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# ENVIRONMENTAL Fact Sheet

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## A Comparison of Public Water Service to Private Water Wells

Approximately 46% of New Hampshire residents obtain water for their home from a private well installed on their property, while the remaining residents get their water from a connection to a public water system, such as a city/town, water utility or homeowner association.

Well water quality varies widely across the state and routinely contains naturally occurring contaminants that are derived from the geology in which a well is drilled. Common naturally occurring contaminants in New Hampshire groundwater include bacteria, arsenic, uranium, iron, manganese and radon. In populated areas that are even slightly developed with residential, commercial or industrial properties, groundwater contamination derived from releases or spills from those varied land uses can occur and substantially impact groundwater quality over large areas, affecting many wells. Examples of human-derived groundwater contamination include gasoline constituents, per/poly-fluorinated alkyl substances (PFAS), septic discharges (nutrients) and road salt, to name a few.

Although both public water and private wells can suitably provide a home with safe, clean water, there are important differences in the reliability of water service, water quality and costs between these two water supply approaches. This fact sheet identifies some differences to consider when doing a side-by-side evaluation of these options and the associated costs.

### **Public Water System Service**

A public water system is a piped water system with its own source(s) of supply that serves 25 or more people for 60 or more days per year. Public water systems are regulated by state and federal laws that require the water system to deliver to its consumers an adequate volume of water that reliably meets public health-based drinking water standards. Public water systems meet these requirements by obtaining water from tested and approved sources; building and maintaining centralized water treatment plants and facilities; constructing redundant power systems; installing and maintaining many miles or thousands of feet of water supply piping; and collecting and analyzing water quality samples for all regulated chemical parameters on a daily/monthly/annual basis to ensure health standards are consistently met. Costs related to all of these activities are spread across the consumers connected to the water system.

### **Private Well Supply**

Use of a private well for a home is not subject to regulation, has no required water sampling, and has no mandatory water treatment for contaminants of public health concern. When the owner or user of a private well does sample the water, they are responsible for evaluating and deciding what, if anything, the water should be treated for. All costs related to installing, maintaining, repairing or replacing any component of the water supply system, including the well itself, if necessary, are the responsibility of the private well owner.

**Table 1. Advantages and Disadvantages of Obtaining Water from a Public Water System or Private Well**

	Connection to a Large Public Water System	Private Well
Consistently Meets Safe Drinking Water Standards with No Homeowner Responsibility or Action	Yes	No
Pressurized Fire Hydrants	Yes	No
Water Supply Reliability During a Drought	Yes	No
Impacts on Homeowner Insurance	Decreases Cost	Increases Cost
Water Supply During Power Outages	Yes	No, unless home has a generator
Routine Appointments Inside the Home to Sample Water Quality and Maintain Water Treatment Systems	No	Yes
Potential for \$15K-\$25K in Costs to Replace Water Supply If a Well Fails and a New One Has to Be Installed	No	Yes
Range of Annual Costs	\$800 - \$1,500	\$350 - \$2,400

**Cost Comparison of Private Well Supply and Public Water System Service**

Factors that affect the cost of water supply for either option include:

- Water quality and level of treatment that is required (public water system) or desired (private well).
- Type of well(s).
- Volume of water use at the home.
- Frequency of and approach to maintenance and repair of water supply components.

Due to these factors, the cost estimates below are provided as a guide only, and individual choices will cause the actual costs of annual residential water supply to be more or less than estimated.

**Table 2. Private Well and Public Water Supply Annual Cost Estimates**

Private Well – No Maintenance	Private Well – With Maintenance	Public Water System Service
\$350 - \$400	\$1,200 - \$2,400	\$800 - \$1,500
<i>no water sampling, no water treatment, not protective of public health</i>	<i>water sampling and water quality treatment to meet drinking water standards</i>	<i>water service complies with drinking water standards for quality and quantity</i>

**Table 2 Assumptions**

Private Well (both categories)

- ½ hp pump, 300 gpd per home, \$0.20 kWh electric rate.
- One-time pump replacement capital cost spread over 30-year home ownership.

#### Private Well - No Maintenance

- No sampling and no water treatment.
- Homeowner insurance costs approximately \$200 more per year if pressurized fire hydrants are not nearby.
- Cost does NOT include the potential for catastrophic well failure, which could require \$15K-\$25K to replace the well.

#### Private Well - With Maintenance

- Low end - Whole house treatment for PFAS only, maintained per installer specification.
- High end - Whole house treatment for PFAS, radon and hardness; point of use treatment for other naturally occurring contaminants; maintained per installer specification.
- Treatment system initial capital cost spread over 30-year home ownership.
- One-time treatment system replacement capital cost spread over 30-year home ownership.
- Water quality sampling for PFAS and standard private well parameters every three years.
- Homeowner insurance costs approximately \$200 more per year if pressurized fire hydrants are not nearby.
- Cost does NOT include the potential for catastrophic well failure, which could require \$15K-\$25K to replace the well.

#### Public Water System Service

- 2019-2021 published water rates for two private water utilities serving southeast New Hampshire region.
- Base service and unit rate for 300 gpd for a residential service connection.

#### **For More Information**

Please contact the Drinking Water and Groundwater Bureau at [\(603\) 271-2513](tel:6032712513) or [dwgbinfo@des.nh.gov](mailto:dwgbinfo@des.nh.gov) or visit [our website](#).

Note: This fact sheet is accurate as of December 2022. Equipment cost or water rate changes that occur after this date may render this information inaccurate or incomplete.