



CITY OF VANCOUVER

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ADMINISTRATIVE REPORT

Report Date: April 23, 2007
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TO: Vancouver City Council

FROM: General Manager, Engineering Services

SUBJECT: Vancouver Actions to Support the GVWD Drinking Water Management Plan

RECOMMENDATION

THAT Council endorse the Greater Vancouver Water District's (GVWD) Drinking Water Management Plan, and direct staff to implement the Municipal Actions as summarized in this report.

GENERAL MANAGER'S COMMENTS

The General Manager of Engineering Services recommends approval of the foregoing.

CITY MANAGER'S COMMENTS

The City Manager recommends approval of the foregoing.

COUNCIL POLICY

There is no applicable Council Policy.

PURPOSE

To obtain Council's endorsement of the GVWD Drinking Water Management Plan, along with supporting actions by the City of Vancouver.

BACKGROUND

The Drinking Water Management Plan (DWMP) was initiated and prepared by the GVWD and its member municipalities. The draft Plan was completed and submitted to the GVWD Board in February 2005. Consultation on the draft Plan included workshops and discussions with the Regional Water Advisory Committee, municipal mayors and councillors, provincial and federal agencies and eight public consultation events. The final Plan was approved by the Water Board in September 2005.

The Plan is action oriented and provides direction for drinking water initiatives for at least the next 25 years. It is founded on the following three primary goals:

- Provide Clean, Safe Drinking Water
- Ensure the Sustainable Use of Water
- Ensure the Efficient Supply of Water

The detailed strategies and actions in the Plan to achieve each of these goals are outlined in the discussion below.

DISCUSSION

The successful implementation of the Drinking Water Management Plan will require actions by the GVWD and its member municipalities. The details of the strategies and actions committed to by the GVWD are provided in Appendix A. This discussion outlines the supporting DWMP actions for Vancouver and other regional municipalities.

Vancouver has already implemented a number of actions consistent with the DWMP. These recommendations are applicable to the whole of the GVRD service area. The following list of goals indicate the GVRD recommendations and the City's current actions that adhere to the recommendations.

Goal 1: Provide Clean, Safe Drinking Water

The provision of clean, safe drinking water is essential for public health. Under operating permits issued by Vancouver Coastal Health, local drinking water quality is a joint responsibility of the GVWD and the City of Vancouver. The GVWD is responsible for treated water supply, and the City distributes it to the customer base.

To meet this goal, the key strategy is a risk management multi-barrier approach for water quality protection. This is achieved by restricting access to the watersheds, completing the Seymour-Capilano Filtration Project, and upgrading the primary disinfection treatment at Coquitlam Lake. Water quality is maintained throughout the transmission and distribution systems through primary and secondary disinfection, proactive infrastructure management, a backflow prevention program and water quality monitoring.

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.

Vancouver Actions: To ensure that multi-barrier drinking water protections systems are providing safe water that meets quality standards, a program is already in place that monitors water from its source to tap. This program is a coordinated effort between the GVWD, City of Vancouver and Vancouver Coastal Health.

2. **Maintenance Programs:** The GVWD will work with municipalities to preserve water quality in the distribution system through proactive maintenance programs.

Vancouver Actions: Vancouver already has a proactive water quality improvement program in place, which includes regular flushing of pipes and capital projects to reduce stagnation and microbial re-growth in the water system.

3. **Secondary Disinfection:** The GVWD and its member municipalities will reassess the secondary disinfection system after completion of the Seymour-Capilano Filtration Project.

Vancouver Actions: The City has been monitoring chlorine residuals in the distribution system and there are some stations that occasionally experience lower than recommended levels. Due to the reduction in organic content and the elimination of turbidity (cloudiness) at the filtration plant, additional re-chlorination stations in Vancouver are not necessarily anticipated at this time. In addition, capital projects that reduce stagnation will allow the City to minimize the future construction of costly re-chlorination stations.

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 customer premises or from temporary connections.

Vancouver Actions: The City has had an active cross connection control program for 20 years. Steps are now being taken to step up enforcement by conducting selected on-site surveys to ensure compliance.

Goal 2: Ensure the Sustainable Use of Water

The GVWD and its member municipalities are committed to pursue demand side management strategies to promote the sustainable use of water.

1. **Water Pricing:** The GVWD will set its water rate structure that reflects the long run marginal cost of regional water supply.

Vancouver Actions: As part of the City's annual rate setting process, financial forecasts are made on a ten year time frame using the region's projected rates as well as our own. This retail water rate therefore already reflects the long term.

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.

Vancouver Actions: Water efficient fixtures have been a requirement in Vancouver since 1994 and have helped reduce per capita consumption for residential use. The City also began regulating the use of water for cooling systems in 1980.

3. **Sprinkling Restrictions:** The GVWD will facilitate the collective development of consistent municipal by-laws to improve the implementation and enforcement of the Water Shortage Response Plan.

Vancouver Actions: A new by-law regulating outdoor discretionary use of water was enacted in April of 2004. New enforcement strategies are currently being planned with a greater emphasis on public education and will be presented in early 2008.

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.

Vancouver Actions: Pending the outcome of the GVWD study, the City may pursue a water audit program modeled to meet triple bottom-line sustainability criteria. The administrative costs of the program would be recovered through reduced City expenditures on bulk treated water from the GVWD.

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.

Vancouver Actions: All residential dwellings over two units are already metered. An upcoming report exploring the options for metering, including an analysis of the benefits and drawbacks of the different options will be presented in the fall of 2007. Vancouver has required water efficient fixtures in new construction since 1994. Rebates are not proposed due to the relatively high penetration of efficient fixtures in Vancouver.

Goal 3: Ensure the Efficient Supply of Water

This strategy will ensure proactive management of water infrastructure for a cost effective, reliable and sustainable water supply. This includes renewing and replacing aging infrastructure, improving leak identification 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 spent on asset management or set aside every year.

1. **Leak Detection: Municipalities to continue leak identification and repair programs and implement operational programs to reduce leakage, such as pressure reduction and management.**

Vancouver Actions: The City already has a proactive leak detection and repair program. In addition, a trial pressure management and zone metering program will be initiated in 2007 to find further opportunities for water loss reductions and to assist the City in determining the leakage volume. The trial program will be funded from the current Engineering and Site Investigation budget. Water loss management measures typically achieve full cost recovery through reduced expenditures on GVWD water.

2. **Infrastructure Replacement: Municipalities need to renew and replace aging infrastructure to provide appropriate levels of services and to assist leak reduction.**

Vancouver Actions: A proactive water infrastructure replacement program has been in place in the City of Vancouver for over 25 years. This program minimizes the life cycle costs of infrastructure and maintains reliable water service for customers.

3. **Operating Agreements: The GVWD to establish operating agreements with municipalities to ensure facilities are operated for a mutual benefit under normal and emergency conditions and in a fashion that reflects the Regional Growth Strategy.**

Vancouver Actions: City staff will work with the GVWD to ensure that new operating agreements reflect the needs of the local customer base.

FINANCIAL IMPLICATIONS

Most of the City actions have been incorporated into either the 2006-2008 Capital Plan or the existing operating budget and will not have impact on the City's water pricing projections. The GVWD actions are expected to add approximately 2 cents per cubic metre above previous cost projections. Water rates for City of Vancouver users are reviewed annually and staff will report back to Council the impact any GVWD cost increases may have on the City's water rates. As an example, the average single family home will see a water rate increase from \$349 to approximately \$361.

CONCLUSION

The GVWD Drinking Water Management Plan is an action oriented plan that provides direction and priorities for drinking water initiatives in the region. The Plan ensures that the needs of the GVWD and member municipalities are met in an affordable and sustainable manner for the next 25 years.

With the exception of the Water Audits and the Operating Agreements, all of the strategies and actions are underway in some form and accounted for in the existing capital and operating budgets.

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Municipal Actions in the “Drinking Water Management Plan for the GVWD and Member Municipalities”

Goal 1: Provide Clean, Safe Drinking Water

- 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.
- The GVWD will work with municipalities to preserve water quality in the distribution system through proactive maintenance programs.
- The GVWD and its member municipalities will reassess the secondary disinfection system after completion of the Seymour-Capilano Filtration Project.
- 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 customers’ premises or from temporary connections.

Goal 2: Ensure the Sustainable Use of Water

- The GVWD and its members commit to achieving a retail water rate structure that reflects the long-run marginal cost of regional water supply.
- 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.
- The GVWD will facilitate collective development of consistent municipal bylaws to improve implementation and enforcement of the Water Shortage Response Plan.
- In partnership with member municipalities, the GVWD will assess the merits of standardized industrial, commercial and institutional water audits for the largest 25% of business water users as the basis for initiating water conservation improvements.
- The member municipalities will assess the merits of developing residential water metering programs, and municipal rebate programs for water efficient fixtures and appliances.

Goal 3: Ensure the Efficient Supply of Water

- Municipalities will continue leak identification and repair programs and implement operational programs to reduce leakage (such as pressure reduction/management).
- Municipalities will renew and replace aging infrastructure to provide appropriate levels of service and to assist in leak reduction.
- Municipalities will ascertain the costs and benefits of leak reduction programs specific to their water system and municipal setting, and reassess whenever there are significant changes in the economic value of water or the costs of leak reduction initiatives.
- The GVWD to establish operating agreements with municipalities to ensure facilities are operated for mutual benefit under normal and emergency conditions and in conformity with the approved Growth Management Plan.