

A blue-tinted photograph of industrial machinery, possibly a large pipe or valve, serves as the background for the top portion of the slide.

# Workforce Planning

Glenn Barnes

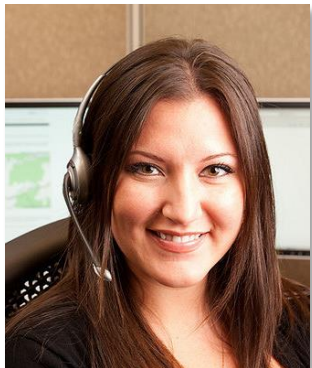
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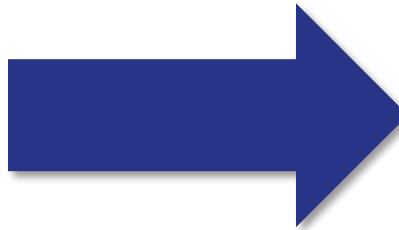
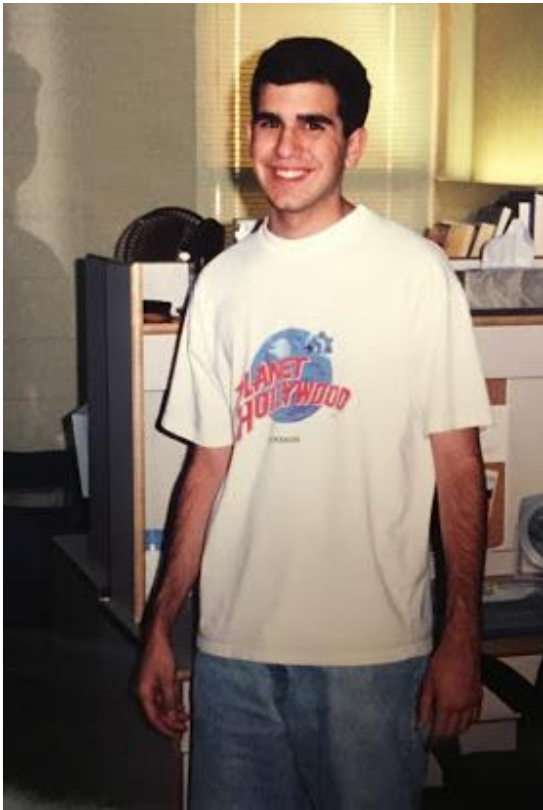
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[glennbarnes@sog.unc.edu](mailto:glennbarnes@sog.unc.edu)

# Water Workforce



# Workforce Wears Out





# Two Major Workforce Goals

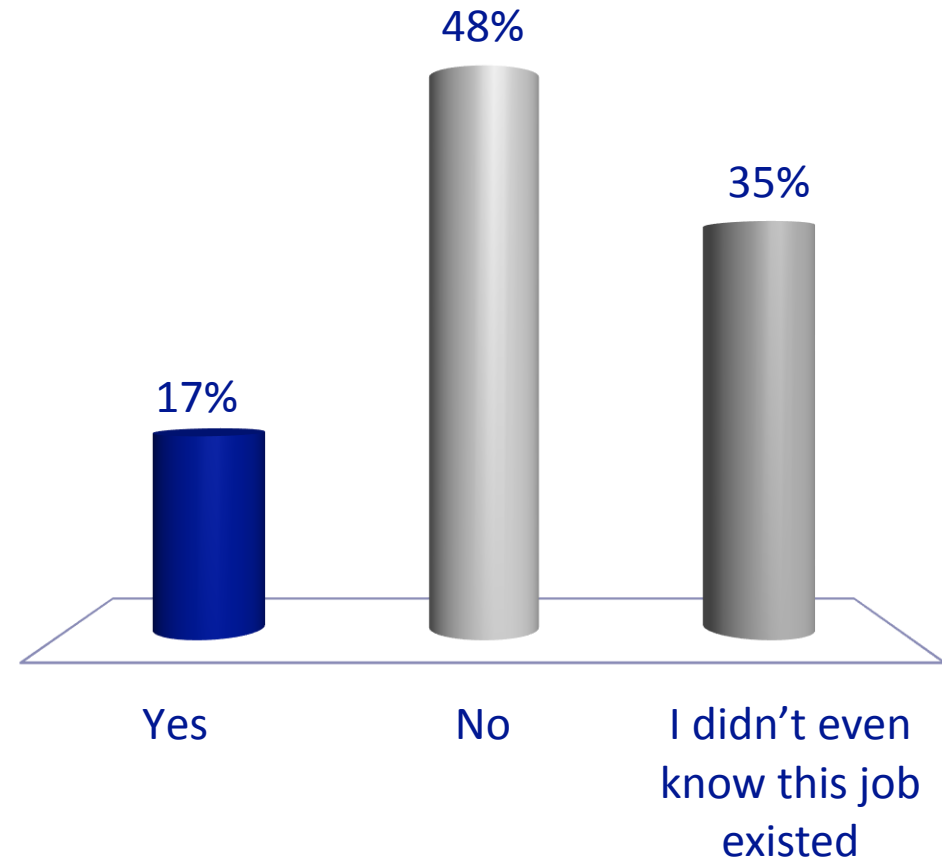
- Keep your best people around as long as you can
- Bring in great new people to the organization



# Some questions to start...

# Did you grow up wanting to be work for a water system?

- A. Yes
- B. No
- C. I didn't even know this job existed



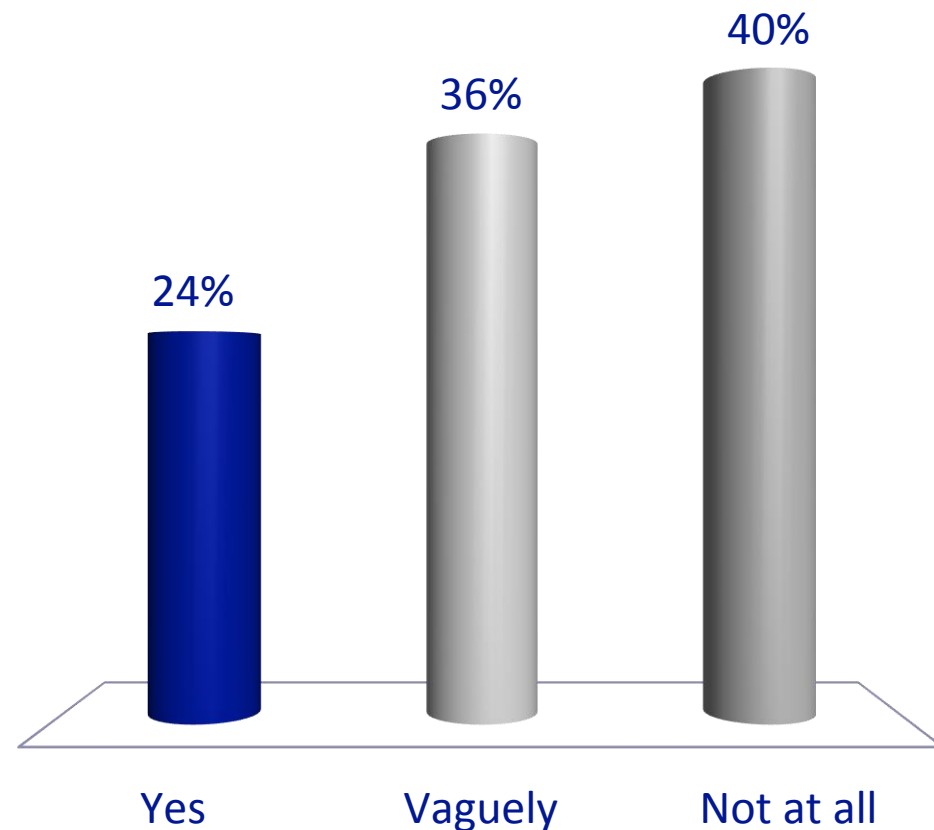


# Who Works in Water

- All of us “work in water”
- How did you get into the water business? What is your story?

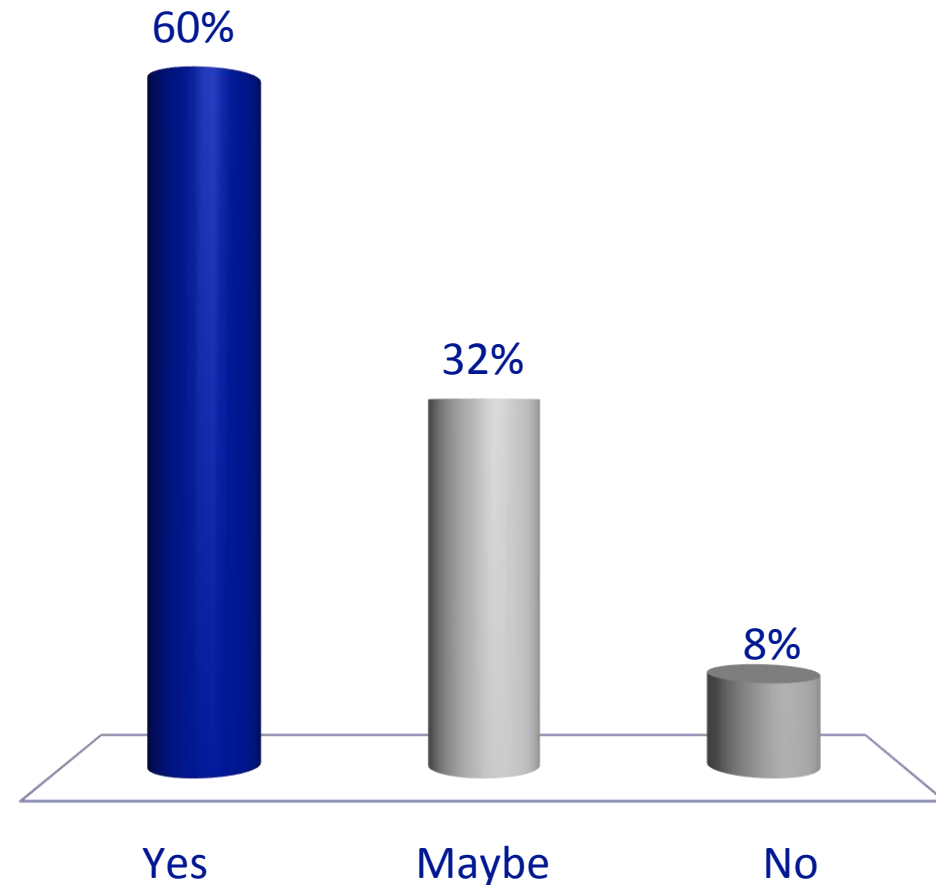
# Do your friends and family really understand what you do for a living?


- A. Yes
- B. Vaguely
- C. Not at all



# Can you see yourself working in water for the rest of your career?

- A. Yes
- B. Maybe
- C. No

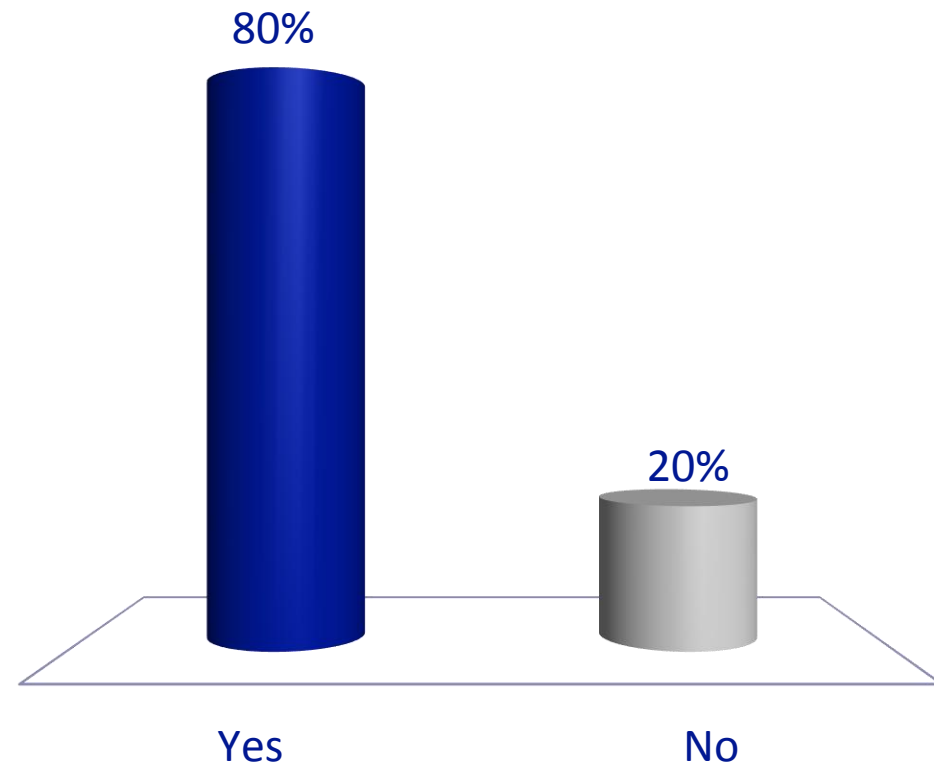




# Are you confident that there is someone working for your organization now that could replace you?

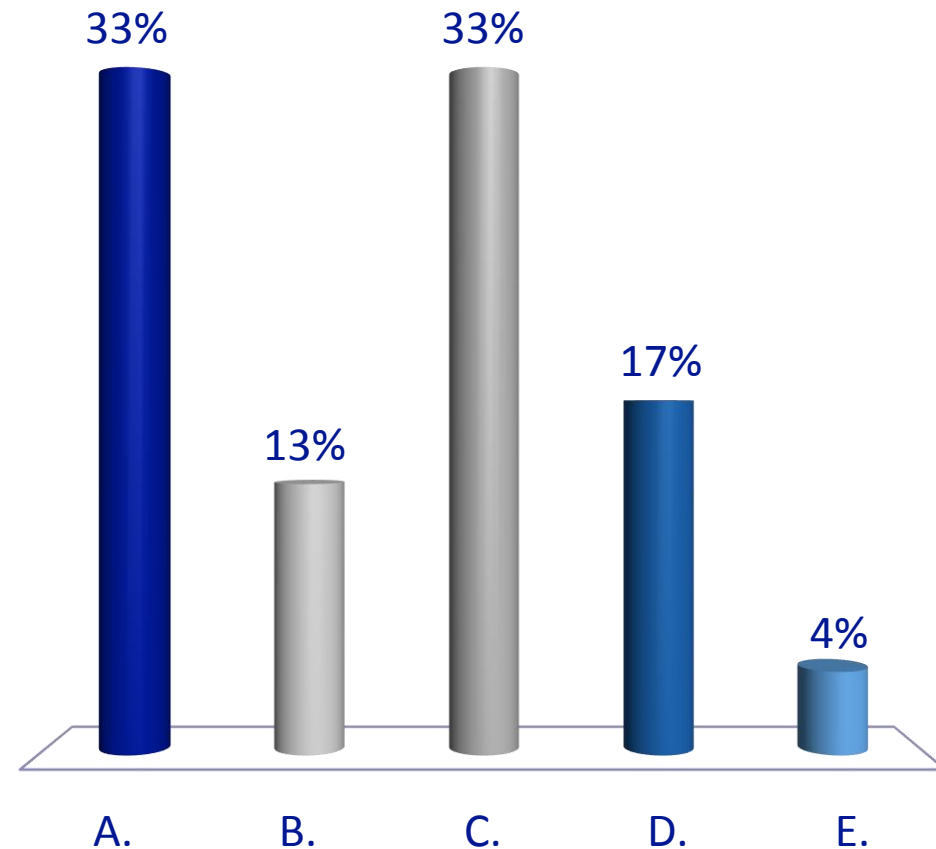
A. Yes

B. No



# Your two biggest workforce concerns?

- A. Finding high quality new employees
- B. Upcoming retirements
- C. Keeping good employees
- D. Keeping up with technology
- E. Operator certification requirements





# Keep Your Best Employees



What makes you want to stay in your job?



# Succession Planning



# Knowledge Management



# But no matter how good you are at succession planning...

Your  
employees  
will leave,  
eventually.

Guaranteed.

# Human Capital Criticality





# Hire Great New People

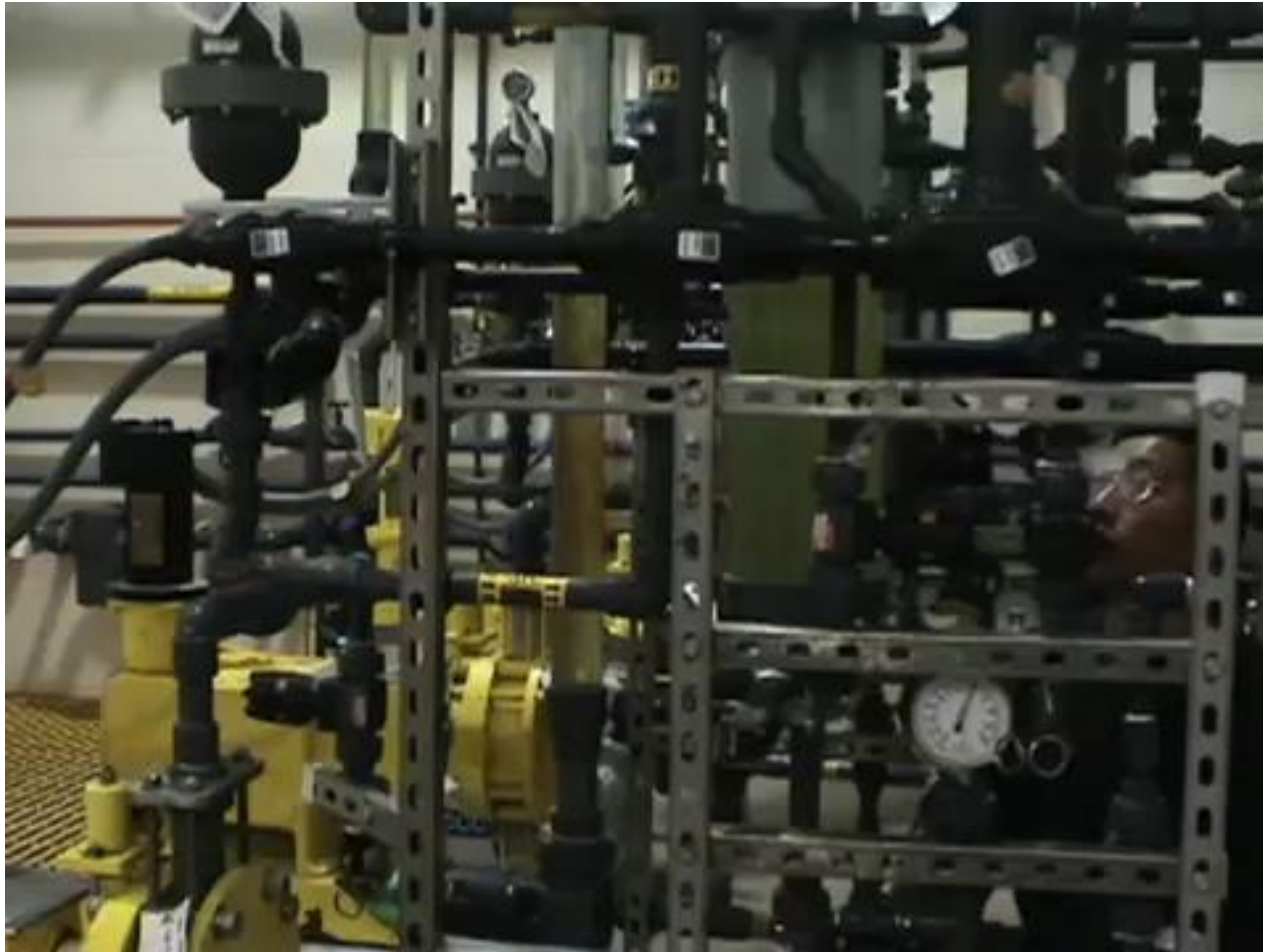


**WE ARE  
HIRING**

COME CHANGE THE WORLD WITH US



# Job Skills Needed



Andrew Kwan, East Bay Municipal Utility District, CA

<https://www.youtube.com/watch?v=ORZlhncbb6Y>

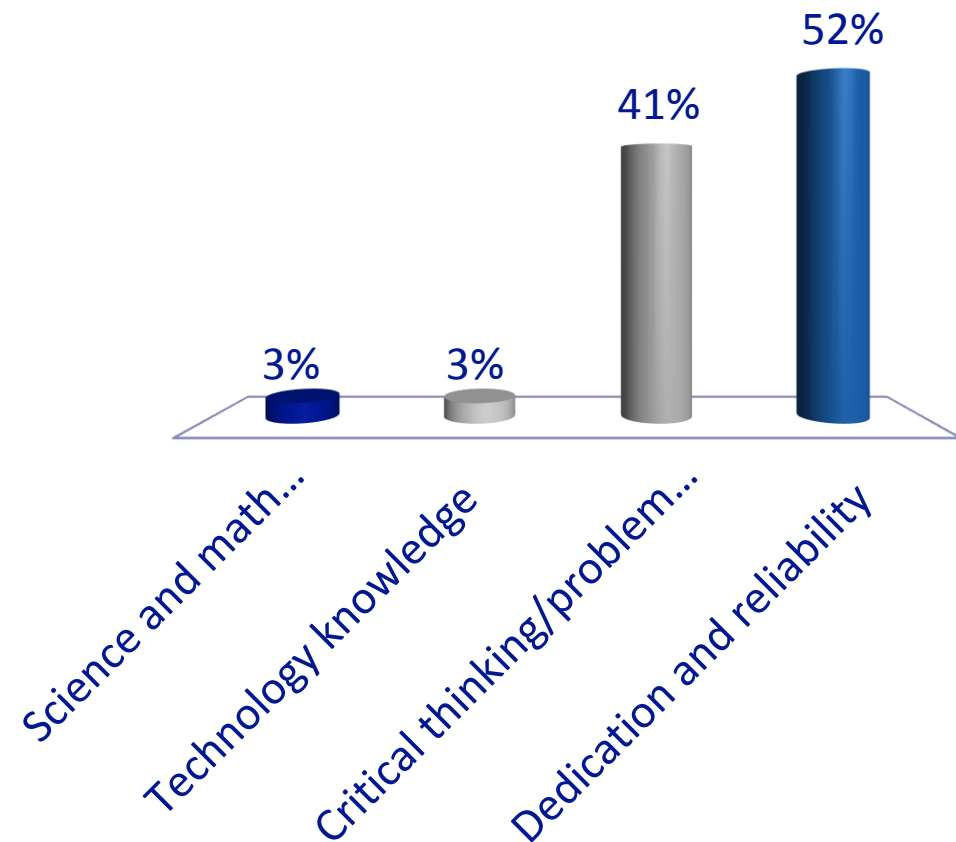


# What knowledge, skills and abilities are needed today?

- Think across the board—not just for operators. Think about everyone who tied to your water system

# What is the hardest KSA to find?

- A. Science and math knowledge
- B. Technology knowledge
- C. Critical thinking/problem solving skills
- D. Dedication and reliability





People are not necessarily aware of jobs in the water sector

It's up to us to explain why this is a good career choice.

# Public Service



Operators say the most satisfying aspect of their work is contributing to the environment and public health

# High Tech Nature



Reverse Osmosis



UV Filtration



SCADA



Solar Power

# Career Benefits





# Keep in mind...

- Even if you don't have key people leaving, you may need workforce development to make sure your current employees keep up with the changing demands of the water sector



“People worry about paying to train staff who then leave...

...But what happens if we don't pay to train them and they stay?”



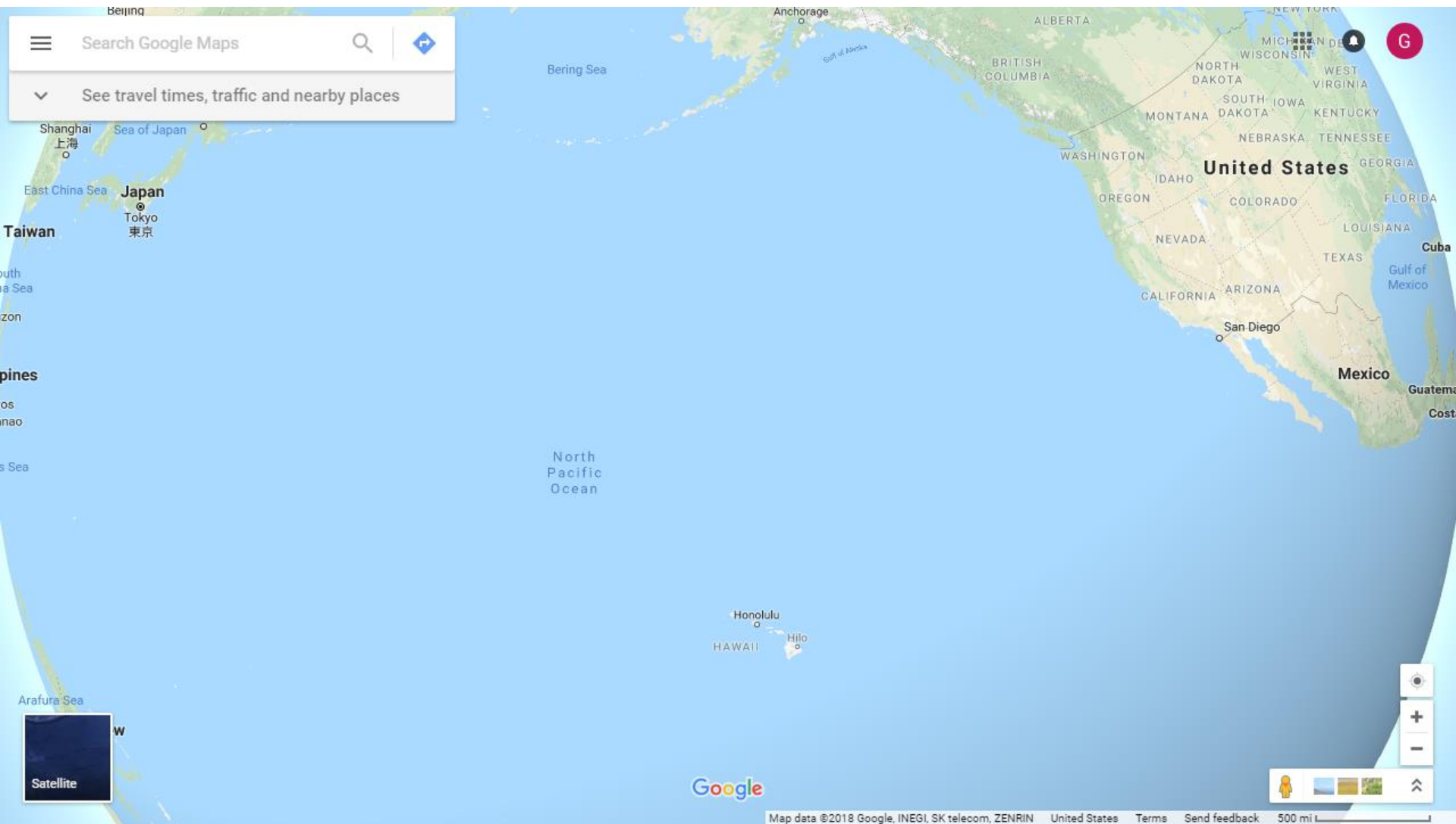
# How to Find Good Employees



## Local Area Unemployment Statistics

### Unemployment Rates for States, Seasonally Adjusted

	September 2018(P)	
Hawaii	2.2	1
Iowa	2.5	2
Idaho	2.7	3
New Hampshire	2.7	3
North Dakota	2.7	3
Minnesota	2.8	6
Nebraska	2.8	6
Vermont	2.9	8
Virginia	2.9	8
South Dakota	3.0	10
Wisconsin	3.0	10
Colorado	3.1	12
Missouri	3.2	13
Utah	3.2	13
Kansas	3.3	15
Maine	3.3	15
South Carolina	3.3	15
Arkansas	3.5	18
Florida	3.5	18
Indiana	3.5	18
Oklahoma	3.5	18
Massachusetts	3.6	22
Montana	3.6	22
Tennessee	3.6	22
Georgia	3.7	25
North Carolina	3.8	26
Oregon	3.8	26





# Find People With Your Values

## Our Values

Every day, a core set of values guide the Board of Water Supply (BWS) in how we work together to accomplish our mission. The values reflect and reinforce our culture in the delivery of water service to our customers.

- **Personal Responsibility:** We are water professionals who earn and uphold the community's trust every day through our actions and in doing our jobs right.
- **Team Responsibility:** We depend upon and support each other and treat each other with dignity and respect.
- **Organizational Responsibility:** We provide a healthy and safe work environment through cooperation, participation, and shared decision-making.
- **Societal Responsibility:** We provide quality service to our customer with the highest level of courtesy and efficiency.
- **Environmental Responsibility:** We uphold the ***Public Trust*** as thoughtful stewards of Oahu's water resources and the environment.

***Public Trust:** Principle embedded in Hawaii Law that recognizes that water is held in trust by the State of Hawaii for present and future generations.*



*and grow*

# How to Find Good Employees

# Internships

OUR SCHOOLS: Hartford Public High School Summer Interns Learn an Industry and Help to Bolster Future Workforce of Hartford Water Company MDC



OUR SCHOOLS: Hartford Public High School Summer Interns Learn an Industry and Help to Bolster Future Workforce of Hartford Water Company MDC

MDC's *Learn and Earn* is a 4 week paid program that took place this year from July 11, 2016 to August 5, 2016. 9 students from

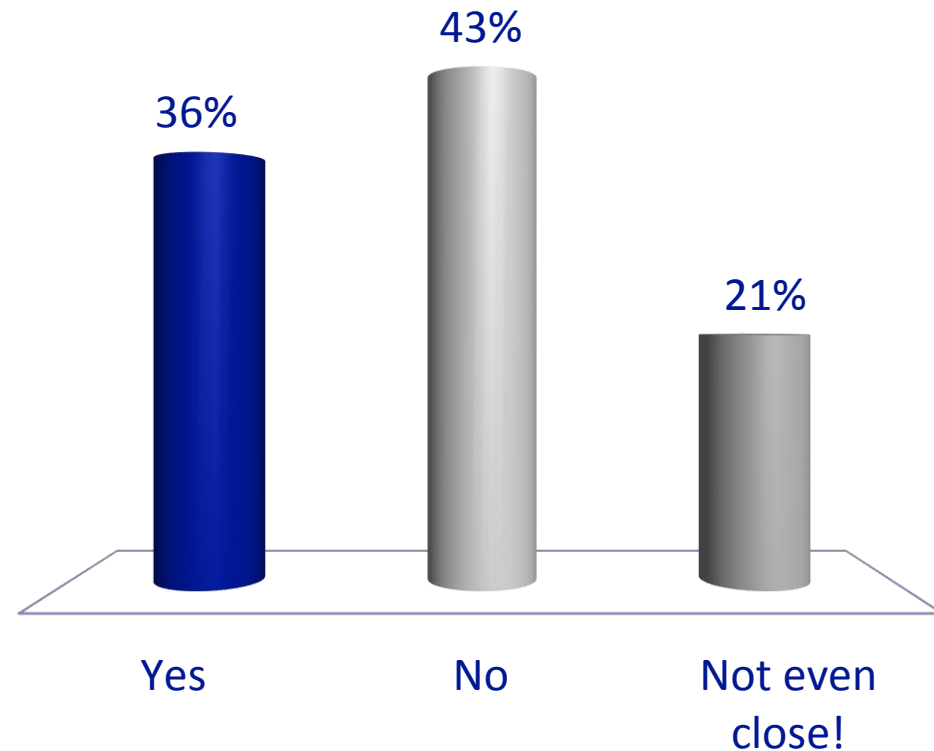


Ray Baral  
Metropolitan District  
Commissioner, CT

“Certainly, we wanted them to be good students, but they didn’t have to be ‘A’ students. The most important thing is that they want to be here and they want to learn.”

# Be honest. Were you an 'A' student?

- A. Yes
- B. No
- C. Not even close!



# Apprenticeship Programs

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## Water & Wastewater Operations Specialist Apprenticeship Programs

Water and Wastewater Operations Specialists are imperative to your community for access to clean drinking water and to ensure wastewater effluent is returned to the environment properly. **But with close to 50% retiring in the next five years, communities will fail to prosper or eventually even exist if replacements aren't put in place AND properly trained.** A growing population and increased demand for water and wastewater treatment services plus an aging workforce will drive employment growth and qualified, certified Operations Systems Specialists will be in high demand.



### WHY APPRENTICESHIP?

Our nationally recognized training program was developed in response to the industry's need to train the next generation of skilled workers and standardize training across the state of Indiana. Once an Apprentice completes this 2 year program and passes an aptitude test given by the State of Indiana, he or she is considered a journey worker and can do tasks unsupervised making this person employable as a Systems Operations Specialist in the Water / Wastewater Industry. [View video...](#)

### Apprentice Benefits

- Earn While You Learn
- Make A Real Difference In The Community

### Utility Benefits

- Proven solution to recruit, train, & retain employees
- Replace retiring workforce

# Apprenticeship Programs

## Seattle Public Utilities

Mami Hara, General Manager/CEO

SERVICES

ENVIRONMENT &  
CONSERVATION

CONSTRUCTION  
& DEVELOPMENT

BUSINESSES &  
KEY ACCOUNTS

MANAGEMENT

STRATEGIC BUSINESS PLAN

SPU & THE ENVIRONMENT

CAREERS

SPU & THE COMMUNITY

MEDIA

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CAREERS

APPRENTICESHIP PROGRAM

DRAINAGE & WASTEWATER

WATER PIPE WORKER

BENEFITS

RESOURCES

## Apprenticeship Program

### Two-year paid program

Earn while you learn as an apprentice at Seattle Public Utilities. If accepted into one of SPU's two-year, on-the-job training programs, you'll receive valuable job skills, excellent pay and attractive benefits. In addition to being full-time employees of SPU, apprentices are required to attend evening classes on their own time. The classes are paid for by SPU. Apprentices are also required to participate in fitness training during the apprenticeship. Learn more about the [Standards of Apprenticeship](#) (pdf) adopted by the City of Seattle.



### Water Pipe Worker Apprenticeship

Assist journey-level Water Pipe Workers in the construction, installation, maintenance, repair, and operation of water mains, transmission pipelines, valves, fire hydrants and water services

# Apprenticeship Programs



State of Hawaii  
**Workforce Development Division**



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## APPRENTICESHIP

### Introduction

For contractors and employers, hiring qualified employees from officially approved, registered apprenticeship programs makes good business sense. By hiring apprentices from an officially approved and registered programs in the State of Hawai'i, contractors and employers are guaranteed a highly skilled and competent workforce that produces consistent and quality results.

### Apprenticeships in Hawai'i

Currently, there are 67 registered program sponsors of various apprenticeable occupations such carpenters, plumbers, and electricians. These apprenticeship programs offer contractors and employers the opportunity to hire quality workers.

To learn more about how you and your organization can benefit from apprenticeship programs, click on the following links:

- [Apprenticeship Recruitment Notices](#)
- [Apprenticeship Benefits](#)

# Apprenticeship Programs



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### TRADES APPRENTICESHIP

#### What is an Apprenticeship?

Apprenticeship is a combination of on-the-job training (OJT) and related classroom instruction under the supervision of a journey-level trade professional. Apprentices receive hands-on experience and apply classroom lessons to their trade. After completing the apprenticeship program, the graduates become skilled trade workers.

#### What are the different skilled trades available?

The following skilled trades available have apprenticeship programs: Pipefitter, Fleet Mechanic III, Line Electrician, Plant Electrical/Electronic Equipment Operator, and Traffic Signal Electrician

#### What are the requirements?

Possession of an appropriate valid driver's license, as required. Some positions require a commercial driver's license B prior to completion of the Trades Apprentice Program.

#### How do I apply?

To check if a Trades Apprentice recruitment is currently open, please visit our Job Opportunities website. If the recruitment is not available, you may submit a [Job Interest Card](#)\* to receive an email notice when the City is accepting applications for Trades Apprenticeship.

# Community Colleges



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## TRAD8600 - Water/Wastewater Treatment Entry Level Plant Operator Training



Maui College - EdVenture

### Course Description

Sponsored by Hawaii Energy, this class prepares you to begin a career in the Water and Wastewater Industry. Participants who are already working as operators will gain an expanded knowledge of how Water/Wastewater Treatment Plants operate and are maintained.

Thank you for your interest in this course. Unfortunately, the course you have selected is currently not open for enrollment. Please complete a Course Inquiry so that we may promptly notify you when enrollment opens.

[Request Information](#)

### Learner Outcomes

1. Apply basic operator math and basic science
2. Describe how treatment plants operate and identify the different types of plants
3. Describe how distribution and collection systems work
4. Explains the basic terminology that is required to communicate with operators
5. Demonstrates knowledge of the basic rules of safety and identifies what personal

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## Water Treatment

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### Water and Wastewater Utility Operator Certificate of Achievement

The Water/Wastewater Technology degree program is designed to prepare students for employment by municipal drinking departments or industrial treatment facilities. Careers in Water/Wastewater Technology generally involve the administration, operation and maintenance of both drinking water and wastewater facilities as well as distribution and collection systems.

Required Courses		Units
ENVTC 20	Water Distribution System O&M	3
ENVTC 21	Water Treatment Plant Operation	3
ENVTC 22	Water Distribution Systems Level II	3
ENVTC 23	Water Treatment Plant Operation Level II	3
ENVTC 24	Wastewater Treatment Plant Operation Level I	3
ENVTC 25	Wastewater Treatment Plant Operation Level II	3
Total Units		18

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Employment  
Program  
Disclosure**

Drinking Water  
Technology Certificate of

# Post High School Training



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:: City of Riverside T3 Program – Technical Trades Training

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## So you're a senior in High School – What's Next?

What's next... is your future! And it is never too soon to start thinking seriously about what type of work you want to do in your life, and how you can obtain it.

Opportunities surround you – just like our T3 Program. T3 is a vocational program waiting to be taken advantage of by just the right student. It provides high school students a chance to continue their education, learn a skill, and make a good living.

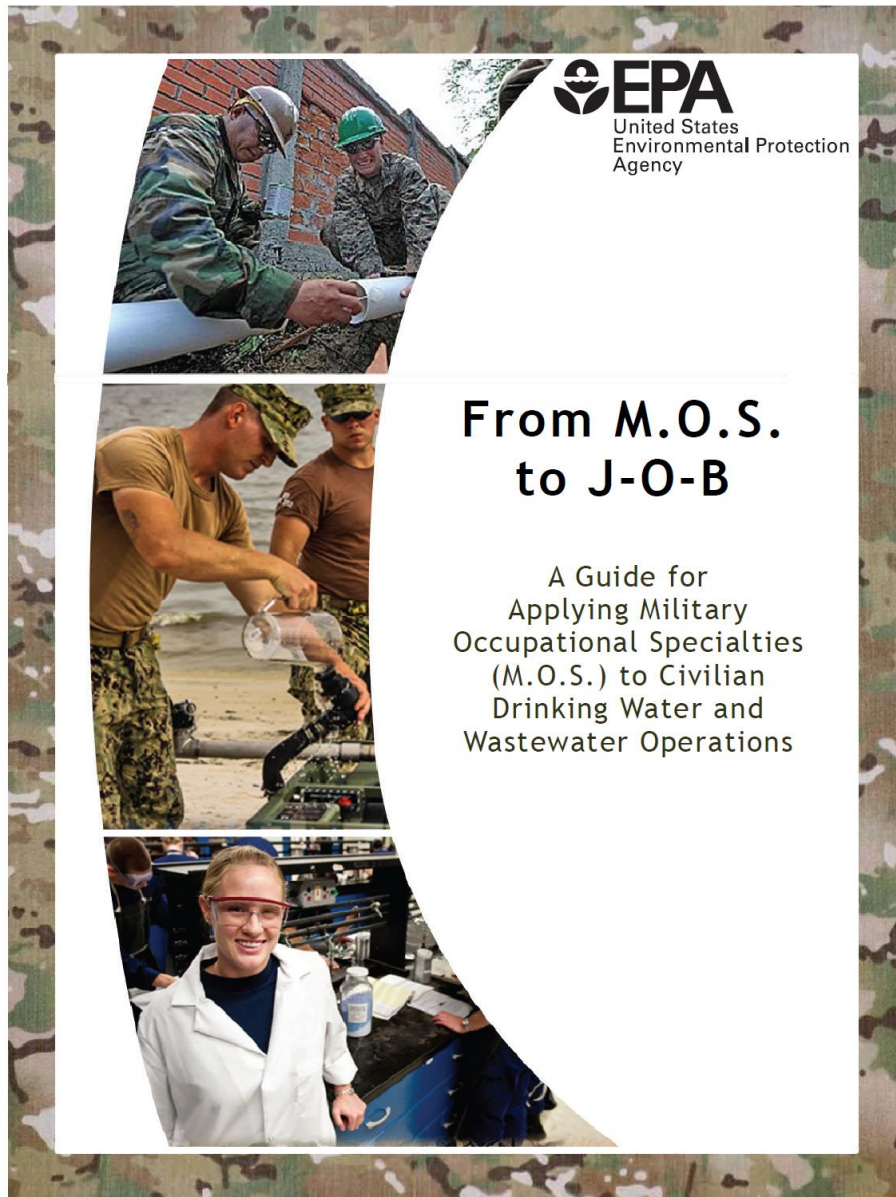


## Program Details

Up to two graduating students from Norte Vista School and up to two students from Ramona High School in Riverside may be selected to participate in the two-year T3 training program.

# Veterans of Uniformed Services





# EPA guide for applying Military Occupational Specialties (M.O.S.) to civilian drinking water and wastewater operations

[https://www.epa.gov/sites/production/files/2015-11/documents/from\\_mos\\_to\\_job.pdf](https://www.epa.gov/sites/production/files/2015-11/documents/from_mos_to_job.pdf)

# Employee Referral Program



Money



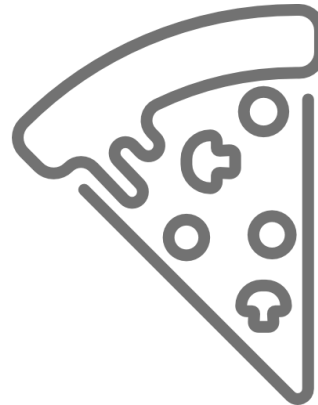
Extra Days Off



Recognition



Event Tickets



Food & Drink



Departmental  
Competition

# TOURS


The Board of Water Supply's (BWS) mission statement, "Water for Life" addresses the need to ensure continued access to safe and dependable water supplies now and into the future. To meet this mission, the BWS offers public education programs to help others understand and learn about Oahu's water resources.



## Community

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<http://www.workforwater.org/>



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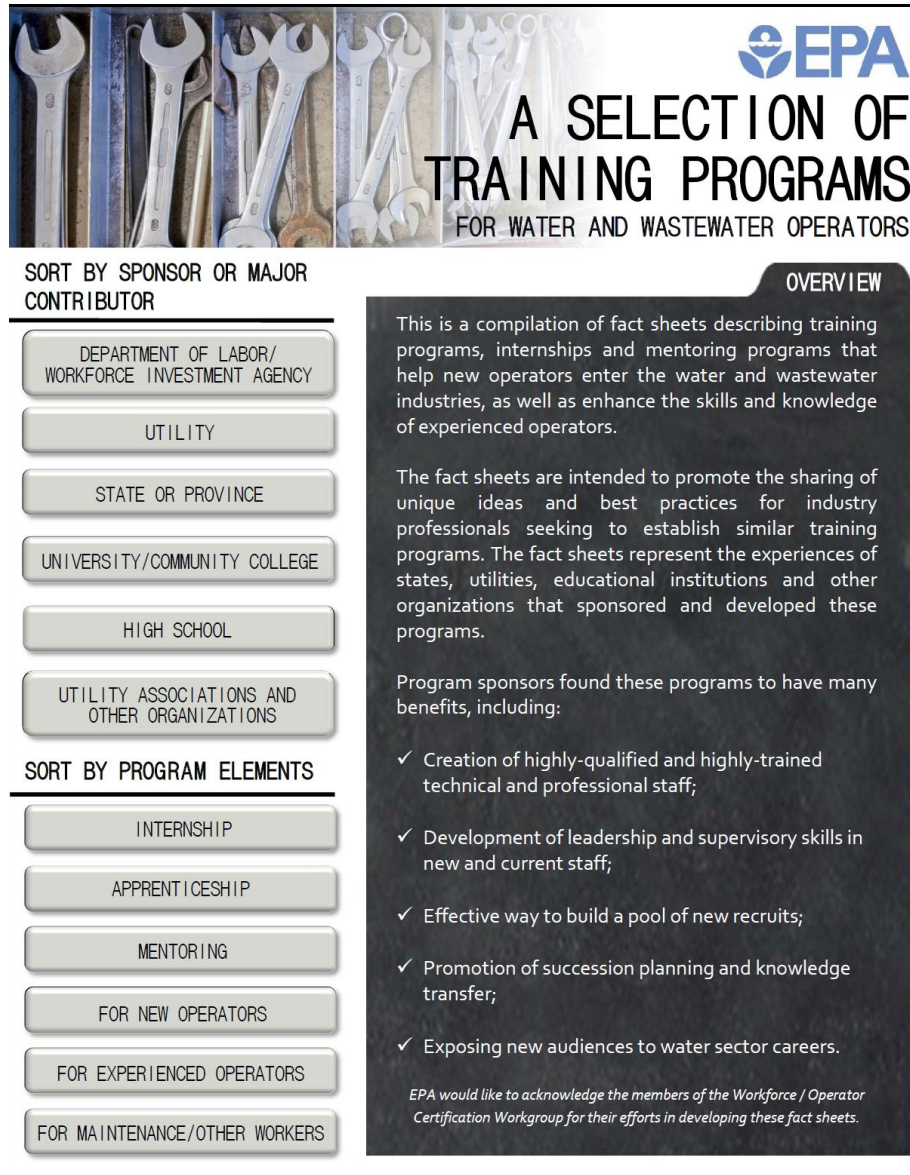
[Resources for Water Professionals](#) [High School/Votech](#) [College](#) [Military Second Career](#) [Advanced Science](#)

Welcome to **Work for Water!** It's the place where students and job seekers can explore green careers, and utilities will find a clearinghouse of resources for recruiting in the wonderful world of water. Developed by the **American Water Works Association** and **Water Environment Federation**, the world's leading technical experts on drinking water and water quality, this site is packed with resources to find jobs or prepare for rewarding careers in protecting public health and the environment. Learn about what it takes to work for water and get a great job for a great cause!

**High School/Votech**

**College**

**Military Second Career**



**EPA**

## A SELECTION OF TRAINING PROGRAMS

FOR WATER AND WASTEWATER OPERATORS

**SORT BY SPONSOR OR MAJOR CONTRIBUTOR**

- DEPARTMENT OF LABOR/WORKFORCE INVESTMENT AGENCY
- UTILITY
- STATE OR PROVINCE
- UNIVERSITY/COMMUNITY COLLEGE
- HIGH SCHOOL
- UTILITY ASSOCIATIONS AND OTHER ORGANIZATIONS

**SORT BY PROGRAM ELEMENTS**

- INTERNSHIP
- APPRENTICESHIP
- MENTORING
- FOR NEW OPERATORS
- FOR EXPERIENCED OPERATORS
- FOR MAINTENANCE/OTHER WORKERS

**OVERVIEW**

This is a compilation of fact sheets describing training programs, internships and mentoring programs that help new operators enter the water and wastewater industries, as well as enhance the skills and knowledge of experienced operators.

The fact sheets are intended to promote the sharing of unique ideas and best practices for industry professionals seeking to establish similar training programs. The fact sheets represent the experiences of states, utilities, educational institutions and other organizations that sponsored and developed these programs.

Program sponsors found these programs to have many benefits, including:

- ✓ Creation of highly-qualified and highly-trained technical and professional staff;
- ✓ Development of leadership and supervisory skills in new and current staff;
- ✓ Effective way to build a pool of new recruits;
- ✓ Promotion of succession planning and knowledge transfer;
- ✓ Exposing new audiences to water sector careers.

*EPA would like to acknowledge the members of the Workforce / Operator Certification Workgroup for their efforts in developing these fact sheets.*

EPA compilation of fact sheets describing training programs, internships and mentoring programs

<https://www.epa.gov/sustainable-water-infrastructure/selection-training-programs-water-and-wastewater-operators>

A blue-tinted photograph of industrial machinery, possibly a water treatment plant, featuring large pipes and valves.

# Workforce Planning

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