WATER OPERATOR CERTIFICATION EXPLAINED

#NoOperatorNoWater

American Water Works Association
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Certified water operators are a critical part of providing an adequate and safe supply of water.

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"I became a water operator to:

Serve my community
Protect public health
Care for the environment
Face new challenges
Provide clean water for everyone
Learn something new
VALUE OF CERTIFICATION
A LOOK AT THE JOB

WHAT THEY DO

WATER TREATMENT OPERATORS
are responsible for operating and maintaining a water treatment plant, including maintenance of equipment, quality control, and day-to-day activities.

WATER DISTRIBUTION OPERATORS
are responsible for operating and maintaining a water distribution system.

WASTEWATER TREATMENT OPERATORS
are responsible for operating and maintaining a wastewater treatment plant.

Water and wastewater operators can perform a wide variety of tasks:

• Inspect equipment
• 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

*Based on US Department of Labor, Bureau of Labor Statistics Occupational Outlook Handbook, 2018
A PROMISING FIELD

The US Bureau of Labor Statistics shares that in the upcoming decade, more than 7,000 certified operators will be needed.

WORK ENVIRONMENT

Water and wastewater treatment plant and system operators held about 119,200 jobs in 2016. The largest employers of water and wastewater treatment plant and system operators were as follows:

| LOCAL GOVERNMENT (excluding education and hospitals) | 77% |
| UTILITY | 12% |
| MANUFACTURING | 4% |

*Based on US Department of Labor, Bureau of Labor Statistics Occupational Outlook Handbook, 2018
<table>
<thead>
<tr>
<th>Population Size</th>
<th>Water Treatment Operator</th>
<th>Water Distribution/Collection Operator</th>
<th>Wastewater Treatment Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Associate</td>
<td>Intermediate</td>
<td>Senior</td>
</tr>
<tr>
<td>50,000–100,000</td>
<td>$37k–$54k</td>
<td>$45k–$64k</td>
<td>$50k–$71k</td>
</tr>
<tr>
<td>25,000–50,000</td>
<td>$37k–$51k</td>
<td>$43k–$59k</td>
<td>$48k–$67k</td>
</tr>
<tr>
<td>10,000–25,000</td>
<td>$37k–$51k</td>
<td>$43k–$57k</td>
<td>$48k–$67k</td>
</tr>
<tr>
<td></td>
<td>First–Level</td>
<td>Intermediate</td>
<td>High–Level</td>
</tr>
<tr>
<td>Typical Years of Experience</td>
<td>0–2</td>
<td>2–4</td>
<td>5+</td>
</tr>
</tbody>
</table>

*Salary ranges based on AWWA’s 2017 Compensation Survey*
GETTING CERTIFIED
CERTIFICATION PROCESS

WATER OPERATORS MUST PASS A CERTIFICATION EXAM FOR THEIR SPECIFIC CERTIFICATION LEVEL.

01 Visit Association of Boards of Certification (ABC) website to find your certification contact information.

02 Check your eligibility (exam requirements, applications, training programs, etc.)

03 Check for upcoming testing dates.

04 File for your exam.

Currently, operator certification is offered at a state or province level, but testing criteria are similar across geographic locations.
**HOW THE EXAM WORKS**

- **70%** Minimum score required to pass the exam*
- **$75–$100** Average cost of the exam*
- **Plan for 3–6 months of preparation**
- **Take several practice exams**

**WHAT THE EXAM COVERS**

Each question tests one of three skills: Comprehension, Application, or Analysis

*If you are currently employed with a utility, check with them for testing requirements, cost coverage, and available resources. Requirements may vary by state.*
CERTIFICATION REQUIREMENTS

AWWA Water System Operations (WSO) certification study guides all meet Association of Boards of Certification (ABC) Requirements and align with ABC’s Need-to-Know Criteria.

<table>
<thead>
<tr>
<th>CLASS</th>
<th>EDUCATION</th>
<th>EXPERIENCE</th>
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<tbody>
<tr>
<td>CLASS I</td>
<td>High school diploma, GED, or equivalent</td>
<td>1 year of acceptable experience</td>
</tr>
<tr>
<td>CLASS II</td>
<td>High school diploma, GED, or equivalent</td>
<td>3 years of acceptable experience</td>
</tr>
<tr>
<td>CLASS III</td>
<td>High school diploma, GED, or equivalent; 900 contact hours of post high school education</td>
<td>4 years of acceptable experience, including 2 years of direct responsible charge</td>
</tr>
<tr>
<td>CLASS IV</td>
<td>High school diploma, GED, or equivalent; 1,800 contact hours of post high school education</td>
<td>4 years of acceptable experience, including 2 years of direct responsible charge</td>
</tr>
</tbody>
</table>

**VERY SMALL WATER SYSTEMS**

<table>
<thead>
<tr>
<th>EDUCATION</th>
<th>EXPERIENCE</th>
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<tbody>
<tr>
<td>High school diploma, GED, or equivalent, six contact hours of education in a very small water system</td>
<td>Six months of acceptable operating experience in a very small water system or high utility</td>
</tr>
</tbody>
</table>

**WHAT IF MY STATE DOESN’T FOLLOW ABC?**
STATE RESOURCES

Requirements for operator certification and exam details differ slightly by state. Select your state below for more specific information:

Alabama | Maine | Oregon
Alaska  | Maryland | Pennsylvania
Arizona | Massachusetts | Rhode Island
Arkansas | Michigan | South Carolina
California | Minnesota | South Dakota
Colorado | Mississippi | Tennessee
Connecticut | Missouri | Texas
Delaware  | Montana | Utah
Florida   | Nebraska | Vermont
Georgia   | Nevada | Virginia
Hawaii    | New Hampshire | Washington
Idaho     | New Jersey | West Virginia
Illinois  | New Mexico | Wisconsin
Indiana   | New York | Wyoming
Iowa      | North Carolina
Kansas    | North Dakota
Kentucky  | Ohio
Louisiana | Oklahoma
HOW AWWA CAN HELP YOU
# CERTIFICATION RESOURCES

**SHARPEN YOUR SKILLS**
- **Operator Math Made Easy**
- **Operator Chemistry Made Easy**

**PREP AND STUDY**
- **Secrets to Success: How to Prepare for Operator Certification**

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<td>WSO Water Treatment, Grade 1</td>
<td>AWWA Water Operator Certification Exam Prep</td>
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<tr>
<td>WSO Water Treatment, Grade 2</td>
<td>WSO Water Treatment, Grade 3 &amp; 4</td>
<td>WSO Water Treatment, Grade 1 Clips</td>
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<tr>
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<td>WSO Water Treatment, Grade 2 Clips</td>
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<td>Math for Distribution System Operators</td>
<td>WSO Water Distribution, Grades 1 &amp; 2 Clips</td>
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<td>Wastewater Operator Certification Study Guide</td>
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Download AWWA's free Exam Prep App to take studying on the go
OTHER RESOURCES

FROM AWWA:

Operator Licensing Requirements Across the United States

This project was commissioned by the American Water Works Association (AWWA) Workforce Strategies Committee and funded by the AWWA Technical and Educational Council. Report prepared by Jeff Oxenford, Oxenford Consulting LLC and Jim Ginley, Jim Ginley Consulting LLC. February 2018

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MORE:

ABC
Association of Boards of Certification

EPA
United States Environmental Protection Agency

Water Environment Federation
the water quality people®

WaterOperator.org
AFTER CERTIFICATION
OPERATOR RESOURCES

ON–THE–JOB TRAINING

General
- EL7 Basic Mathematics
- WSO Source Water Protection
- WSO Water Loss Control

Water Treatment Operator
- Water Treatment Operator Training Handbook, 3rd Edition
- Water Treatment Made Simple for Operators
- Water Treatment Operator Course: Level 1
- Water Treatment Operator Course: Level 2
- Water Treatment Operator Course: Level 3
- EL10 Filtration Basics
- EL229 Membrane Processes
- WSO Membrane Technology

ADVANCE YOUR CAREER

- EL6 Applied Mathematics
- High-Tech Operator: Course 1
- High-Tech Operator: Course 2
- High-Tech Operator: Course 3
- WSO Chlorine Chemistry
- WSO Jar Testing
- WSO Instrumentation and Control
- WSO Coagulation, Flocculation, and Sedimentation
- WSO Turbidity Measurement and Particle Counting
OPERATOR RESOURCES

ON-THE-JOB TRAINING

Water Distribution/Collection Operator
- EL13 Distribution Service to Customers
- EL227 Backflow Prevention and Cross-Connection Control
- EL208 Fire Hydrant Basics for Pressurized Water System
- EL206 Why Are Water Service Lines Important
- WSO Maintaining a Distribution and Storage System

ADVANCE YOUR CAREER
- EL69 Advanced Disinfection of Pipeline and Storage Facilities
- EL68 Advanced Metering Infrastructure for the Water Industry
- EL24 Disinfection of Pipelines and Storage Facilities
- EL14 Distribution System Materials and Equipment
- EL15 Water Main Installation
- WSO Pumps
- WSO Flushing and Cleaning

Wastewater Treatment Operator
- Wastewater Microbiology: A Handbook for Operators
- AWWA Wastewater Operator Field Guide
- EL9 Disinfection Basics
- EL210 Pumping and Pressure Sewer Systems
- WSO Disinfection
- WSO Disinfection By-products
- WSO Filtration
OPERATOR RESOURCES

HOW AWWA MEMBERSHIP CAN HELP

Stay up-to-date.
AWWA membership gives you access to the latest news and information on the water sector, including a subscription to Opflow, which will:

• Keep you informed on best practices in the water sector
• Provide hands-on guidance to improve utility operations
• Offer in-depth articles on important topics
• Test your knowledge with certification quiz questions

Connect with other Water Professionals.
Talk with your peers at local events and meet water-sector leaders at conferences across North America. Take advantage of the opportunities to share best practices and learn what others have done when they have confronted a crisis.

Section Membership is your local connection to AWWA and provides:
Local events and continuing education opportunities | Region-specific news and information | Ways to directly influence local water issues | Networking opportunities in your community | Opportunity for training and education funding through the One AWWA Operator Scholarship
CONTINUING EDUCATION (CE) CREDITS

CE Credits are required to renew licenses. States and provinces use different labels, but AWWA awards CE Credits in alignment with the International Association for Continuing Education and Training.

AWWA OFFERS A FREE CE CREDITS TRANSCRIPT REPORTING TOOL

Store your CE Credits all in one place with the CE Credit reporting tool. You can print your AWWA certificates, sorting by program or date range (going back SEVEN years). You can even use the transcript as an official document!
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#AWWA

awwa.org/waterneedsoperators