The drop on water

# Water Quantity

Water needs to be available in homes in the right quantity for everyday, seasonal, and special uses.

## Quantity

Homes of two to four people need 680 to 1360 litres (180 to 360 gallons) of water each day to meet typical water needs.

Typical household needs include

- Everyday use, such as drinking, cooking, and indoor plumbing, including toilets, bathtubs, showers, dishwashers, laundry, and water treatment units.
- Seasonal use, such as watering of lawns and gardens, car washing, backyard skating rinks, and swimming pools.
- Special uses, such as animal watering, crop irrigation, heat pumps, and backwashing of water treatment devices.

The water used in a day may be concentrated into one to two hours, often in different areas of the house at the same time. For the water supply to be able to meet peak demand, consider the following factors:

- flow rate, which is the continuous rate of yield for a well
- size of well, such as the depth and diameter
- static water level, which is the level at which the water stands in a well when no water is being pumped

## Water Shortages

Causes of water shortages include human activities, increased usage, problems in the plumbing system, and climatic conditions.

Most water shortages are the result of too little precipitation over an extended period of time, usually a season or more. To view information on province-wide groundwater levels, see our website at **www.gov.ns.ca/nse/water/groundwater/groundwaternetwork.asp**.

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During periods of water shortage, water levels in wells can decrease dramatically. Groundwater levels are usually higher during the spring, as a result of precipitation and snow melt, then gradually decline until early fall. Shallow dug wells are most vulnerable in dry weather conditions. In extreme cases, the water table could drop below the bottom of the well, resulting in a complete loss of water supply.

### Water Shortage Solutions

If it's the first time you have experienced a water shortage, check your pump and pressure system for mechanical or electrical problems. Call a qualified pump installer or electrician, if necessary. If possible, check the water level against a record of water levels kept for the well.

If you have experienced water shortages in the past, did they occur during dry conditions? If not, water shortages may indicate problems with the well, the pump system, or the aquifer the well taps into.

Consider the following changes to water use and to the pump, well, or storage in your water system to increase water availability:

### Conserve water

Reduce your overall water use indoors (kitchen, bathroom) and outdoors (garden, other uses) consistently all year round. Awareness and practice of water conservation will enable you to be more flexible during periods of water shortage. It will also reduce the amount of stress that is placed on your well and local water resources.

Water conservation is good practice, whatever the quantity available from the well. Using water-saving devices, such as reduced-flow shower heads, aerators, dual-flush toilets, and rain barrels will decrease your energy use and the load on your on-site septic or sewer system.

### Stagger water use

Run the shower, dishwasher, and washing machine at different times during the day. Spread laundry loads over more than one day, rather than all at once, if possible. This will increase the amount of water available for each of these activities individually.

## REGULAR TESTING

Homeowners are responsible for monitoring the quality of their well water:

- Test for bacterial quality every 6 months.
- Test for chemical quality every 2 years.
- Test more often if you notice changes in physical qualities – taste, smell, or colour.

Regular testing alerts you to problems with your drinking water.

### Adjust your pump

Lower your pump or pump intake deeper into the well. Before making any adjustments to the pump intake depth, it is essential to check your pump's specifications and consult a certified pump or well contractor to determine the maximum recommended depth setting for your pump and maximum recommended pumping rate for your well. Lowering the intake depth without a proper assessment could reduce the pumping rate and pump efficiency and make your problems worse. Find a list of certified pump and well contractors at **www.gov.ns.ca/nse/water/wellcontractors.asp**.

### Change your pump

If your existing pumping equipment cannot achieve the recommended pumping rate, consider a larger pump. Make sure that the larger pump does not exceed the maximum safe pumping rate for your well. A pump that is too large could cause irreparable damage to your well. It is essential to consult a qualified pump or well contractor to determine your specific needs and the capacity of the well.

In some cases, installing a different type of pump may help. For example, a submersible pump instead of a jet pump, or a deep-well jet instead of shallow-well jet. This will be site-specific. It depends on well depth, diameter, static water level, yield, and stability of the borehole wall.

### Modify your well

Have a contractor deepen or modify the existing well. In some circumstances, having your existing well deepened can provide more water. Before making the decision to deepen your well, consult a qualified professional who will review water well records, hydrogeological information, and the geology of the immediate area. Factors such as proximity to salt water and the presence of poorer quality aquifers at depth must also be considered. This will help establish whether fresh water aquifers exist at depths below the depth of the well.

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## Construct a new well

A new well could either replace or augment an existing well. If you had remedial work done on your well and continue to experience water shortage problems, consider constructing a new well. Before making the decision to construct a new well, consult a qualified professional to review water well records, hydrogeological information, and the geology of the immediate area. A local well driller or digger should also be familiar with local conditions. This review will provide you with essential information such as well depth, static water level, and well yield, and will help determine the best type of well (dug or drilled) for your needs. For more information, see our publication *Before You Construct a Water Well* at **www.gov.ns.ca/nse/water/docs/ConstructWell.pdf**.

If the new well will replace the existing well, you must properly decommission the well that will no longer be used. See our fact sheet on well decommissioning for more information.

## Install more storage

Install a secondary water storage tank. The tank should be constructed of materials to meet the current NSF standards for potable water. NSF certification is an internationally recognized safety standard. NSF International is a not-for-profit, non-governmental organization that sets health and safety standards for manufacturers in 80 countries. See its website at **www.nsf.org**.

Test the water in the storage tank to make sure it is safe. Secondary storage often involves a tank to provide at least one day's water supply. This depends on the number of people in the house, water needs, and available space for installation. The secondary storage tank provides volumes of water during peak demands that the well would be unable to supply in the short term.

Consider the location of a secondary water storage tank – indoors, underground. Do you need to avoid freezing? If your water shortage or increased shortage needs are temporary and seasonal (summer), an above-ground water storage tank could provide short-term relief.

## FOR MORE INFORMATION

Contact
Nova Scotia Environment at
1-877-9ENVIRO
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www.gov.ns.ca/nse/water/

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