

# The Unseen Public Water Cycle

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## Public Water System Sources

Community (e.g. county, municipal water utility), non-community transient (e.g. gas stations), and noncommunity nontransient (e.g. schools, hospitals with own water systems)

**Where does NC's population get their water from?**

**7,689** public sources supply water to about **80%**.

Hundreds of thousands of individual sources, including private wells, serve the other **20%**.



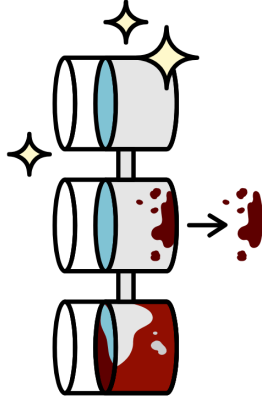
**Residential:** Single-family homes, apartment buildings, townhomes, condos, etc.



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## Pump to Treatment

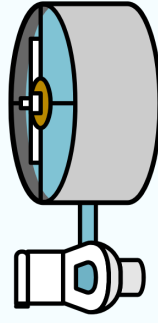
Utilities pump or divert water from its source to transport it to treatment facilities.



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## Users

**Commercial:** Industry, agriculture, animal operations, healthcare, etc.



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## Treatment

Water goes through a series of steps:

- **Coagulation**
- **Flocculation**
- **Sedimentation**
- **Filtration**
- **Corrosion Control**
- **Disinfection**

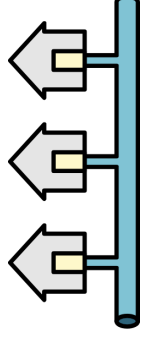
Each play important roles to remove unwanted particles, kill harmful microorganisms, and prepare the water to travel through pipes.

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## Pump to User

Treated water is transported through pipes to users. These pipes are often hidden underground.

A large pipe called the **main line** takes water most of the way. Then, smaller lateral lines take water to the end user.



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## Wastewater Treatment

Sewage is **99.94%** water, but the other 0.06% contains pathogens, nutrients, minerals, and metals.

Treatment removes unwanted particles by letting physical particles settle out, adding microorganisms to consume organic matter, and killing pathogens with light or chemicals.

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## Release Back to Source

Once the wastewater has been cleaned, it can be released back into the environment under a discharge permit.

The NC Department of Environmental Quality currently manages **2,080** active wastewater discharge permits for surface water across North Carolina.

