration Project, and upgrade the primary disinfection treatment at the Coquitlam source. Water quality will be maintained throughout the transmission and distribution system by primary disinfection, chlorination, and re-chlorination, water quality monitoring program, proactive maintenance program, and backflow prevention and cross-connection control programs.

1. **Water Quality Monitoring:** The GVWD will work with municipalities to establish water quality monitoring systems in the municipal distribution system and at the tap and use this information to optimize water quality through operation of the municipal water system.
Surrey Status: The City of Surrey and GVWD have already a joint water quality monitoring program and will continue to work together to provide safe drinking water through proper monitoring.
Impact: None
2. **Maintenance Program:** The GVWD will work with municipalities to preserve water quality in the distribution system through proactive maintenance programs.
Surrey Status: The City of Surrey and GVWD have already an infrastructure maintenance program that will preserve water quality, e.g., flushing and reducing the number of dead-end water pipes.
Impact: Additional capital resources will be required to implement more stringent requirements on looping of water mains. This will be done through land development activities and some selected retrofits.
3. **Secondary Disinfection:** The GVWD and its member municipalities will reassess the secondary disinfection system after completion of the Seymour-Capilano Filtration Project.
Surrey Status: The City of Surrey has been monitoring the chlorine residual in the water system and review the performance of the secondary disinfection system.
Impact: Minimal.
4. **Cross Connection Control:** The member municipalities and the GVWD will, over the next five years, examine the feasibility of implementing, administering and maintaining backflow prevention and cross-connection control programs to protect the public water system from hazards originating on the customers premises or from temporary connections.
Surrey Status: The City of Surrey has an active cross-connection control program. Steps are now being taken to increase the efficiency of our Program.
Impact: None.

Goal 2: Ensure the Sustainable Use of Water

The second goal of the Plan is to ensure the sustainable use of water. GVWD and its member municipality are committed to pursue Demand Side Management strategies to promote using water more sustainably.

1. **Water Pricing:** The GVWD will set its water rate structure that reflects the long-run marginal cost of regional water supply.
Surrey Status: The City has a 10 Year Financial Plan under which the retail water rate reflects the long term water rate of GVWD water.
Impact: Already allowed for.
2. **Water Efficient Fixtures:** The GVWD will facilitate collective development of consistent municipal bylaws to eliminate once-through cooling water, and require water efficient fixtures in new construction and renovations. Some changes such as low flow toilets are already occurring.
Surrey Status: Pending GVWD's action.
Impact: Potential higher cost in new construction and savings in water and sewer cost to the utility customers

in the long term.

3. **Sprinkling Restrictions:** The GVWD will facilitate the collective development of consistent municipal bylaws to improve implementation and enforcement of the Water Shortage Response Plan.
Surrey Status: The City of Surrey has already worked with GVWD to implement and enforce the Water Shortage Response Plan by being one of the first Municipalities to adopt it.
Impact: Maintain the current resource allocation to effectively enforce the by law.
4. **Water Audits for Large Water Users:** In partnership with member municipalities, the GVWD will assess the merits of standardized industrial, commercial and institutional water audits for the largest 25% of large water users as the basis for initiating water conservation improvements.
Surrey Status: Pending GVWD assessment.
Impact: Additional resources will be required to administer the audits; however, this could be funded through future water savings to the customer.
5. **Water Metering:** The member municipalities will assess the merits of developing residential water metering programs, and Municipal rebate programs for water efficient fixtures and appliances.
Surrey Status: The City of Surrey already has a successful mandatory water metering program for new construction, and Voluntary Metering Program for existing residential homes. The City is a regional leader, with over 40% of our residents on water meters.
Impact: Maintain the current commitment to the water metering program.

Goal 3: Ensure the Efficient Supply of Water

The third goal of the Plan is to ensure the efficient supply of water. The strategy is to manage infrastructure proactively, which will ensure cost-effective, reliable and sustainable water supply. This will include renewing and replacing aging infrastructure, improving leak identification and repair programs, and implementing emergency and security program improvements. The GVWD will establish an asset management program for its own infrastructure and a reserve fund to ensure appropriate levels of funds are either spent on asset management or set aside in the reserve every year.

1. **Leak Detection:** Municipalities to continue leak identification and repair programs and implement operational programs to reduce leakage (such as pressure reduction/management).
Surrey Status: The City of Surrey has already implemented a zone metering and a pressure management program, which is part of the initial steps of the leak identification program.
Impact: Minimal, since the leak reduction initiative will be self funding through water savings.
2. **Infrastructure Replacement:** Municipalities need to renew and replace aging infrastructure to provide appropriate levels of services and to assist in leak reduction.
Surrey Status: The City of Surrey will expand its current replacement program to replace aging asbestos cement and cast iron pipe over the next 30 years.
Impact: Require additional financial resources for the infrastructure replacement program.
3. **Operating Agreements:** The GVWD to establish operating agreements with municipalities to ensure facilities are operated for mutual benefit under normal and emergency conditions and in a fashion that reflects the Regional Growth Strategy.
Surrey Status: Pending GVWD action.
Impact: Minimal.

CONCLUSION

The Drinking Water Management Plan (Plan) is an action oriented plan which provides the direction and priority for drinking water initiatives in the Region. The Plan ensures that the water needs of the region will be met in an affordable and sustainable fashion for at least the next 25 years.

The City of Surrey has already implemented or started several of the strategies and actions and these will have minimal impacts on our water utility. Financial impacts primarily relating to future GVWD water supply costs and infrastructure replacement will be dealt with under the 5 and 10 Year Financial Plans for the Water Utility. These will be brought forward for Council's consideration at the appropriate time.

Paul Ham, P.Eng.
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PH/VL/KKL/sj/brb
Attachment

c.c. - General Manager, Finance, Technology & HR Dept.

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APPENDIX A

Goals and Strategies of Drinking Water Management Plan

Actions by Greater Vancouver Water District

Goal 1: Provide Clean, Safe Drinking Water

Strategy #1: Use a risk management multi-barrier approach from source to tap.

1. The GVWD will continue to protect source water quality by managing watersheds in accordance with the Watershed Management Plan.
2. The GVWD will complete the Seymour-Capilano Filtration Project
3. The GVWD will monitor water quality source to tap and use this information to optimize source water disinfection, operation of the GVWD water system, and rechlorination programs.
4. The GVWD will continue to preserve water quality in the GVWD system through proactive maintenance programs.
5. The GVWD will improve the primary disinfection treatment of Coquitlam source water for Cryptosporidium.
6. The GVWD will implement works to improve water quality, including completion of the Seymour-Capilano Filtration Project, the new Coquitlam intake and other improvements in the 10 year Capital Plan.

Strategy #2: Identify and secure additional water supplies for the region.

1. The GVWD to provide for additional capacity by securing full access to the Coquitlam source under the Coquitlam Water Use Plan, and then expanding storage capacity in Seymour and Capilano watersheds.
2. As new information on the potential impacts of climate change becomes available, the GVWD will provide updates in the DWMP progress reports.

Goal 2: Ensure the Sustainable Use of Water

Strategy #1: Use drinking water sustainably

1. In partnership with member municipalities and non-government organizations, the GVWD will deliver an education program promoting behaviour change and sustainable use of water
2. The GVWD will request that the Province change the Provincial Plumbing Code to require water efficient fixtures in new construction and renovations.

Strategy #2: Match water quality to usage requirements

1. The GVWD will complete the Annacis Waste Water Treatment Plant pilot reclamation project and assess the potential for its expansion.
2. The GVWD will work with Health Authorities to request changes to the provincial health regulations to allow specific residential and commercial uses of non-potable water (grey water & rainwater).
3. In partnership with business association and/or non-government organizations, the GVWD will facilitate networking for the reuse of process wastewaters.
4. The GVWD will investigate the feasibility of substituting alternatives to drinking water for specific applications (e.g. use of rainwater stored in rooftop cisterns for irrigation) and locations (e.g. river water or sea water for use in waterfront businesses).

Goal 3: Ensure the Efficient Supply of Water

Strategy #1: Manage infrastructure proactively

1. GVWD Operating Plan to include:
 - Consolidation of asset management databases to optimize decision making on maintenance and funding of assets.
 - Renewal and replacement of aging infrastructure to provide appropriate levels of service and assist in leak reduction.
 - Leak identification and repair programs and implementation of operational programs to reduce leakage (such as pressure reduction/management).
2. The GVWD will continue to conduct hazard assessments and implement emergency and security program improvements.
3. Given the water system is aging and infrastructure renewal and replacement costs are projected to increase, the GVWD to use the full life cycle cost of assets to determine infrastructure funding requirements and ensure sustainable infrastructure funding is in place.
4. GVWD to establish a GVWD asset management reserve fund to ensure appropriate levels of funds are either spent on asset management or set aside in the reserve every year (to help ensure sustainable asset management).
5. The GVWD will follow sustainability principles in planning and implementing processes, programs and projects.
6. The GVWD to ascertain the costs and benefits of leak reduction programs specific to the GVWD water system and cost structure, and reassess whenever there are significant changes in the economic value of water to the costs of leak reduction initiatives.

Strategy #2: Optimize capacity through effective partnerships

1. GVWD Operating Plan to include:
 - Planning and construction of GVWD facilities to meet the projected growth in population and economic activity in the approved Regional Growth Strategy.
 - A program to identify and implement improvements to the GVWD wholesale water metering system to ensure appropriate levels of services.
 - To facilitate the efficient planning of the future water system, the GVWD and member municipalities will follow the principles defining what facilities should be owned and operated by the GVWD and what facilities by the municipalities in Appendix 2 of the DWMP supporting document.
2. The GVWD will implement seasonal pricing on its wholesale water sales over a three year period beginning in the 2006 budget year. In 2008, the summer season price will be 1.25 times the price during the remainder of the year (fall/winter/spring).
3. The GVWD to increase its operating reserve to 15% of its annual operating budget with a phase in period.
4. The GVWD and member municipalities to evaluate current sprinkling regulations and options for improvement.