U.S. Water Workforce Overview

An exploration of water workforce demographics, job opportunities, and industry needs

August 2022
### The Infrastructure Investment and Jobs Act (IIJA) Provides $55 Billion for Water Infrastructure

<table>
<thead>
<tr>
<th>Safe Drinking Water</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking Water State Revolving Fund</td>
<td>$11.7 billion</td>
</tr>
<tr>
<td>SRF Lead Service Line Replacement</td>
<td>$15 billion</td>
</tr>
<tr>
<td>SRF Emerging Contaminants</td>
<td>$4 billion</td>
</tr>
<tr>
<td>Water Infrastructure Improvements for the Nation Grants</td>
<td>$5 billion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clean Water</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Water State Revolving Fund</td>
<td>$11.7 billion</td>
</tr>
<tr>
<td>Clean Water SRF Emerging Contaminants</td>
<td>$1 billion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Water Protection</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic Programs</td>
<td>$1.7 billion</td>
</tr>
<tr>
<td>National Estuary Program, Gulf Hypoxia Program, &amp; more</td>
<td>$267 million</td>
</tr>
</tbody>
</table>

- The law also includes several programs to improve sustainability and resiliency including:
  - $125 million to provide grants to communities to pay for water recycling projects
  - $120 million for projects that create or improve waste energy systems
  - $125 million to help communities strengthen the resiliency of their publicly owned treatment works against natural hazards

**Source**: National Governors Association, WaterWorld
Key Water Workforce Demographic Information

PERCENTAGE, 2022

• **1.7 million** workers are directly involved in “designing, constructing, operating, and governing” U.S. water infrastructure
• Water operators, mechanics, machinists, electricians, and instrument technicians are essential to utility work
• Administrative, financial, and management occupations, such as customer service representatives and human resource specialists, also support water utility operations
• More than half of all water and wastewater utilities nationally have only one or two employees and about 85% have three or fewer

In May 2021, Water and Wastewater Employed 121,150 Treatment Plant and System Operators

Total Employment for Water and Wastewater Treatment Plant and System Operators by State

Concentration of Jobs in Water and Wastewater Treatment Plant and System Operators

A location quotient $>1$ indicates the occupation has a higher share of employment than average, and a location quotient $<1$ indicates the occupation is less prevalent in the area than average.

Median Wage for Water and Wastewater Treatment Plant and System Operators by State

Demographics of Water and Wastewater Treatment Plant and System Operators

**Education level of Water and Wastewater Treatment Plant and System Operators**

- High school diploma or equivalent: 37%
- Some College, no degree: 31%
- Associate's Degree: 13%
- Bachelor's Degree: 13%
- Less than high school diploma: 3%
- Master's Degree: 2%
- Doctoral or Professional Degree: 0%

**Age of Water and Wastewater Treatment Plant and System Operators**

- 24 or younger: 0%
- 25-34: 10%
- 35-44: 20%
- 45-54: 30%
- 55-64: 30%
- 65 or older: 10%
Employment of Water Workers by Organization Type

Respondents to the 2021 American Water Works Association State of the Water Industry survey by organization type

- Combined water/wastewater utility: 31.3%
- Drinking water utility: 24.8%
- Manufacturer: 15.9%
- Consulting firm/consultant: 8.0%
- Regulatory Authority/regulator: 5.2%
- Non-utility government: 4.0%
- Other: 3.3%
- Wastewater utility: 3.0%
- University/educational organization: 2.0%
- Technical services/contractor: 2.8%
- Nonprofit organization: 1.9%
- Water wholesaler: 1.3%
- Stormwater utility: 0.3%

Source: American Water Works Association
Spotlight: Traditional and Non-traditional Water System Operator Career Pathways*

**Traditional pathways**
1. Receive high school diploma or GED
2. Become maintenance worker or laborer
3. Gain significant years of experience
4. Become operator in training
5. Receive financial assistance from employer to gain the certification necessary to advance up a graded scale
6. Become fully licensed chief operator

**Non-traditional pathways**
- Weeks-long water “boot camps”
- Pre-apprenticeship programs and internships
- Water training through vocational high schools, community colleges, and adult education programs

*Abbreviated summaries of example pathways*
Hourly Difference in Pay for Water and Wastewater Treatment Plant and System Operators Compared to State Average

Water workers, on average, earn a lower hourly wage ($25.15/hr) than workers nationally ($28.01/hr)

($) - negative difference from state average
$ - positive difference from state average

SOURCE: Bureau of Labor Statistics