MEETING THE WORKFORCE CHALLENGES OF THE WATER SECTOR

A Competency Model Approach

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EMPLOYMENT AND TRAINING ADMINISTRATION
UNITED STATES DEPARTMENT OF LABOR

WorkforceGPS
Navigate to Success
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Today’s Objectives

✓ Explore Water Sector Workforce Challenges

✓ Discuss How Competency Models Help

✓ Learn About Key Elements of the Water and Wastewater Competency Model

✓ Engage with the National Rural Water Association
  – Hear how the model helped meet their needs to develop apprenticeships
  – Active dialogue
Poll Question #1

• Let us know which type of agency you represent:

• Click on the answer below that best describes
  – Water and wastewater utilities
  – States and primacy agencies
  – Technical assistance providers
  – State/local workforce boards, one-stop operators, career services providers
  – State/local apprenticeship agencies
  – Private Business
  – Other (please describe in chat window)
Water Sector Workforce Challenges

REPORT
Renewing the water workforce: Improving water infrastructure and creating a pipeline to opportunity

Joseph Kane and Adie Tomer · June, 2018
Water workers are needed in every state and area of the country

Thousands of water workers are aging and expected to retire from their positions in coming years.

– Some water occupations are significantly older than the national median (42.2 years old), including water treatment operators (46.4 years old).
Water Sector Workforce Challenges

• Water workers often are able to earn higher than average hourly wages than workers in other sectors

• Apprenticeship is a well-suited strategy for the water sector
  – Most water workers require less formal education, with about half having a high school diploma or less
  – Instead, they require more extensive on-the-job training and familiarity with a variety of tools and technologies
“Ultimately, locally-driven actions are crucial to develop new strategies and target new investments, but the scale of the issue demands broader regional collaborations and national support to build additional financial, technical, and programmatic capacity.” – Brookings, 2018
Brookings Recommendations

1. Utilities and other water employers need to empower staff, adjust existing procedures, and pilot new efforts in support of the water workforce

– Develop competency models—or customize existing models—to promote continued learning and skills development among staff
Poll Questions #2

• How familiar are you with Competency Models?

• Select the answer below that best describes you
  – I’m an expert, I work with them all the time
  – I am experienced, but still learning
  – I’ve heard of a competency model before but never used
  – What is a competency model?
Competency Models

• What is a competency?
  – The capability to apply a set of related knowledge, skills, and abilities to successfully perform functions or tasks.

• What is a competency model?
  – Collection of competencies that together define successful performance in a particular industry or field
  – Resource, not an end-product
Who Uses Competency Models?

- Private Industry Leaders
- Trainers and Educators
- Human Resources Professionals
- Public Workforce Professionals
- Economic Developers
Why Competency Models?

Competency Models can help...

• Identify and communicate industry needs
• Improve employee training programs
• Develop industry-defined performance indicators
• Develop resources for career exploration
• Provide national/regional framework to inform state certification programs
Competency Model Features

- National, crosscutting, and industry-wide
- Do not describe a standard of performance
- Represent broad industry level
- Workers do not have every skill at the same level
Competency Model Framework

Tier Groupings

OCUPATION RELATED

INDUSTRY RELATED

FOUNDATIONAL
Competency Model Tiers

- Personal Effectiveness Competencies
- Academic Competencies
- Workplace Competencies
- Industry-Wide Technical Competencies
- Industry-Sector Technical Competencies
- Occupation-Specific Requirements
- Management Competencies
Water and Wastewater Competency Model
Model Industry Champions

American Water Works Association

EPA
United States
Environmental Protection
Agency

Water Environment
Federation
the water quality people®

NRWA
National
Rural Water
Association

SouthWest
Water Company®

San Francisco
Water Power
Sewer
Services of the San Francisco
Public Utilities Commission

RCAP
www.rcap.org

Wyoming
Rural
Water
Workforce Content Addressed in Model Update

- Automation/Supervisory Control and Data Acquisition (SCADA) Systems
- Integrated Water Resources Management
- Cybersecurity and Information Security
- Decentralized Wastewater Treatment Systems
- Environmental Regulations and Laws
- Water Resilience
Competency Model In Action - Colorado

Colorado State Government and Training Partners Collaborate to Improve Drinking Water Training Opportunities

- Utilizing ETA’s competency model to develop a state-specific Water Industry Competency Model
- Engaging water industry trainers and operators in developing a core curriculum
- Improving the quality and accessibility of water industry training throughout Colorado

Introduction

The safety of public water systems affects all of us. Accordingly, it is in our collective interest to ensure that the operators responsible for maintaining that safety are well prepared for their critical job tasks.

The Colorado Department of Public Health and Environment (CDPHE) worked in partnership with the Rocky Mountain Section of the American Water Works Association (RMSAWWA) to develop core curricula and improve the quality of training being offered for operators working in the state’s public water systems. Between 2011 and 2013, the two

Utilities continually face difficulty in recruiting, training and retaining skilled employees. Adding to those challenges, a large number of water industry employees are eligible for retirement; these employees represent a significant amount of institutional knowledge that could be lost without proper succession planning and process documentation.¹

Reflecting this reality, the Bureau of Labor Statistics outlook for water and wastewater treatment plant and system operators is positive. Employment of individuals trained for these occupations is projected to grow six percent from 2014-2024, about as fast as...
• Conducted a Root Cause Analysis to Identify Where State Systems Struggle

• Held a series of roundtables
  – To bring together water industry training partners
    • Community colleges
    • Industry organizations,
    • Non-profits,
    • For-profit training firms
    • And government agencies
    • Industry operators

• With a goal to determine how to improve training for water occupations in the state
Competency Model In Action - Colorado

• Areas of Focus
  – Define Core Curriculum
  – Identify training gaps
Tools They Used

Water and Wastewater Competency Model - Download Model

Click on a link below to download the industry model in the formats provided -

- **PDF document**
- **MS Word document**
- **Excel spreadsheet**

You can also download the model in the following worksheet formats -

- **Identify Credential Competencies Worksheet**
- **Curriculum Analysis Worksheet**
- **Employer Analysis Worksheet**
- **Gap Analysis Worksheet**
National Rural Water Association

Developing Apprenticeship Program for Water and Wastewater Operations Specialist
National Rural Water Association

• NRWA Trade Organization with +30,000 Water/Wastewater Utility Members

• 1978 Began Working with EPA on SDWA Training for Small & Rural Water Systems

• 2015 EPA Recommends NRWA to DOL
Apprenticeship Program Timeline

- October 2015
  - Water Sector Competency Model Update

- July 2016
  - DOL Energy sector meeting

- November 2016
  - Work Force Advancement Center

- January through July 2017
  - National Guidelines Standards Certified by DOL

- August 2017
  - AIRW: 1st Registered Apprenticeship Program
• Establish a nationally-recognized certificate;
• Build a trained workforce that will improve service to rural customers;
• Develop a systematic approach to OJT
• Create a nationwide clearinghouse for training resources;
• Enhance workforce participation in rural America
• Improve retention of water workers in small and rural communities
• Increase emergency preparedness and resiliency through a well-trained workforce.
5 Core Components

1. Utility Involvement
   – Employers are the foundation of every Registered Apprenticeship program

2. Structured On-the-Job Training with Mentoring
   – Two years (2000 hours/year) with an experienced mentor

3. Related Training and Instruction
   – Technical education

4. Reward for Skill Gains
   – Wage increases as skills increase over time

5. National Occupational Credential
   – Nationally recognized—guarantee to employers that apprentices are fully qualified for the job
Workforce Content Addressed in Model Update

On-the-Job-Training - 4,000 hrs

- Safety
- System O&M
- Quality Control
- Water Resilience
Water Sector Competency Model

Related Training & Instruction – 288 hrs

- Safety
- System O&M
- Quality Control
- Laws & Environmental
- Operator Math
- Security & Emergency Response
Alliance of Indiana Rural Water Apprenticeship Program

• 1st Apprentices

• Alliance of Indiana Rural Water
Thanks and Contact Us!

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