



# Apprenticeship Program

Designed to enhance and prepare the apprentice to be fully qualified in multiple aspects of water and/or wastewater operations.







**DESIGNED TO ENHANCE AND  
PREPARE THE APPRENTICE TO BE  
FULLY QUALIFIED IN MULTIPLE  
ASPECTS OF WATER AND/OR  
WASTEWATER OPERATIONS.**

# History

It takes more than 380,000 highly skilled water and wastewater personnel to ensure the public supply of safe drinking water and to protect our lakes, streams and groundwater. Advancements in water treatment and supply technology have increased the skills and training required of this workforce. Water professionals are ultimately responsible for meeting stringent regulatory standards, replacing aging infrastructure, recruiting and training new operations specialists, and responding to and recovering from disasters.

In addition to increasing professional demands, utilities will soon be forced to replace many of their most experienced employees. Over the next decade, the water sector is expected to lose between 30 and 50 percent of the workforce to retirement. Many of these employees have worked at the same utility for the majority of their careers, and they will depart with decades of valuable institutional knowledge.

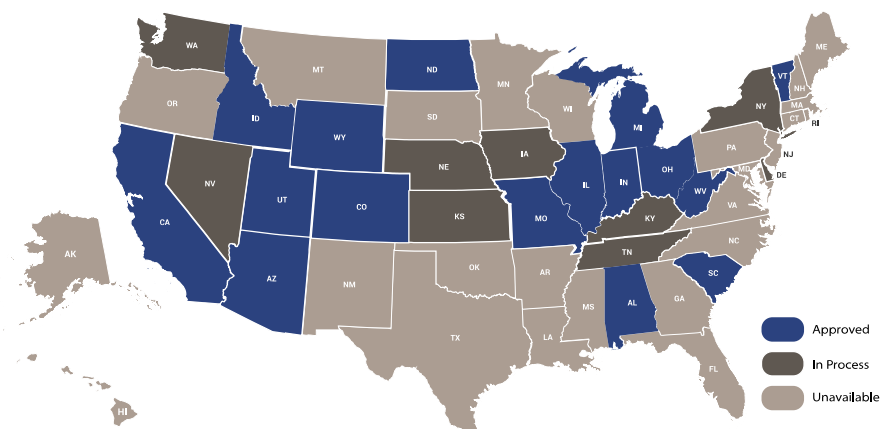
NRWA and State Affiliates currently provide training on operator certification, financial sustainability, environmental compliance, utility management and governance to 80,000 water professionals annually in all 50 states. Last year, over 55,000 on-site consultations were delivered by NRWA's technical experts for water quality, energy efficiency, source water protection, technical assistance and emergency response.

The WaterPro Apprenticeship program will initially be tailored to water system operations specialists and wastewater system operations specialists. Additional apprenticeships programs are in the works for water utility system customer service personnel and technical assistance specialists.

On November 14, 2017 National Rural Water Association held a formal signing ceremony in recognition of the National Apprenticeship Week 2017. Twelve States signed initially, California Rural Water Association included. The Department of Labor will support NRWA and associates as the Waterpro Apprenticeship Program becomes a nationally recognized standard.



*Picture, from Left Matt Holmes, Deputy CEO National Rural Water Association Sam Wade, CEO NRWA Steve Fletcher, President NRWA and Washington County Water Company Ondre Harris, Senior Policy Advisor for Employment and Training Administration in the Department of Labor Anne Hazlett, USDA Assistant Secretary for Rural Development John Ladd, Administrator at USDOL, Employment and Training Administration, Office of Apprenticeship Chris Shaffner, CoBank Sector Vice President of Water and Community Facilities*



# Program Overview

California Rural Water Association has two apprenticeship programs that started in the fall of 2018. The programs are in response to the growing demand for skilled operators as more operators reach retirement age. Both the water and wastewater operations specialist programs are two years long. Applications are accepted into the program, either in the Spring and Fall.

## EMPLOYER RESPONSIBILITIES & BENEFITS

- Provide on-site supervision for the On the Job Learning (OJL) portion of the program.
- Maintain employment and OJL records.
- Must pay \$1,500 apprenticeship tuition at the beginning of each year.
- Salary assistance through the county workforce board may be available to water systems. Our program is on the ETPL.

## WHO CAN APPLY?

Applicants must comply with the following criteria:

- Applicants must be currently employed by a water or wastewater system
- 18 years old or older
- Have a high school diploma or GED
- Physically capable to perform the essential functions of the apprenticeship program
- Apprentices will be required to take and pass drug screening *or program will accept results from utilities*
- Apprentices must pass a background check *or program will accept results from utilities*
- Applicants must be able to attend all formal trainings

Curriculums are designed to enhance and prepare the apprentice to be fully qualified in multiple aspects of water and wastewater operations. There will be a total of 288 formal training hours for each program broken down into core and elective classes.

## BENEFITS

- **Earn While You Learn**  
*If eligible*, wages for apprentices can be reimbursed up to 50% for a set amount of hours by the local county job centers. Also, new hires are eligible for tuition reimbursement through the county because the program is on the ETPL (Eligible Training Provider List).

- **Credit For Previous Classes**  
Up to 36 hours can be credited for classes that have been previously taken by the apprentice.
- **Veteran's Training Benefits**  
Training qualifies for VA benefits.
- **Reduce Training Expenses**  
Savings of over \$3,000 per individual if courses are bought separately. All classes are on-line, reducing travel, lodging, and food expenses.



Classes are IACET certified meaning awarded CEU's are recognized throughout the United States.



In-classroom training hours can be converted into college credits towards a Water or Wastewater Treatment Plant Operator certificate from California State University, Sacramento.

## WATER OPERATIONS SPECIALIST:

- Eligible to take the Water Treatment Grade 2 Exam
- Eligible to take the Water Distribution Grade 2 Exam
- Eligible to take the Water Treatment Grade 3 Exam (upon completion of 1-year experience as a T2)
- Eligible to take the Water Distribution Grade 3 Exam (upon completion of 1-year experience as a D2)
- Backflow Tester Certification through AWWA, NCBPA, or ABPA
- Utility Management Certification
- Sampling Certification
- Trenching and Shoring Safety Certification

## WASTEWATER OPERATIONS SPECIALIST:

- Wastewater Treatment Grades 1-3:  
*The state certification program mandates minimum of 1 year's experience for the Grade 1 level certification and the experience requirements increase for the Grades 2 and 3. The education requirements are all met and/or exceeded when you complete the Apprenticeship's formal training courses.*
- Confined Space Entry Certification
- Trenching and Shoring Certification
- Utility Management Certification



# Water System Operations Specialist

CRWA APPRENTICESHIP PROGRAM

## PROGRAM GUIDELINES

- A mentor must be designated by the system.
- A letter of understanding and commitment needs to be signed by both the sponsoring mentor and the apprentice.
- Typical courses will be delivered once a week in 3 hour time slots.
- The cross-connection tester course will be one week as usual.
- All sponsoring agencies will receive course updates and progress reports.
- Tracking on formal classroom time will be done internally.
- All apprentices will receive course updates and completion schedules monthly.
- Training fees will be assessed annually at the beginning of each year at the cost of \$1,500 per year. This includes all instruction and textbooks. There is an opportunity for utility apprentice's sponsors to have a portion of the apprenticeship salary and benefits paid for up to one year. This will be determined on a system by system basis.



# Water System Operations Specialist

## FORMAL TRAINING – 288 HOURS TOTAL OVER A 2-YEAR PERIOD

YEAR 1 CURRICULUM		
Course	CEUs	Course Material
Orientation	6 hours	Program introduction and overview
Introduction to Mathematics	6 hours	CRWA Basic Math course
OSHA 10	16 hours	OSHA approved training materials United Rentals training
Water Distribution O&M	36 hours	Water Distribution System O&M, Volume 1 (Sac State)
Water Treatment O&M Volume 1	36 hours	Water Treatment Plant Operation, Volume 1 (Sac State)
Elective Courses	up to 40 hours	Apprentices can take up a maximum of 40 hours of electives in a year
<b>Total Formal Training Hours</b>	<b>144 hours</b>	

YEAR 2 CURRICULUM		
Course	CEUs	Course Material
Advanced Mathematics	12 hours	CRWA Advanced Math course
Backflow Tester Course	36 hours	CRWA course USC manual 10th Edition
Water Treatment O&M Volume 2	36 hours	Water Treatment Plant Operations, Volume 2 (Sac State)
Utility Management Certification	24 hours	NRWA course and certification
Elective Courses	up to 40 hours	Apprentices can take up a maximum of 40 hours of electives in a year
<b>Total Formal Training Hours</b>	<b>144 hours</b>	

### INDUSTRY CREDENTIALS & QUALIFICATIONS

This course will provide the following certifications or the qualifications to test for a certification:

#### Water Treatment Grade Level 2

Upon completion of the Water Treatment O&M Volume 1; 36-hour course. (State Exam)

#### Water Treatment Grade Level 3

Upon completion of two 36-hour courses and one year on the job experience at a Grade 2 facility or higher. (State Exam)

#### Water Distribution Grade Level 2

Upon completion of the Water Distribution 36-hour course. (State Exam)

#### Water Distribution Grade level 3

Upon completion of two 36-hour courses and one year on the job experience at a Grade 2 level facility or higher. (State Exam)

#### AWWA, ABPA, or NCBPA Backflow Tester Certification

The 36-hour course allows you to sit for the tester exam. AWWA and NCBPA certification exams and hands-on testing will be given at the completion of the course.

#### Utility Management Certification

The UMC course is a national certification for utility management. The course work and one year of experience will make you eligible for the testing that will be given at the end of the course.

#### Sampling Certification

The course work completed in this area will allow you to take the short exam to obtain a sampling certification.

#### OSHA 10 Safety Certification Cards



# Water System Operations Specialist

## NEW UPDATES TO THE FORMAL TRAINING PROGRAM

The Apprenticeship Program now requires approximately 100 hours of mandatory **Core Water Courses**. However, we've built in a flexible component to the formal training program. Apprentices have the option to take up to 40 hours a year of State certified **Elective Courses** that are more aligned with their water system needs and their learning needs.

Below is an ever growing list of **Water Elective Courses** for Apprentices to choose from. You can choose any elective course that matches your needs or water system needs and complete it on-line on our learning management system.

- 
- SWTR
  - Groundwater Rule
  - THM Regs
  - Nitrate Regs
  - Flocculation
  - Sedimentation
  - Filtration
  - THM Removal
  - Tertiary Treatment Techniques
  - Arsenic Regs
  - Iron & Manganese
  - Secondary Contaminants
  - Well Construction
  - Technical, Managerial, Finance (Tmf)
  - Asset Management
  - Utility Budgeting
  - Board R&R
  - Developing Sop's
  - VFD's
  - Pumps & Pumping
  - Hydrant & Valve Maintenance
  - Distribution Construction
  - Distribution Safety
  - Pump Shaft Alignment
  - Leak Detection
  - Line Locating
  - Confined Space Entry
  - Sampling A & B
  - Slow Sand Filtration
  - Storage Tank O&M
  - Hydrant Flushing/Dichlorination
  - Jar Testing Procedures
  - Utility Managers R&R
  - Cross Connection Control

# Wastewater System Operations Specialist

## PROGRAM GUIDELINES

- A mentor must be designated by the system.
- A letter of understanding and commitment needs to be signed by both the sponsoring mentor and the apprentice.
- Typical courses will be delivered once a week in 3 hour time slots.
- The cross-connection tester course will be one week as usual.
- All sponsoring agencies will receive course updates and progress reports.
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# Wastewater System Operations Specialist

## FORMAL TRAINING – 288 HOURS TOTAL OVER A 2-YEAR PERIOD

### Year 1 Curriculum

Course	CEUs	Course Material
Orientation		Program overview
Introduction to Mathematics	6 hours	CRWA Basic Wastewater Math course
Beginning Wastewater Collections Systems	36 hours	Operation and Maintenance of Wastewater Collection Systems, Volume 1 (Sac State)
CMOM and SSMP Regulations	12 hours	CRWA overview of required collection system reporting
Security/Emergency Response	12 hours	State approved ERP and Security training class material
Beginning Wastewater Treatment	36 hours	Operation of Wastewater Treatment Plants, Volume 1 (Sac State)
Advanced Mathematics	6 hours	CRWA Advanced Math course
Backflow Tester Course	36 hours	CRWA course USC version 10 manual
<b>Total Formal Training Hours</b>	<b>144 hours</b>	

### Year 2 Curriculum

Course	CEUs	Course Material
Advanced Wastewater Collections	36 hours	Operation and Maintenance of Wastewater Collection Systems, Volume 2 (Sac State)
Trenching and Shoring Safety Certification	12 hours	OSHA approved training materials United Rentals training
Understanding Wastewater Discharge Permits	6 hours	State materials and system examples
Advanced Wastewater Treatment	36 hours	Operation of Wastewater Treatment Plants, Volume 2 (Sac State)
Confined Space Entry and Gas Chlorination Safety	30 hours	CRWA course (United Rentals coursework)
Utility Management Certification	24 hours	NRWA course and certification
<b>Total Formal Training Hours</b>	<b>144 hours</b>	

### CERTIFICATION QUALIFICATIONS

This course will provide the following certifications or the qualifications to test for a certification:

#### Wastewater Treatment Grades 1-3

The state certification program mandates a minimum of one year's experience to test for the Grade 1 level certification and the experience requirements increase as you test for Grades 2 and 3. The education requirements are all met and/or exceeded by completing the apprenticeships formal training courses.

#### Confined Space Entry Certification

#### Trenching and Shoring Certification

#### Utility Management Certification

#### Trenching & Shoring Safety Certification Cards

# Wastewater System Operations Specialist

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Below is an ever growing list of **Wastewater Elective Courses** for Apprentices to choose from. You can choose any elective course that matches your needs or water system needs and complete it on-line on our learning management system.

- 
- Collection System Maintenance
  - SSMP Development
  - NPDES Vs WDR
  - Primary Wastewater Treatment
  - Secondary Wastewater Treatment
  - Trickling Filters
  - RBC Treatment
  - Extended Aeration
  - Activated Sludge
  - Sludge Handling And Disposal
  - Sludge Land Application
  - Wet Well Maintenance And Repair
  - Lagoon O & M
  - Odor Mitigation Techniques
  - Lift Station O & M
  - Wastewater Math Beginning
  - Wastewater Math Intermediate
  - Microscope Use
  - Bug Identification
  - Collection System Tving
  - Process Control Testing
  - DMR Reporting
  - Treated Effluent Land Application
  - Step System O&M
  - Customer Service
  - Gas Chlorination O&M
  - Gas Chlorine Safety
  - Confined Space Entry
  - Scott Air Pack O&M
  - Map Reading And Updates





# CRWA Apprenticeship Program

I request to be provided with and given an opportunity to complete an apprenticeship application for the **California Rural Water Association** Apprenticeship Program and voluntarily provide the following information in consideration of this request.

Name:		
Date of Birth:		
Address:		
City:	State:	Zip:
Phone:		
Email:		
Gender:	Apprenticeship Type:	Utility Name (Please Print Below) :
<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Water Operator <input type="checkbox"/> WasteWater Operator	
Race: (check one or more)		
<input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian or other Pacific Islander		
Ethnic Group: (check one)		
<input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Non-Hispanic or Latino		
Signature		
Upon receipt of completed form by any applicant, employer will immediately forward this form to: <b>California Rural Water Association</b> 1234 North Market Blvd., Sacramento, CA 95834 Fax: (916) 553-4904 or Email: info@calruralwater.org If you have any questions, please contact this office at (916) 553-4900.		

**California Rural Water Association**  
1234 North Market Blvd.  
Sacramento, CA 95834

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