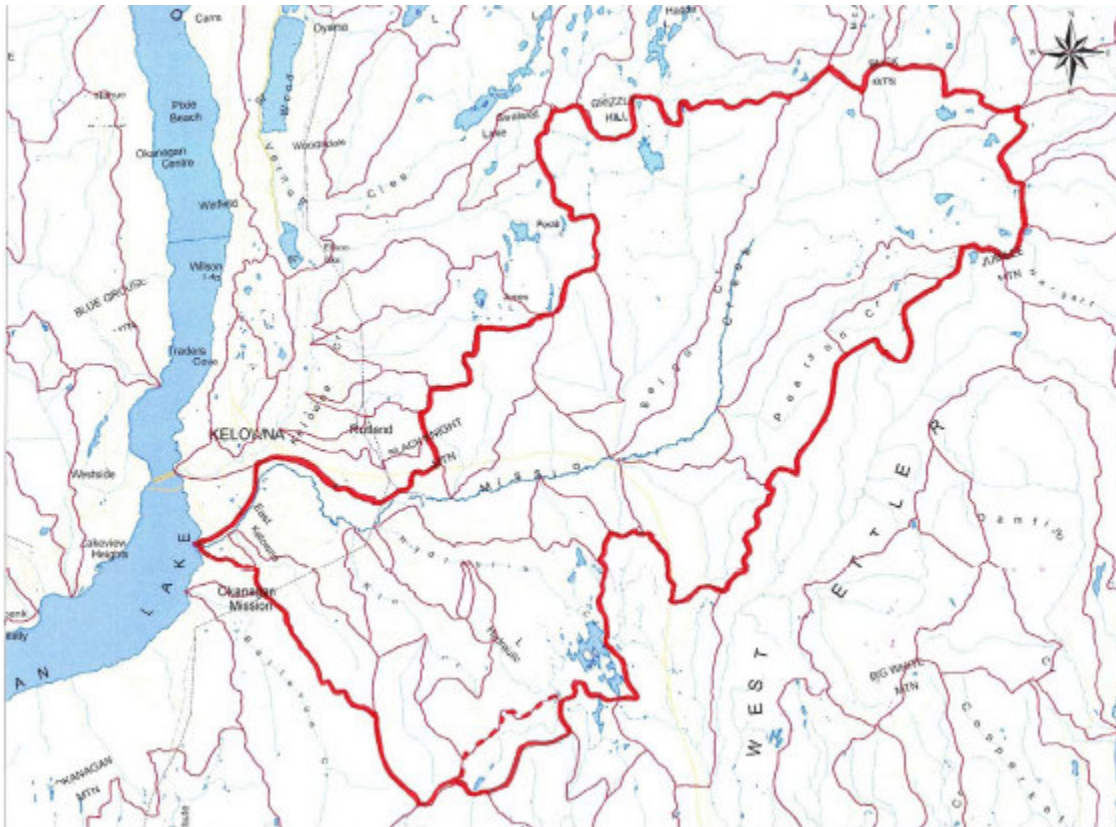


Black Mountain Irrigation District

Mission Creek Water Use Plan

Summary Scope of Work 2008



This project is being administered in cooperation and support from the following organizations



1. KEY FEATURES OF THE PROPOSAL

Water Management Consultants is pleased to present this proposal to undertake the Mission Creek Water Use Plan in response to your request dated November 14, 2007.

Our approach to developing a Water Use Plan for Mission Creek is to build on the expertise we have developed in water management planning and reservoir operations modelling for irrigation and water supply systems. We are very familiar with the Water Use Plan process because we provided the Independent Program Manager for the BC Hydro Water Use Planning Program over the period 1999 to 2004 to resolve water use issues at all BC Hydro Dams in the Province. During the drought of 2003 we assisted the District of Summerland in water supply reservoir operations and demand analysis. We subsequently initiated and led the preparation of a Water Use Plan for the District, the first Water Use Plan in the Province not associated with a hydroelectric project. The Trout Creek Water Use Plan has been successfully implemented and provides certainty to the reservoir operators, security for fish flows and targets for the community to achieve water usage reductions.

Water Management Consultants has been providing consulting services to the Greater Vancouver Regional District (GVRD) on water supply and reservoir management since 2000. As part of the long-term GVRD water supply planning project we investigated the hydrologic capacity of the watersheds and reservoirs and carried out future demand and supply studies including investigating the impact of potential climate change and the effect of future demand management strategies. Future demand scenarios were investigated up to the year 2100. A complex reservoir operating model was developed for the GVRD as part of this study. We recently developed a Decision Support System (DSS) model for the GVRD for reservoir operations during drought years which the GVRD now uses on a daily basis through the summer months to assist decisions on reservoir operations and demand management.

The key to successful development of a Water Use Plan is an effective reservoir operations model. The Mission Creek Reservoir Operation Model will have the ability to simulate the current reservoir operation rules and diversion strategy and will include a demand management component. Our approach to developing the reservoir operations model will be to use the same methodology as the successful models we developed for the Trout Creek Reservoirs and for the Greater Vancouver Water District reservoirs. We will set up the reservoir operations model to run for at least 40 years so that we can investigate the frequency of occurrence of the requirement for different levels of demand management with different scenarios for water allocation.

For the Mission Creek Reservoir Operations Model we will include a water quality component using mass balance principles. The model we recently developed for reservoir operations in the Tambo Basin in Peru has a similar water quality module. The effectiveness of using different reservoirs on water quality in Mission Creek will be determined and the model will have the flexibility to examine different water quality parameters.

Water Management Consultants is proposing a well qualified project team with expertise and experience in water use planning and reservoir operations modelling.

- Our proposed Project Manager, David Sellars, is a leading British Columbia water resources planner with extensive local and international experience in the hydrology of water supply systems. He was the facilitator for the Trout Creek Water Use Plan and will be the facilitator for the Mission Creek Water Use Plan.
- The proposed Senior Modeller was responsible for the reservoir operations model for Trout Creek in the District of Summerland and was also responsible for developing the irrigation supply and demand model for the Oregon Jack Irrigation System for the Ashcroft and Basque Ranches. Our modelling team recently refined the reservoir operations Decision Support System (DSS) model for the Greater Vancouver Water District.
- We recently completed a climate change study for the operations of the Capilano Reservoir for the GVRD investigating the effects of the El Nino Southern Oscillation (ENSO) and the Pacific Decadal Oscillation (PDO).
- Our experience in fish habitat enhancement studies includes a current project to use storage in Westwood Lake to supplement low flows in the Millstone River in Nanaimo. We have developed a reservoir operations model of Westwood Lake to investigate alternative fish flow release scenarios.

Water Management Consultants is a leader in the application of hydrologic and water resources systems models for water supply planning and operations. We have constructed reservoir operation models for multi-reservoir and diversion systems on a number of projects. Section 6 of this proposal provides a list of reservoir operation models that we have developed and applied for water management planning and investigating alternative water allocation scenarios.