

Water and Wastewater Treatment Plant and System Operators

SOC: 51-8031 • Career Profile Report

■ Key Facts

\$58,260

Median Salary

8,700

Employment

-7.0%

Growth Rate

■ Requirements & Salary Range

Education: High school diploma

■ Automation Risk Assessment

Medium Risk - 38.0% probability of being automated in the next 10-20 years.

This job has some routine elements but still requires human judgment and interaction.

■ Work-Life Balance

7.8/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.4/10	Investigative	5.0/10
Artistic	3.8/10	Social	4.6/10
Enterprising	4.0/10	Conventional	8.0/10

■ Top Skills Required

Critical and analytical thinking skills, Computer skills, Detail oriented, Math skills, Mechanical skills, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Water and Wastewater Treatment Plant and System Operators are essential infrastructure professionals who operate and maintain **systems that make drinking water safe and treat wastewater before it is returned to the environment**. Their work protects public health, supports environmental sustainability, and ensures communities have reliable access to clean water every day.

This career is well suited for individuals who are technically minded, safety-conscious, and interested in hands-on work that directly benefits public health and the environment.

What Do Water and Wastewater Treatment Operators Do?

Operators monitor, control, and maintain treatment processes to meet health and environmental standards.

Common responsibilities include:

- Operating pumps, valves, and treatment equipment
- Monitoring water quality and system performance
- Collecting and testing water and wastewater samples
- Adjusting chemical levels and treatment processes
- Inspecting equipment and performing routine maintenance
- Responding to system alarms, leaks, or malfunctions
- Maintaining detailed logs and compliance records

Types of Treatment Systems

Operators may work with different water systems depending on facility type:

- Drinking Water Treatment Plants: Treat raw water to make it safe for consumption.
- Wastewater Treatment Plants: Remove contaminants from sewage and industrial wastewater.
- Water Distribution Systems: Manage storage tanks and pipelines delivering clean water.
- Collection Systems: Oversee sewer systems and pumping stations.

Skills and Abilities Needed

This role combines mechanical skills with scientific and regulatory knowledge.

Core Professional Skills

Personal Qualities That Matter

Education and Certification Pathway

Requirements vary by state and system size but typically include:

- High School Diploma or Equivalent: Minimum requirement
- On-the-Job Training: Learning system-specific operations
- State Certification or Licensure: Required to operate treatment systems
- Technical or Community College Coursework (common): Water technology or environmental systems
- Continuing Education: Required to maintain certification

Where Do Water and Wastewater Treatment Operators Work?

Operators are employed in public utilities and industrial facilities:

- Municipal Water and Sewer Utilities
- Rural and Regional Water Districts
- Industrial and Manufacturing Facilities

- Private Utility Companies
- Military or Government Installations

Work environments include control rooms, laboratories, and outdoor facilities.

How Much Do Water and Wastewater Treatment Operators Earn?

Earnings vary by certification level, system complexity, and location:

- Entry-Level Operators: Typically earn solid skilled-trade wages
- Certified or Senior Operators: Often earn higher pay
- Supervisory or Chief Operators: May earn more with added responsibility

Compensation often includes benefits, overtime, and long-term job stability.

Is This Career Difficult?

This career is technically demanding and responsibility-heavy. Operators must ensure water quality meets strict standards 24/7, often working rotating shifts or responding to emergencies. The challenge lies in maintaining precision, safety, and compliance while managing complex systems.

Who Should Consider This Career?

This career may be a strong fit if you:

- Want a hands-on role that protects public health
- Enjoy mechanical systems and applied science
- Are detail-oriented and dependable
- Prefer practical, mission-critical work
- Want a stable career with strong community impact

How to Prepare Early

- Take chemistry, biology, and math courses
- Learn basic mechanical and electrical concepts
- Develop careful documentation and safety habits
- Explore water technology or environmental systems programs
- Seek entry-level utility or plant operator roles

Water and wastewater treatment operators safeguard one of society's most vital resources—using technical skill, vigilance, and responsibility to ensure clean water flows to homes and treated water returns safely to the environment every single day.