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A newsletter from the Black Mountain Irrigation District No. 44

BMID WATER NEWS

The year 2012 was challenging for BMID on many fronts. The intensive spring run-off in Mission Creek was unprecedented. In June alone, there were four (4) separate events when Mission Creek flow reached > 100 m³ / second. The highest previous flow in 67 years of records was 92 m³ / second. The high flow destabilized creek banks and resulted in slides and ongoing high raw water turbidity. The BMID water treatment plant ran all year with increased operating costs of more than \$150,000. The extended plant operations creates larger volumes of sludge that will have to be processed in 2013.

2012 Water Usage - Year-to-Date

Total BMID water consumption for 2012 was lower than average earlier in the year and higher later in the year, as shown in the table below. The average and actual mega-liters (ML=1,000 m³) of water used per month by BMID is listed below. The average is from the last 21 years of data.

Table with 4 columns: Month, Average, Actual, %

Although the BMID service population is increasing, the total annual volume of water used by BMID has declined slightly due more rainfall earlier in the year, less intensive agriculture in the service area, and all larger water connections being metered.

The amount of development and construction was low in 2012 with housing development continuing in the Kirschner Mountain, Black Mountain, Melcor, and Tower Ranch development areas. Some industrial building activity also occurred in the McCurdy Place industrial lands adjacent to Highway 97. (continued over)

"In the world there is nothing more submissive or weak as water. Yet in attacking that which is hard and strong, nothing can surpass it" Lao Tzu

CLIMATE CHANGE - ADAPTATION

BMID's primary focus at the current time is to upgrade water quality to be in conformance with the Provincial regulations. Improved water quality and safety will be achieved through the addition of Ultra-violet disinfection and the construction of the Black Mountain Reservoir. This work is progressing.



Beyond the water quality issues, BMID believes that the next major issue facing the region is the increased variability in water supply due to climate change. Greater water supply variability has been experienced with the extreme dry and wet cycles in the last 5 years. The high flows in Mission Creek in June, 2012 and the extended time with no rainfall in Kelowna in August and September are recent examples.

In the last 100 years, the average global temperature has increased approximately 2 degrees Celsius, and it can be argued, for and against, that human activity has contributed to the warming. Regardless of the cause, BMID is of the opinion that we must be prepared to adapt to the impacts of increased water supply variability. Warmer temperatures globally may result in melting of some of the polar ice caps, which would add water to the oceans, rivers and streams. The amount of water within the world is finite with only the form of water changing. Depending on temperature, water will be either in solid (ice), vapour (gas) or liquid form.

In recent years the southern US has experienced drought and declining groundwater levels. In the spring of 2012, BMID met with Chilean officials from their Federal Department of Agriculture who were touring western Canada. They stated that in recent years, Chile was drier in the north (subtropical climate) and wetter in the temperate southern part of their 4000 km long country. The objective isn't to argue whether or not climate change is real, but rather to figure out how to adapt to the increased potential of extended drought cycles and increased flooding.

Water storage will be the key to reducing the impacts of both flood and drought.



BMID operates 12 dams at 8 reservoir sites in the Mission and Scotty Creek watersheds. BMID collects runoff from snowmelt in the spring in our reservoirs, and then releases this water later in the year to Mission Creek where it is collected at our intake just east

of Kelowna. The 16,000 mega-litres (ML) of water stored within our 8 reservoirs is sufficient for BMID demands. It is only a small fraction of the total runoff within Mission Creek. In June 2012 alone, the runoff volume that passed the Ziprick Road flow monitoring station in Kelowna was 115,000 ML.

The ability of BMID to reduce Mission Creek flooding with existing storage is not realistic or BMID's responsibility. There are many potential storage sites within the Mission Creek watershed, but a regional water management effort would be required to reduce the flooding potential to the greater community. Adaptation to variability is high on the list of issues being discussed by the valley's water experts.



BMID Operations and Maintenance

BMID was forced to repair eroded slopes along our Hadden Reservoir storage pond which is adjacent to Mission Creek. Large rock rip-rap was required to repair the slopes near the intake gates. The slopes were damaged during the June runoff.

A new Guard-All fabric building was completed at the Water Treatment Plant this spring. The large 70x120 ft. building covers the chemical mixing area. The building protects the equipment, keeps the water tanks from freezing, and allows the treatment plant to run during the winter.

The building structures above Pressure Reducing Valve Stations No. 1 & 2 have been rebuilt. A new 600 volt electrical service and a new 100 hp pump are being installed in each station to increase emergency pumping capacity to supply the higher service elevation areas.

BMID has 12 dams. Regular maintenance took place on the dams this fall with usual issues being encountered and addressed. The Provincial government, as part of their dam safety program, requires a Dam Safety Review once every 10 years on all major dams in the province. BMID has 7 dams of High Consequence and is retaining a geotechnical consultant to assist in the Dam Safety Review. Completion of this review is expected by mid-2013.

Black Mountain Reservoir Project

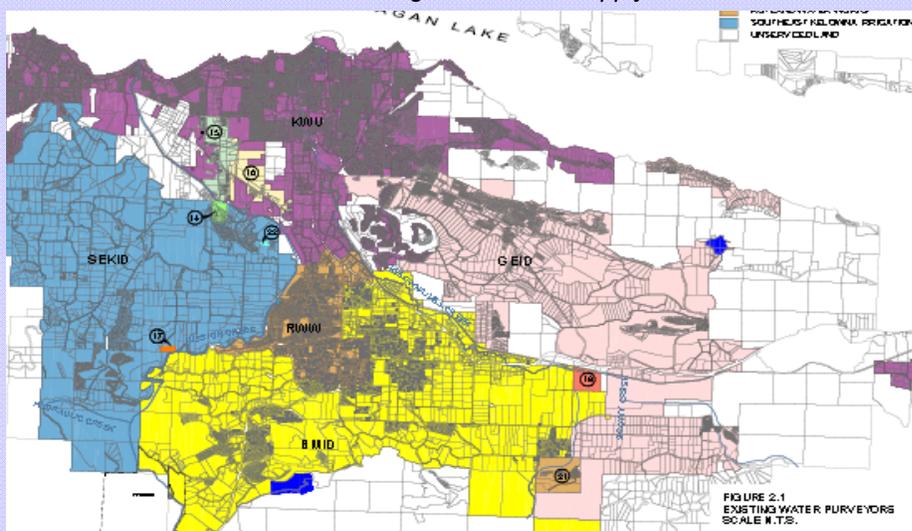
Work is progressing on several fronts on the reservoir project. In September, Bennett Contracting completed the installation of 1,000 metres of transmission main & road reconstruction from Highway 33 along Joe Rich Road to the Reservoir site.

Pre-grading of the remaining transmission main route to the Ultra-Violet disinfection building and dam site is underway. BMID has earth moving equipment working in this area, which is closed to the public. The area can be viewed from above on Stockley Drive. UV disinfection design is underway and consultants will be retained to complete this work over the winter.

Rezoning of the reservoir lands is in process with the City. The City supported the Agricultural Land Commission application by BMID to have the UV facilities located directly below the future Black Mountain Reservoir dam.

The Kelowna water utilities have made significant progress in moving forward on water quality improvements for Kelowna. The *Kelowna Integrated Water Supply Plan* was developed over the last two years through a co-operative effort of the 5 large water utilities: City, BMID, GEID, SEKID and Rutland Waterworks, the Ministry of Community Development, Interior Health and the Ministry of Agriculture. The plan has now been endorsed by City Council and all of the four water district Boards of Trustees. The City-wide plan sets out project priority order, expenditures, interconnections, and generally how water supply will evolve in Kelowna for the foreseeable future. The plan was required by the Province in order for them to allow the consideration of senior government funding for local water quality projects.

The Minister of Community Development requested the plan to ensure that there was no duplication in capital works or services provided by the water utilities. The Minister also required that the plan provide best lowest-cost solutions for improving water quality, be flexible with respect to service provision and governance, protect agriculture and achieve the required Health outcomes. The Ministers objectives were achieved and the Ministry has subsequently asked for an Implementation Plan for details on how the *Kelowna Integrated Water Supply Plan* will be carried out.



One of the most common questions regarding the Kelowna water supply structure is; “*Why are there five utilities instead of one single utility?*” The reasons are due to history and service characteristics. The Kelowna irrigation districts were set up in the 1920’s to provide water for agriculture in this semi-arid climate. The water systems were upgraded and pressurized in the early 1970s to provide water for agriculture. This same infrastructure now also serves a domestic population that grew out into the rural areas. Water quality standards have since increased and with the low rural density, the costs to improve the rural area water quality is substantial.

There was significant media coverage recently on the SE Kelowna Irrigation District referendum to borrow \$18 M for their water quality improvement project. Although the public did not support the project, the project is in-line with the *Kelowna Integrated Water Supply Plan*. Because of the rural nature of SEKID, their costs will be higher than elsewhere in the City. Funding support is needed in order to keep water rates at manageable levels. Thanks to the City-wide effort by technical staff and local politicians, the need for funding has reached the decision makers in Victoria.

The entire *Kelowna Integrated Water Supply Plan* will be available in December at the BMID website in the reports section at <http://www.bmid.ca>

OBSERVE, RECORD & REPORT
questionable watershed activities to
BMID at 765-5169

“If you do not have the time to do it right, when will you have time to do it over”
John Wooden