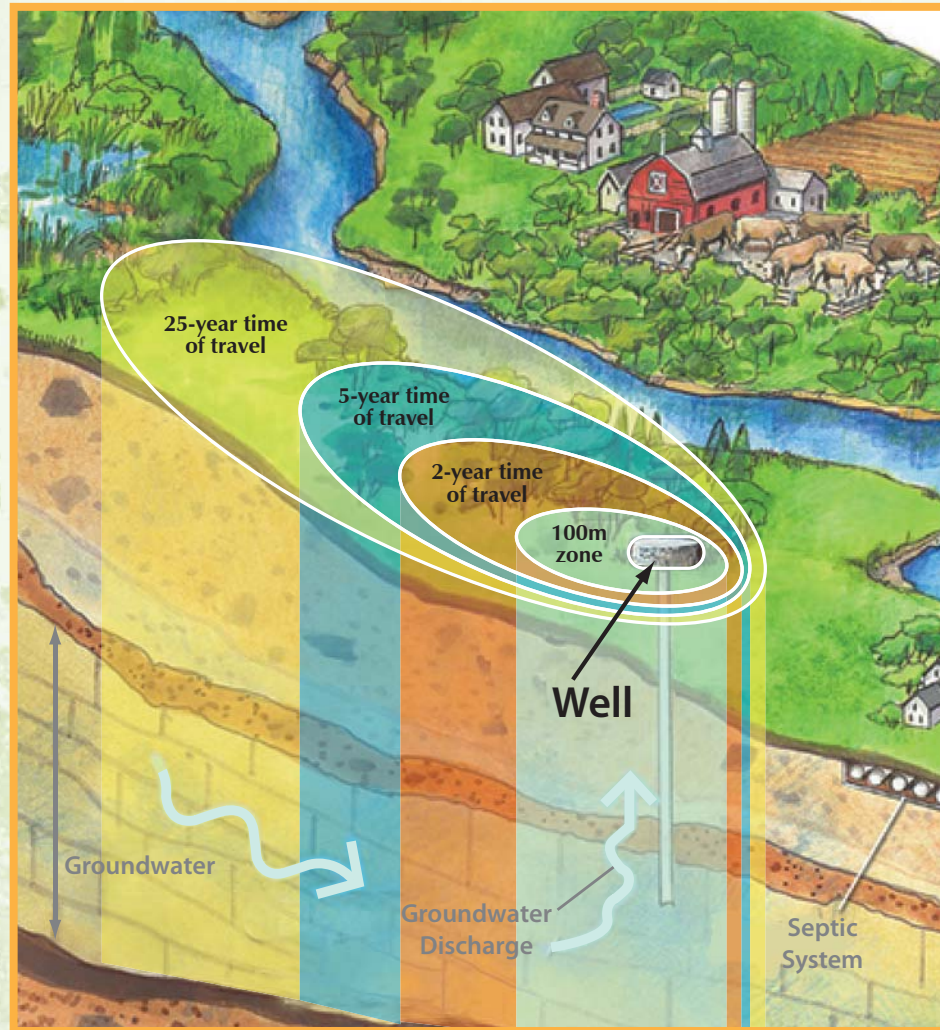


What is A Wellhead Protection Area?



100 metre zone – That’s the area where the risk to the well is highest and the greatest care should be taken in handling of all potential contaminants.

2 year time of travel – In the second ring, bacteria and viruses from human and animal waste are a concern, as are hazardous chemicals.

5 year time of travel – Biological contaminants are less of a concern in the third ring but chemical pollutants remain a concern.

25 year time of travel – The most persistent pollutants remain a concern.

For communities that rely on **groundwater**, computer models and other tools are being used to identify **vulnerable areas where activities can threaten the municipal drinking water supply**. From that information, researchers can build a picture of the groundwater conditions around each well. In each area there are different contaminants that could pose a risk.

There are two key concepts that are used to assess a wellhead area:

Time of Travel

Water moves slowly through the ground. The underground area feeding water to a well is known as the well’s “capture zone.” Capture zones are defined by the amount of time it takes water to travel through the aquifer to the well, called the “time of travel.” Capture zones have been identified at the 100-metre, two-year, five-year and 25-year time-of-travel limits. Areas on the surface matching the capture zones are known as “wellhead protection areas.”

Vulnerability

Vulnerability is a measure of how easily water (and potential contaminants) can penetrate the ground to reach the aquifer supplying the well.

What is An Intake Protection Zone?

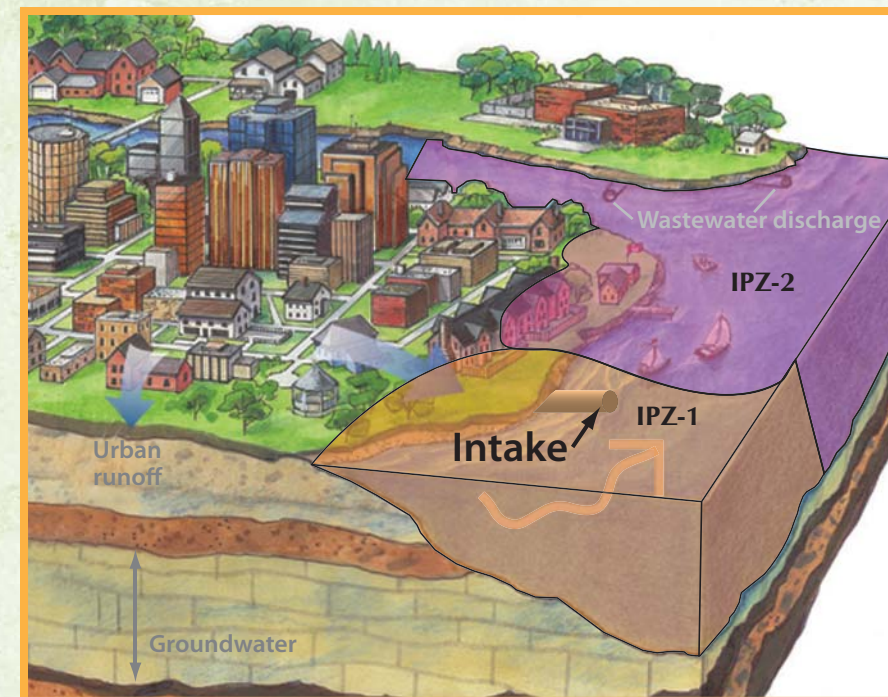
For communities that rely on **surface water**, computer forecasting and modeling is used to determine **Intake Protection Zones**. These are areas where a spill or leak may threaten the water supply so quickly that there may not be enough time to warn a community to shut its water intake.

For a river intake, researchers have to take into account river flows – in both high and low flow conditions – since this can have a significant effect on time of travel. They have to look at streams feeding into the river. They also have to know where municipal storm sewers or rural drains enter the river.

The land surrounding the river, streams, sewers and drains becomes part of the Intake Protection Zone (IPZ1). In the case of an intake on a Great Lake, a one-kilometre zone (IPZ1) is established around the intake which, in some cases, may include shore areas.

In addition, a second zone (IPZ2) is created that includes a larger area that can have an impact on an intake.

Intake Protection Zones (IPZ) are the areas of land and water upstream of the Municipalities’ water intake where special care must be taken in the use and handling of potential contaminants.



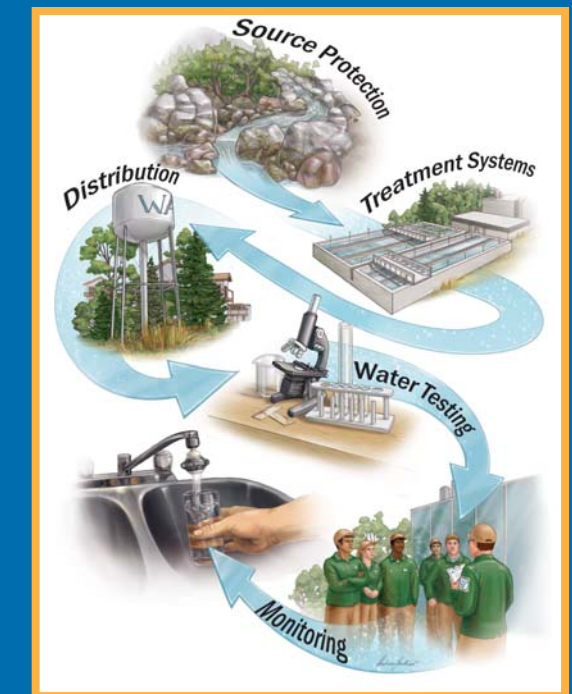
The Multi-Barrier System

Protecting water sources is part of a multi-barrier system to keeping municipal drinking water from becoming contaminated or depleted. Each barrier provides an added layer of security for municipal water supplies.

Existing laws and regulations ensure that municipal water is adequately treated, tested and safely distributed. The Clean Water Act introduces additional safeguards to protect water before it enters the treatment/ distribution system.

The five barriers are:

1. source water protection
2. adequate treatment
3. a secure distribution system
4. proper monitoring and warning systems
5. well thought-out responses to problems



To learn more about the Clean Water Act and source water protection visit

www.sourcewater.ca