

Information Bulletin - Environment Act Proposals for Municipal Water Supply Systems – Supplementary Guidelines



These guidelines apply to Environment Act Proposals (EAPs) for the construction or expansion of municipal water treatment plants and municipal water distribution systems. The guidelines do not apply to water distribution system extensions which require approval under *The Public Health Act* and/or *Drinking Water Safety Act* only.

In addition to the standard information requirements of the Environment Act Proposal, the following information should be provided:

1. Water Rights Licence

Has an application for a Water Rights Licence been filed with Manitoba Water Stewardship? (Required for new water sources or for increased use of an existing source beyond the previously licensed amount.)

2. System Use

For the following items, estimate quantities in the near term future, and for the end of the system's planning period. Significant assumptions should be detailed.

- Estimated gross water use for all purposes
- Estimated number of connections
- Average day and peak day demands
- Water treatment plant requirements
- Estimated per capita consumption
- Agricultural and livestock water use

3. Water Conservation Report

Provide a discussion of water conservation measures which are currently used or planned for implementation during the lifetime of the project. The discussion should address:

- Current conservation measures
- Planned conservation measures
- Public awareness and public involvement
- Schedule for implementation

See the Information Bulletin - Water Efficiency Plans for Towns and Municipalities (attached) for more details.

For further information, please contact:

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Planning to meet a community's demand for water is essential when designing any water project. Including, as part of the planning process, a strategy to determine how a community and its citizens can use water more efficiently will help to reduce projected demand.

The specific objectives of water use efficiency plans for towns and municipalities differ with each community. Stretching limited water supplies, avoiding expensive water or wastewater infrastructure expansion, or addressing environmental concerns may each require different strategies.

Possible indicators of the need for a water efficiency plan may include:

- Long-term water supply limitations
- Overpumping of groundwater, indicated by salt water intrusion into wells, or lower water levels in an aquifer
- Overextended wastewater treatment system
- High year round per capita water use (over 200 litres per person per day)
- High summer peak demand (often due to watering lawns, washing cars, etc.)
- High winter demand (usually caused by water bleeders)
- High water or wastewater treatment costs
- Large commercial use
- Large industrial use
- Rapid growth
- Decaying water and sewer lines
- Older residences

Pressure Reduction

Some water systems have optimized the pressure in their distribution systems, resulting in reduced loss through leakage and lower water use. For example, a slight decrease in water pressure may reduce water used during a shower, without an obvious difference in water flow.

Flow Reducers at Service Connections

Flow reducers limit the flow rate at each service connection. They help to ensure that use by one connection will not interfere with water access for other customers.

Metering

All connections to the water system should be metered, and the water demand recorded. Meters larger than two inches should be checked annually for accuracy. Meters two inches or smaller should be randomly sampled to check for accuracy. Under recording can result in lost revenue for the water utility. Accurate metering is required to monitor water losses in the system.

Deteriorating Water and Sewer Lines - Leak Detection and Repair

A water use monitoring program should be implemented to compare metered water use with metered water supplied. If the unaccounted for water is greater than 15%, a plan, including a schedule of implementation, should be developed to detect and repair the leaks.

Pricing

Pricing is a very effective measure to increase the efficiency of water use and reduce water waste. Increasing the price will result in a shorter payback period for customers who choose to invest in water saving devices or equipment.

The Public Utilities Board requires that the price of water reflect its full cost. Including the full price of the water supply and wastewater systems and operation on the water bill ensures that each customer pays for their fair share of the infrastructure, and that each consumer is motivated to reduce water waste.

There are many pricing structures that may result in lower water use. Increasing block rate (the more you use, the more you pay) is a structure that is growing in popularity in communities with water and wastewater challenges.

Availability of Water Efficient Fixtures and Appliances

Communities may wish to work cooperatively with plumbers, plumbing suppliers, and hardware stores to ensure the availability of water efficient fixtures and appliances.

High Peak Summer Use

Summer peak water use is usually a result of outdoor watering of gardens, yards, etc. This can be addressed by programs that encourage lower water use landscaping and efficient watering methods.

High Peak Winter Use

Planned and unauthorized bleeders may be responsible for high winter peaks. Alternative methods of reducing frozen water supply pipes may be explored, such as heat tracing, pump-back reservoir systems or continuous circulation of the water supply. Monitoring programs may isolate the locations of unnecessary bleeders so the bleeders can be eliminated.

Public Awareness and Education

Consider educating customers, including distributing information on best practices or current issues. The awareness and education material should reflect and address the water use patterns and needs specific to each community. For example, if the problem is a need to expand a water treatment plant due to summer use, a campaign targeting high outdoor water use may be appropriate.

Incentive Programs

Six litre toilet retrofit incentive programs have been successful in communities across North America, resulting in sustainable reduction in domestic water use. Select eligible toilets on independent performance tests, as some toilets function better than others. Offering retrofit kits at cost or below cost has also resulted in some successes.

By-Laws

By-laws requiring new construction and retrofits to use water efficient fixtures and devices may be considered.

Low Water Use

Even if domestic water use is already below 200 litres per person per day, the water utility should still formulate a plan that ensures continued low consumption.

There are many aspects of water use to evaluate when putting together a comprehensive plan. Areas to prioritize depend on your community's particular needs, and actions your community has already taken. Demand management programs can decrease costs and your community's need for water.