From: Brian Guy [bg@summit-environmental.com]
Sent: April-30-10 8:56 PM
To: Living Water Smart ENV:EX
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Please accept this submission form the Okanagan Phase 2 Water Supply and Demand Project Working Group as part of the WAM process.

Regards,

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SUMMIT
ENVIRONMENTAL CONSULTANTS INC.
A Member of the Associated Engineering Group of Companies

April 30, 2010

Living Water Smart
Via website: livingwatersmart@gov.bc.ca

Re: Recommendations from Okanagan Water Supply and Demand Project Phase 2 Working Group

To whom it may concern:

Introduction:

The Province of British Columbia is contemplating changes to the provincial Water Act. In support of this initiative, the Ministry of Environment (MOE) is seeking input from interested parties throughout the Province, in a process known as the Water Act Modernization (WAM) process. This letter provides recommendations for Water Act modernization to MOE from the Okanagan Water Supply and Demand Project Phase 2 Working Group. The Working Group is a multi-agency group responsible for implementation of Phase 2. This submission meets a commitment made to the Natural Resources Canada, B.C. Regional Adaptation Collaborative.

Overview of the Phase 2 Water Supply and Demand Project

The Okanagan Water Supply and Demand Project is a multi-phase project focussed on providing scientific information to support long-term sustainability of the water resources of the Okanagan Basin in British Columbia. Phase 1 of the Project identified and evaluated the state of the information available to complete a comprehensive Basin-wide analysis of water supply and demand, identified data gaps, and proposed a strategy for completing Phase 2. Phase 2 has been underway for the past three years and is nearing completion. It has been led by the Okanagan Basin Water Board (OBWB) and the B.C. Ministry of Environment, with participation from many other federal, provincial, local, and research agencies, and First Nations. Phase 2 has achieved three broad goals:

- determine the current supply of and demand for water throughout the Okanagan Basin;
- develop a water supply model and a water demand model that can be used both to describe current conditions and to examine the impacts of future changes in climate and other factors that influence water availability; and
- run the models for several future scenarios to demonstrate their utility.

A Steering Committee with representation from the major project funders and other key agencies provided guidance and direction to the project. A technical Working Group comprised of about 20 technical experts from various agencies was responsible for implementation. In meeting this mandate, the Working Group conducted several scientific and modelling studies.

Recommendations for Water Act modernization:

Several major themes relevant to Water Act modernization have emerged from the studies and modeling completed by the Working Group. These themes are addressed and recommendations are provided below.

1. Measurement of surface and groundwater resources:

The availability and quality of information needed to support water management is variable over the Okanagan Basin, and can be characterized as generally poor. It is important to measure the sources of water at a sufficient number of locations over a sufficiently long period of time to have confidence that management decisions are made with a sound understanding of the risks associated with the decisions. In the Okanagan, the measurement of surface water and of groundwater resources is insufficient to support necessary management decisions.

Recommendation 1:

The Working Group recommends that a modernized Water Act ensure that financial resources are made available to measure surface and groundwater resources at the level of intensity needed to support the management decisions that rely on that information – including water allocation, flood control, and drought planning, among others.

2. Measurement and reporting of surface and groundwater use:

Despite continuing expansion of the monitoring of water use by major water suppliers in the Okanagan (both of bulk withdrawals and deliveries to customers), the state of information on water use in the Okanagan is generally poor, particularly with respect to groundwater use.

Recommendation 2:

It is recommended that a modernized Water Act require licensees that are storing water, and licensees that are withdrawing water from surface and groundwater sources to measure their storage and withdrawals. It is further recommended that the Water Act requires large water users to report their water use to the Province on at least a monthly basis. Without water use reporting it will be very difficult to properly reconcile water use with water licences for allocation planning, or to manage water and determine fair water use plans for tributaries.

3. Water Licensing:

Groundwater

Whereas the B.C. Water Act provides for the licensing of surface water for beneficial uses, it does not provide for the licensing of groundwater. As a result there is a lack of information on the groundwater resource, and a lack of information on groundwater use, and of the impacts of that use on surface and groundwater resources. In many locations in the Okanagan, the surface water and the groundwater are directly connected, such that a withdrawal from groundwater can directly affect a nearby surface watercourse, and vice-versa. In these situations, a groundwater well can be used to withdraw surface water without the need for a surface water licence. In the Okanagan, it is estimated that 22% of the water use is derived from groundwater wells.

Recommendation 3:

The Working Group recommends that groundwater should be permitted or licensed within the same allocation system used for surface water.

Other licensing issues

Water allocation decisions are complex, and require expert judgment based on scientific hydrological and ecological assessments. In addition, the scenarios examined in the Phase 2 project indicate that water supplies could be threatened in future as the climate continues to change. Another possible change is that the irrigation season could begin earlier in spring and end later in fall. These findings have implications for water licensing.

Recommendation 4:

The Working Group recommends that all water allocation decisions be based on assessments of water availability in the context of the year-to-year variability of climate and including the potential for drought and climate change, and incorporate appropriate buffers and storage requirements.

Recommendation 5: The Working Group recommends that decisions for new licences be made only following a watershed review of licences and licensed volumes that have priority to the licence being considered. All licence holders should be made aware of the risk that, in some dry years, and with senior licensees withdrawing water upstream, they may not be able to secure the water under licence. Upstream licence holders should also be informed about their responsibilities to more senior downstream licence holders.

Recommendation 6:

The Working Group recommends that irrigation licences be modified to allow a longer season under the same seasonal volume of allocation – encouraging efficiency improvements, but allowing farmers to maintain productivity under changing climatic conditions. This change may reduce agricultural water use in early fall, which is a sensitive time for fish in many Okanagan tributaries.

4. Water use efficiency:

The water demand and water supply models developed during the project were used to examine future scenarios in which the climate continues to change, the population continues to grow, and other key factors that affect water supply and use are varied. The results clearly indicated that continuing to achieve greater water use efficiencies was very important for the long-term sustainability of the water supply. Because most (86%) of the water used in the Okanagan is used for irrigation, the results showed that reducing water use for outdoor use will provide the greatest benefit.

Recommendation 7:

The Working Group recommends that a modernized Water Act provide regulatory incentives to achieve improvements in water use efficiency for both indoor and outdoor uses – for all sectors.

5. Protection of upland water supply reservoirs

Many water storage reservoirs have been constructed on the upland plateau on the west and east sides of the Okanagan valley. These storage reservoirs trap spring runoff and store it for later release to

support irrigation and indoor uses in the lower valley during the summer. Future winter snowpacks are likely to be smaller and to melt earlier than at present. In addition the irrigation season is likely to become longer. These factors will challenge the operators of these storage reservoirs to continue to supply water through the irrigation season.

Recommendation 8:
The Working Group recommends that a modernized Water Act provide protection of these important water sources, by allowing water suppliers to maintain guaranteed access to these reservoirs and the surrounding land base for reservoir operation and potential expansion, for the purpose of continuing to provide reliable water supplies.

6. Instream flows:
Environmental needs must be considered in all allocation decisions. Despite a comprehensive evaluation of relevant methods of estimating the instream flows required to sustain populations of aquatic biota in the Okanagan, our main conclusion is that there are no desktop methods (such as the B.C. Instream Flow Method) that can accurately estimate required instream flows.

Recommendation 9:
The Working Group recommends that, where streams are at risk of over allocation, site–specific field investigations be completed on each stream (or representative member of a group of streams sharing similar characteristics) to estimate the required sustainable instream flows. This approach may require prior agreement on a definition of adequate stream health.

7. Flexibility:
Finally, the Working Group recognizes that there may be regional differences across the Province with respect to the extent to which surface and groundwater resources are limited; and in the extent to which a sound knowledge and understanding of those resources and their use is necessary to ensure the long-term sustainability of the resource.

Recommendation 10:
The Working Group recommends that a modernized Water Act should respect the range in requirements across the Province for water resource and water use information for the purpose of sustainable water management, and ensure that changes are not adopted in a “one size fits all” approach. However, we suggest that a common set of supply-demand thresholds be established as reference points, that when reached would trigger a graduated water planning and management response.

Summary and Closing:
In summary, over a three-year period, the Phase 2 Okanagan Water Supply and Demand Project has assessed the state of knowledge of surface and groundwater resources, and of water use in the

Okanagan Basin; and has developed comprehensive models of water supply and demand for the Basin. Several themes have emerged through the many scientific and modeling studies conducted in support of the Project that are relevant to the Water Act. This letter has listed those themes and summarized our recommendations to the Province for modernization of the Water Act. Whereas the basis of our recommendations is our recent experiences in the Okanagan, we have considered broader Provincial concerns when making the recommendations contained within this letter.

Please contact any one of the signatories to this letter if you wish additional information. Thank you for the opportunity to provide input through the WAM process.

Yours truly,

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