



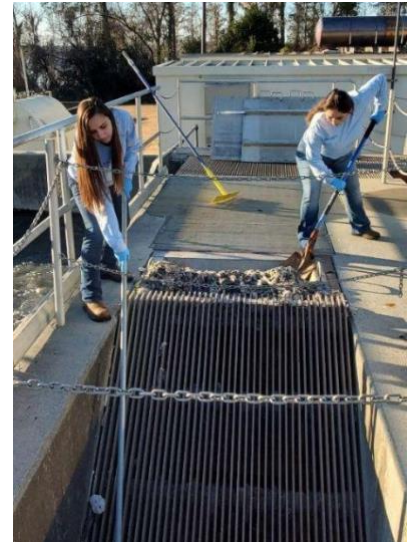
## What do Water and Wastewater Systems Operators Do?

Water and wastewater treatment plant and system operators manage a system of machines, often using control boards to transfer or treat water or wastewater. They must pay close attention to safety procedures because of hazardous conditions, such as slippery walkways, the presence of dangerous gases, and malfunctioning equipment. Operators are trained in emergency management procedures and use safety equipment to protect their health, as well as that of the public.

### Some Duties Include:

Water and wastewater treatment plant and system operators typically do the following:

- Add chemicals, such as ammonia or chlorine, to disinfect water or other liquids
- Inspect equipment on a regular basis
- Monitor operating conditions, meters, and gauges
- Collect and test water and sewage samples
- Record meter and gauge readings and operational data
- Document and report test results to regulatory agencies
- Operate equipment to purify and clarify water or to process or dispose of sewage
- Clean and maintain equipment, tanks, filter beds, and other work areas
- Follow U.S. Environmental Protection Agency (EPA) regulations
- Ensure safety standards are met



It takes many steps to get water from natural sources—reservoirs, streams, and groundwater—into people’s houses. Similarly, it is a complicated process to convert the wastewater from drains and sewers into a form that is safe to release into the environment.

The specific duties of plant operators depend on the type and size of the plant. In a small plant, one operator may be responsible for maintaining all the systems. In large plants, multiple operators work the same shifts and are more specialized in their duties, often relying on computerized systems to help them monitor plant processes.

Water and wastewater treatment plant and system operators must be able to manually operate the equipment if there is a plant malfunction due to power outages or electrical issues.



**Water treatment plant and system operators** work in water treatment plants. Fresh water is pumped from wells, rivers, streams, or reservoirs to water treatment plants, where it is treated and distributed to customers. Water treatment plant and system operators run the equipment, control the processes, and monitor the plants that treat water to make it safe to drink.

**Wastewater treatment plant and system operators** remove pollutants from domestic and industrial waste. Used water, also known as wastewater, travels through sewer pipes to treatment plants where it is treated and either returned to streams, rivers, and oceans, or used for irrigation.

Water and wastewater treatment plant and system operators need long-term on-the-job training and in class study to become fully qualified. Water and wastewater treatment are complex processes. In the NCRWA Registered Apprenticeship Program, trainees, while being paid, learn their skills on the job under the direction of an experienced operator/mentor. The trainees learn by observing and doing routine tasks, such as recording meter readings, taking samples of wastewater and sludge, and performing simple maintenance and repair work on plant equipment. They also learn about industrial safety and how to use personal protective equipment or PPE.

Larger treatment plants usually combine this on-the-job training with formal classroom or self-paced study programs. As plants get larger and more complicated, operators need more skills before they are allowed to work without supervision.



### **Licenses, Certifications, and Registrations**

Water and wastewater treatment plant and system operators must be licensed by the state in which they work. Requirements and standards vary widely depending on the state.

State licenses typically have multiple levels, which indicate the operator's experience and training. Although some states will honor licenses from other states, operators who move from one state to another may need to take a new set of exams to become licensed in their new state.

### It Helps To...

Enjoy the sciences, math, and computers. You also need to stay calm in an emergency and work well under pressure, and comfortable using machines/computers, and tools.

### Did You Know?

The government establishes standards for clean water, and operators must keep up with these regulations.



### Career Outlook

Government economists expect jobs for water- and wastewater-treatment-plant operators to grow about as fast as the average for all careers through 2025. A growing population will require more water- and wastewater-treatment services. New treatment plants and the expansion of current plants will create jobs for operators. Also, operators will be needed to help treatment plants follow new safety and environmental rules.

Job prospects are excellent, not only because of job growth but also because many of these workers will retire soon.

For more information about the North Carolina Rural Water Association Registered Apprenticeship for water and wastewater operators, visit: [www.ncrwa.org](http://www.ncrwa.org) or email: [apprenticeship@ncrwa.org](mailto:apprenticeship@ncrwa.org)

Applications can be submitted at: <https://apprenticeship.nrwa.org/>

