WATER METERING

General

Tolls are an important revenue source for those improvement districts that operate water systems. Many boards establish the amount of tolls based on the average costs to supply water to properties with similar types of uses. This fixed-rate approach is the only one possible where water meters are not installed.

In almost all cases, water meters result in both a reduction in water consumption as well as a drop in the basic cost of domestic water. There is also an equity argument in favour of water meters as users pay for the amount of water that they use. In other words, the those using less water are not subsidizing those that use more.

Where water meters have reduced water consumption there are also positive implications for capital infrastructure expenditures. Reductions in water useage may allow improvement districts to defer, or even cancel, plans to develop additional water sources, water reservoirs, treatment plants, or supply line upgrades. Also, an improvement district with water meters can more quickly identify and repair leaks in the system.

Where water meters are used, there are a number of approaches to pricing for the board of trustees to consider. These include:

- **Single Block Rate** – where a constant rate is applied to all water consumed over the billing period. All customers pay the same amount for each unit of water used.

- **Increasing Block Rate** - the unit price of water increases beyond a certain level of consumption. The model can be structured so that the first block rate applies to what may be a desirable (and realistic) level of consumption. Usage beyond that level is charged at a different, higher block rate.

- **Seasonal Charge** - higher volume charges are applied to all water used during the peak water demand season under this approach. High peak-period demand creates the need for over-sizing of water lines and storage facilities relative to what is required to meet demand in non-peak periods. The higher volume charge can be used to transfer more of the infrastructure cost burden to heavy users. The higher seasonal charge may, alternatively, reduce peak-period demand enough to eliminate the need for over-sizing water lines and storage facilities.

- **Combination Fixed and Block Rate** - users are charged a fixed rate to cover the system administration and a separate volume-based rate is charged for actual usage.

The decision to install water meters can be informed by installing a few meters on properties that have different uses, then monitoring the consumption rates. This will help to develop a "water use profile". Even if an improvement district was only looking to install water meters on non-residential properties, it would be useful to develop a profile for residential usage in order to establish a fair and equitable metered rate based on the different rates of consumption.

The Water Distribution Regulation Bylaw (sample in Section D), allows the board to, at any time, substitute metered service for unmetered service. Each dwelling should have its own water meter, and all water meters are the property of the improvement district. Water meters require maintenance and eventually need replacement, so if borrowing is required to finance a water meter installation program, the term of the loan should not exceed ten years.

Water meters are usually located at the property line at the curb stop. There are different types of water meters, some meters need to be read manually but others can be read electronically. Customers are usually billed quarterly, but bills can be sent out at the improvement district's discretion.

Education is a vital part of any program to install water meters. Information on water meters is available from a number of sources, including the Ministry.

Other Water Conservation Measures

The adoption of water conservation practices within improvement districts is in keeping with B.C.'s Water Conservation Strategy http://wlapwww.gov.bc.ca/wat/wtr_cons_strategy/toc.html. Water conservation should be addressed during the planning phase of a project, including the confirmation of water demands, usage patterns, areas of potential water loss, of water-saving measures. The United States Environmental Protection Agency (USEPA) Water Use Efficiency Program http://www.epa.gov/owm/water-efficiency/ may be a useful reference for water conservation planning because it identifies a range of practical water conservation tools. Water conservation measures available include, but are not limited to, public education, low-water use fixtures, universal meters, water rate structuring, irrigation and low water demand landscaping and leak detection programs. Replacement of problem water mains, service connections and property line shut off valves may also assist in conserving water.

The provincial government supports sound water conservation practices. This principle was evident throughout the Canada-BC Infrastructure Program where infrastructure grants for local government water-related projects were dependent upon demonstrated demand-side management practices. Given water conservation policies water quality and water quantity are inextricably linked, it is important for an improvement district to implement coherent water conservation policies.

Using water efficiently is one way of meeting water quality and water quantity goals. The efficient use of water can also prevent pollution by reducing wastewater flows, recycling industrial process water, reclaiming wastewater and using less energy. Conserving water is beneficial in a number of ways and adopting sound water conservation practices can help improvement districts avoid, downsize, or postpone water and wastewater projects. Water resource planning has shifted from supply-side management to demand-side management.