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### 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 entities used the U.S. Department of Labor, Employment and Training Administration's (ETA) 2009 Water Competency Model as a conceptual framework in undertaking this initiative.

In collaboration with the Environmental Protection Agency (EPA), the America Water Works Association and other industry champions, ETA's model was updated in 2016 and is now known as the Water and Wastewater Industry Competency Model. To launch this initiative, ETA and EPA co-sponsored "An Introduction to the Water and Wastewater Industry Competency Model" webinar on June 14, 2016. The webinar can be viewed at this link: <https://coffey.adobeconnect.com/a1115224699/p99ywpmiykt/?launcher=false&fcsContent=true&pbMode=normal>

#### Workforce Need

<sup>1</sup> American Water Works Association, 2014 AWWA State of the Water Industry

<sup>2</sup> Bureau of Labor Statistics, Occupational Outlook Handbook, 2016-2017 Edition

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.<sup>1</sup>

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 the average for all occupations.<sup>2</sup> Job prospects are expected to be excellent as openings due to replacement needs will create five times as many openings as those due to growth.<sup>3</sup> In Colorado, overall employment of water and wastewater treatment plant and system operators is projected to grow 17.4% from 2014-2024. Of a projected 118 openings annually for water and wastewater treatment plant and system operators, two thirds (79) are for replacement needs; one-third (39) reflect expected growth in employment for these occupations.<sup>4</sup>

#### Approach: Defining Core Curricula

In 2009, CDPHE undertook a Failure and Root Cause Analysis to identify where state water systems struggle. The most frequently observed failures emerging from this analysis were in the following areas: 1) disinfection; 2) cross connection control; 3) distribution operations; 4) failure to plan; and 5) management and operation. CDPHE also

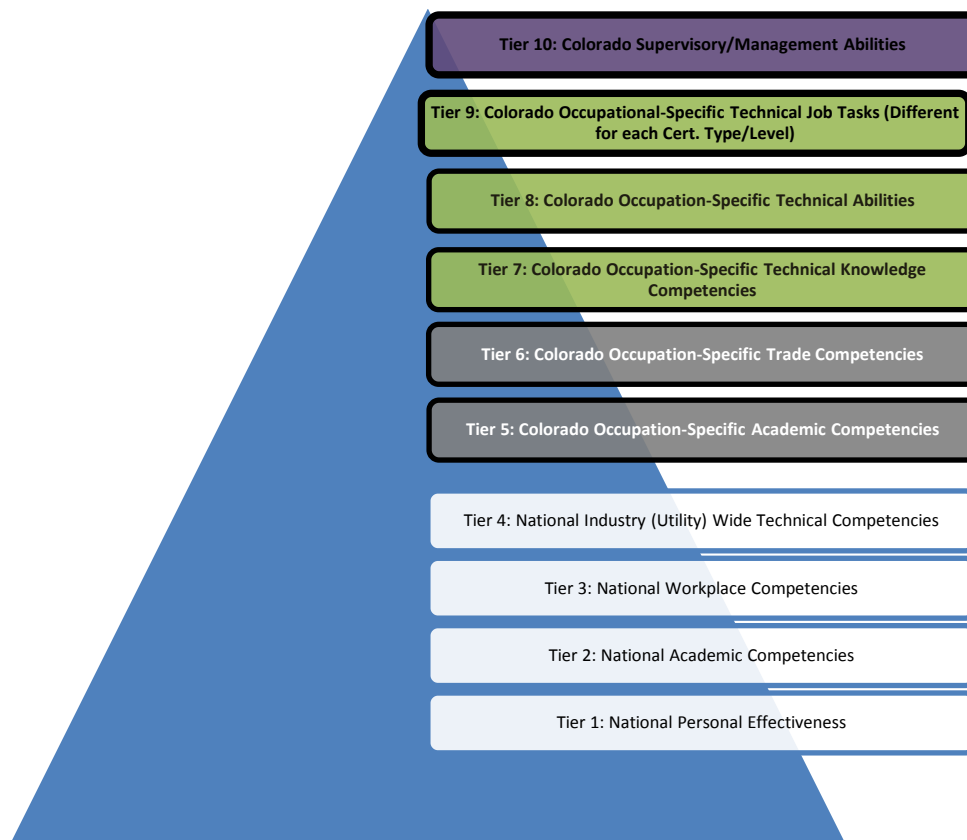
<sup>3</sup> Bureau of Labor Statistics, Employment Projections, Occupational Data

<sup>4</sup> Colorado Department of Labor and Employment, Colorado LMI Gateway

conducted an evaluation of existing training opportunities. Utilizing these findings as a starting point, a series of roundtables were conducted to bring together water industry training partners – including representatives from community colleges, industry organizations, non-profits, for-profit training firms, and government agencies – as well as industry operators to determine how to improve training for water occupations in the state.

The mission of Roundtable I, held in 2010, was to convene water industry training partners to identify training gaps and find solutions. As a result of these deliberations, the group developed the 2015 Training Strategy, articulating the following five goals: 1) Set Standards for High Quality Courses; 2) Define Core Curriculum; 3) Support Statewide

Training; 4) Coordinate Training Offerings and Schedules; and 5) Cultivate a Supportive Learning Environment. CDPHE partnered with the RMSAWWA to assist them in realizing these goals. The mission of Roundtable II, held in 2012, was to bring together trainers and water industry operators from across the state and at all levels to participate in a number of dedicated workgroups to develop a framework to bring the 2015 Training Strategy to life. The Training Workgroup focused on Goal 2, Defining Core Curriculum. In 2013, this workgroup used ETA’s 2009 Water Industry Competency Model to develop a state-specific water industry competency model to define core curriculum for industry operators and trainers.



“We added a number of tiers to ETA’s 2009 Water Industry Competency Model in developing the state’s competency model,” says David Dani, CDPHE, Water Quality Control Division, Capacity Coach and Training Workgroup Lead. “We used operator surveys to identify what actual job tasks are performed in these occupations. We also reviewed all the topics that are covered in industry certification exams. As a result of this research, our water

industry competency model is focused on the specific skills that an operator in the state needs to know in order to progress along a career pathway and be successful on industry certification exams. The core curricula derived from the state’s competency model are based on the same principles.”

### **Approach: Improving the Quality of Training Being Offered**

“ETA’s Water Industry Competency Model and the resulting Colorado Industry Water Competency Model and core curriculum provided us with a conceptual framework to coordinate operator training with the state,” says Jeff Oxenford, Technical Services and Training Specialist, Rural Community Assistance Partnership, and RMSAWWA partner organization in this initiative. “Prior to this, there was no platform for such coordination. For example, in 2009, 468 separate water industry training events were held in the state with little coordination.”

A statewide approach for the delivery of water industry operator training is evolving. A Train-the-Trainer Workgroup, composed of a broad array of industry training providers, convenes on a regular basis. The workgroup has developed guidelines for water industry trainers based on the framework developed by the International Association for Continuing Education and Training. It has also piloted a scorecard approach to evaluate the effectiveness of ongoing operator training.

### **Next Steps**

“Our end goal is to create the tools to improve water industry training throughout the state,” says Mr. Dani. “We want to build a Web portal with a library of curricula where operators and trainers can go to find out what training is available on core topics. We would also like to encourage other states to partners and develop national water industry competency models using ETA’s updated Water and Wastewater Competency Model. This will allow states to coordinate core curriculum development for operator training.”

“With regard to the coordination of water industry training, our challenge is to keep it going,” says Mr. Oxenford. “We are working on an education business strategy through RMSAWWA.”

### **Related Links**

Colorado Department of Public Health and Environment  
<https://www.colorado.gov/cdphe>

American Water Works Association, Rocky Mountain Section  
<http://rmsawwa.org>

Rural Community Assistance Partnership  
<http://www.rcap.org>