



# Utility Management Certification & Apprenticeship Program

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By Bill O'Connell



NRWA®

NATIONAL  
RURAL WATER  
ASSOCIATION

*America's Largest Utility Membership*

# How NRWA is addressing challenges of developing the next generation of utility managers for water and waste water systems in small communities

- Utility Management Certification program
  - Program Overview
  - Benefits
- Apprenticeship program
  - Program Overview

# Utility Management Certification (UMC)

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- Developed to:
  - Enhance the financial, managerial and operational effectiveness of drinking water and wastewater systems across the country
  - To create a national designation for qualified water and wastewater utility managers
  - Create a pathway for experienced operators to move into management
- Launched in 2010
- Developed by KY, TX, and FL Rural Water Associations
- [www.wateruniversity.org](http://www.wateruniversity.org)

# UMC Application Requirements

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- 6 years of direct management or operations of a water or wastewater utility.
- Water and or wastewater operator licenses/certifications
- Training hours past 2 years
- State rural water association training session
- High school or GED
- College

# Utility Management Certification Benefits to Graduates

- The tools needed to effectively manage utilities and develop capacity based on federal standards
- Recognition of Professional Growth and Accomplishment
- National UMC Registry

# Utility Management Certification Benefits to Utility, Boards, and Councils

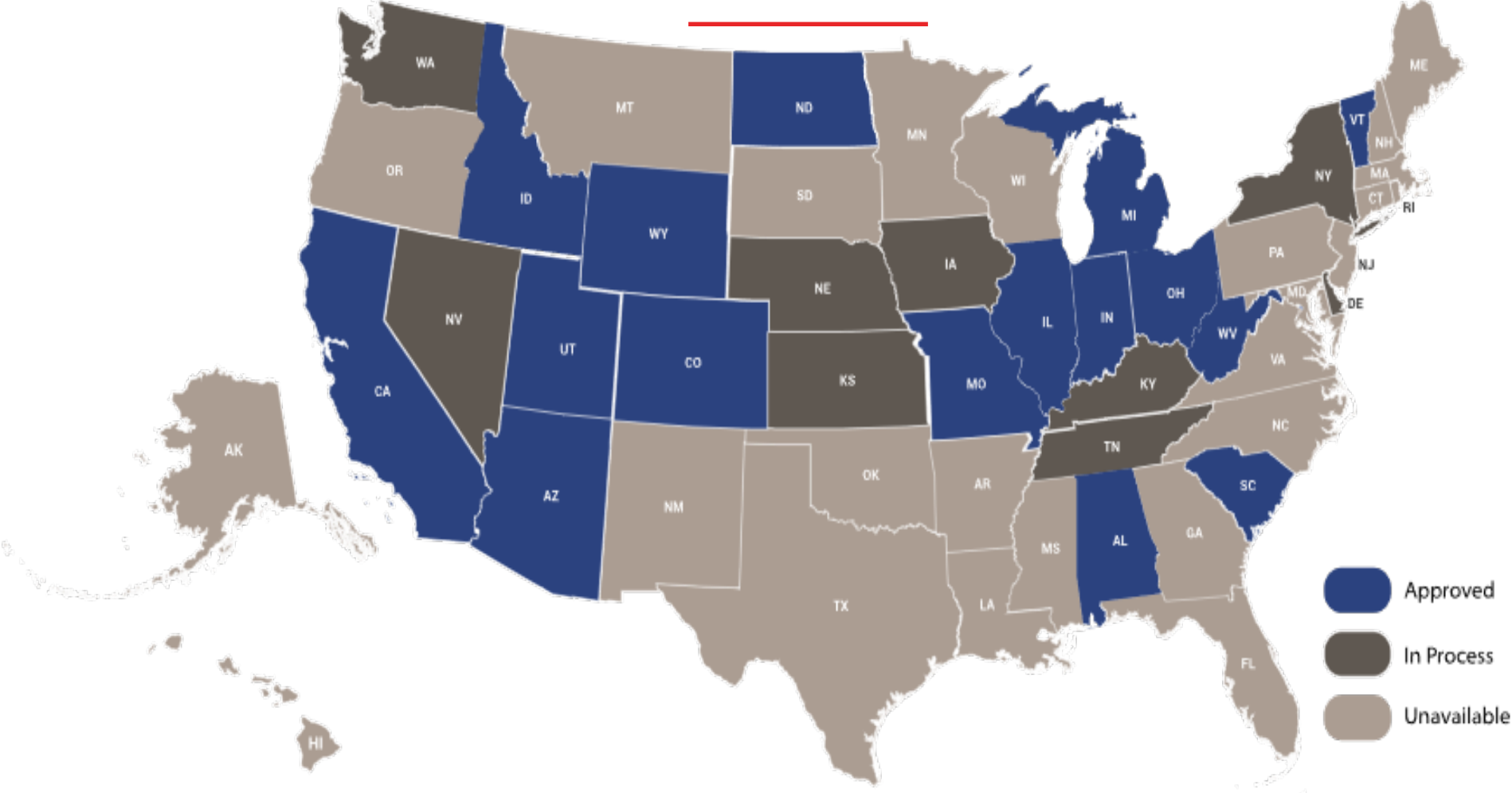
- The demonstrated competency and certification will give governing bodies of water and wastewater utilities a qualification certification and demonstrated competency standard for which to advertise and hire
- Eligibility Application Required
  - Years Experience
  - Licenses (water and/or wastewater)
  - Training Hours
- National UMC Registry

# NRWA Apprenticeship Program

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- November 2016
  - Work Force Advancement Center
- July 2017
  - National Guidelines Standards Certified by DOL
- August 2017
  - AIRW: 1<sup>st</sup> Registered Apprenticeship Program
- November 2018
  - 4 states with apprentices at systems: IN MO ID CA
  - 16 States with Registered Apprenticeship Program

# Registered and Pending State Apprenticeship Programs





# Core Components

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1. Utility Involvement
  - Apprentice Fulltime Employee
2. Structured On-the-Job Training with Mentoring
  - Two years (2000 hours/year) with an experienced mentor
3. Related Training and Instruction
  - Technical education (144 hours/year)
4. State Rural Water Association/NRWA
  - Nationally recognized-guarantee that apprentice is fully qualified for the job

# Employers Benefits

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*Apprenticeship's help develop highly-skilled employees.*

*Apprenticeship programs reduce turnover, increase productivity and develop pipeline of skilled people*

# Apprentice Benefits

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*Apprentices receive a paycheck that is guaranteed to increase as their training progresses.*

*Apprentices complete a combination of job-related instruction and hands-on, on the job training leading to nationally-recognized credentials*

# NRWA Apprenticeship Program

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- 1<sup>st</sup> Apprentices
- Alliance of Indiana Rural Water



# What's Next?

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- CoBank created Fund to Assist with program costs
- 16 States currently have registered apprentices
- 12 States are in the process of developing programs
- Developing introductory modules and education materials
- USDA RD Grant!!!

Workforce  
Development

Building  
Trades

Manufacturing  
&  
Technology

Continuing  
Education

Personal  
Enrichment

Credentials

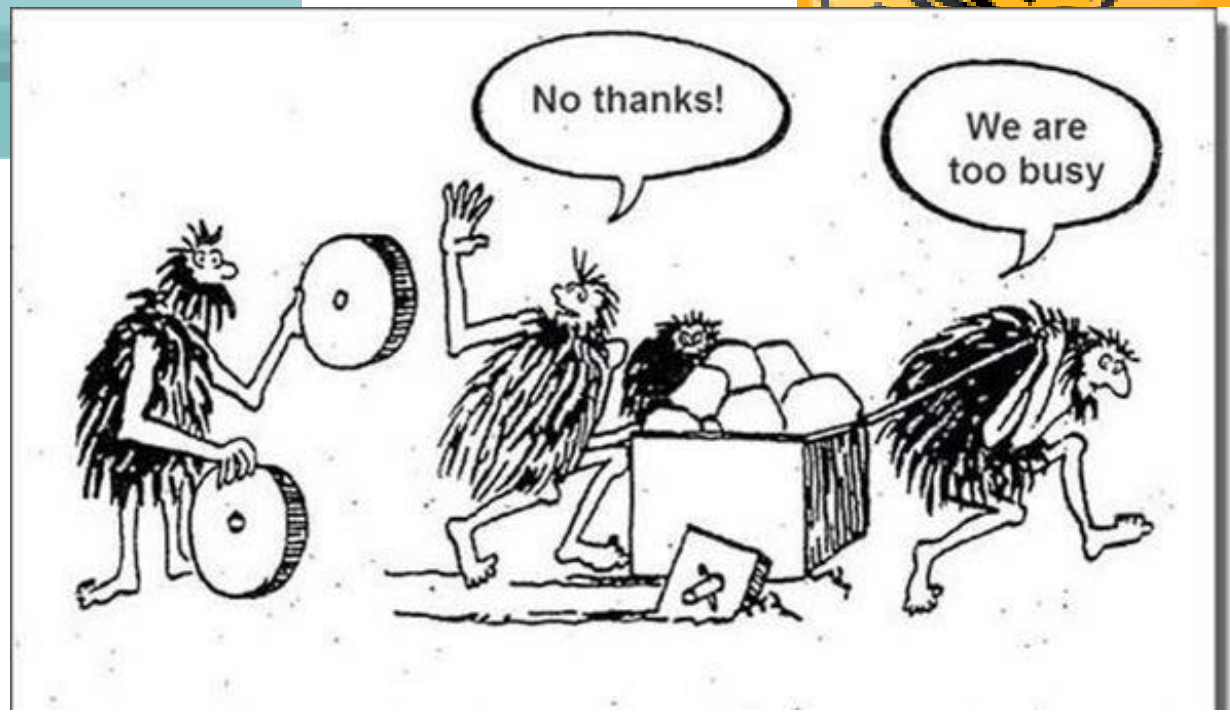


# STATE ACTIVITIES RELATED TO WORKFORCE DEVELOPMENT

PRESENTED BY HEATHER HIMMELBERGER



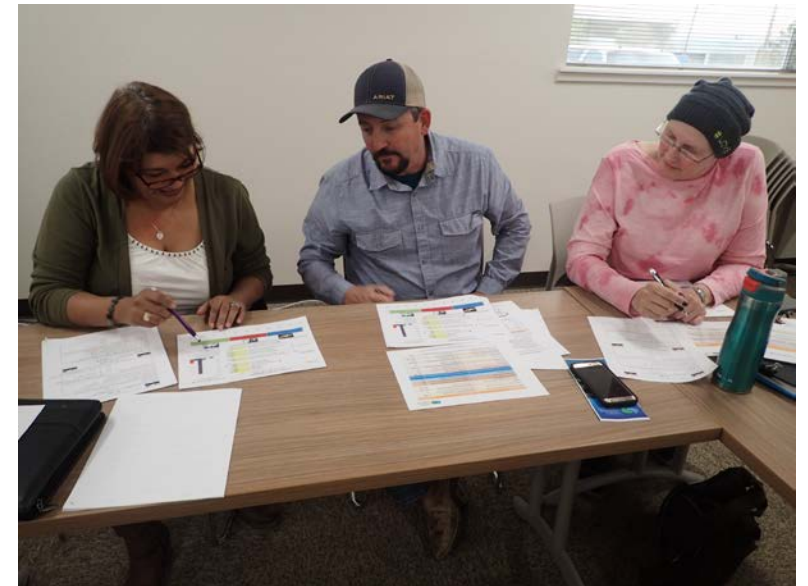
What keeps you up at night?




# Asked Some Version of the question.....



What is your biggest issue? What keeps you up at night?







**Total Number of  
Responses = 518**

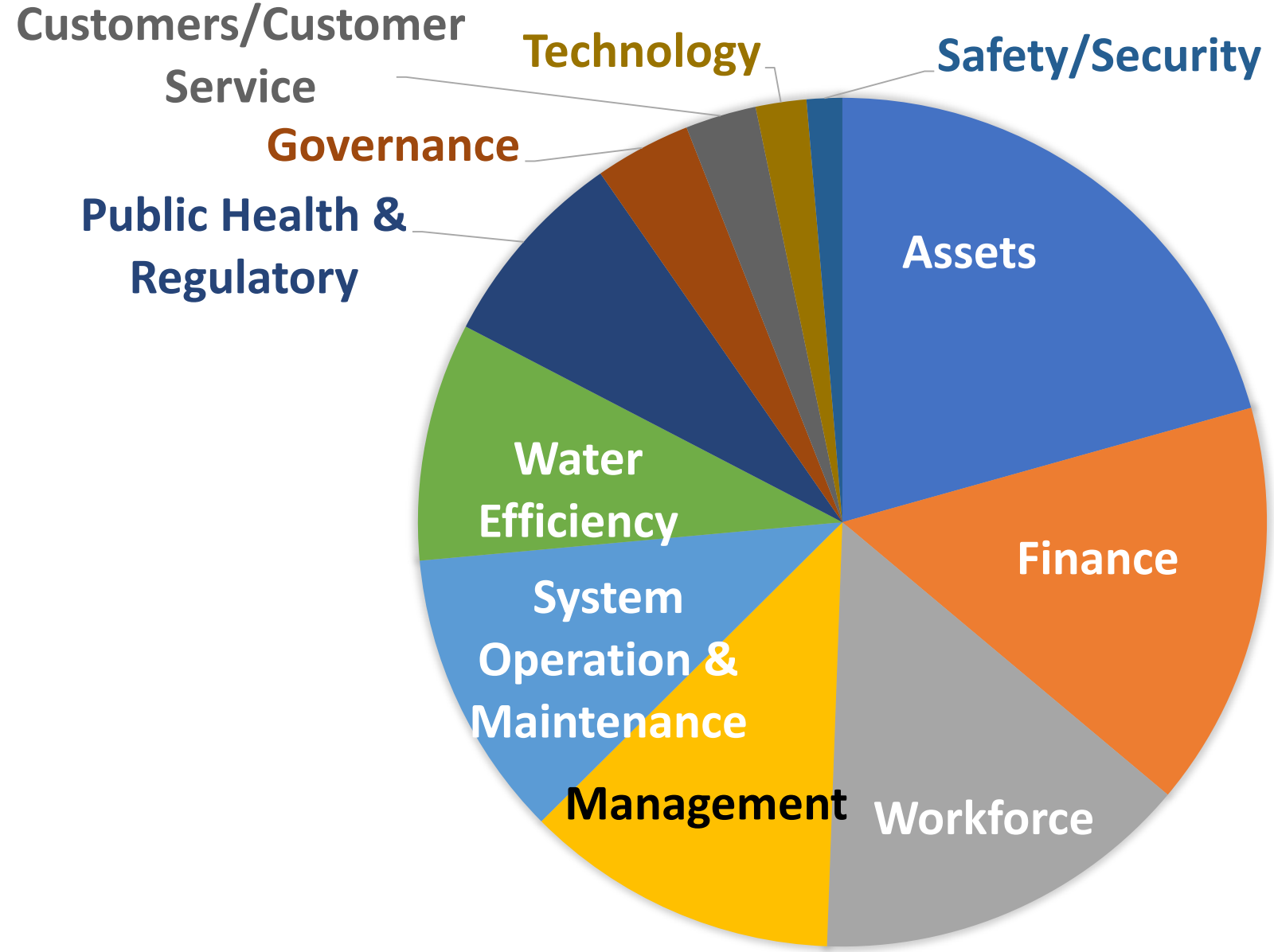
Responses Were Very Diverse; Put In  
Categories

Public  
Safe  
Assets  
Cus  
Serv  
Techn  
Syst  
Maintenance

Which Category had the  
most responses? What's  
Most On the Minds of  
Operators & Managers?

*Not always clear cut choices but did the  
best we could*

NUMBER OF RESPONSES BY CATEGORY



Category	Number
Assets	107
Finance	80
Workforce	75
Management	62
System Operation and Maintenance	57
Water Efficiency	47
Public Health & Regulatory	40
Governance	19
Customers/Customer Service	14
Technology	10
Safety & Security	7
Totals	518

Let's Dig A Little  
Deeper Into  
Workforce  
Responses.....



## 3<sup>rd</sup> Largest Category: Workforce

### Top 5 Responses:

Workforce Training & Development (24%)

Need More Operators/Understaffed

Finding Qualified Staff/Recruiting  
Staff/Competition w/ Other Sectors (e.g., oil)

Knowledge Management/Loss of Institutional  
Knowledge

Certification Issues/Getting Certified Initially or at  
Higher Levels

14 Types of  
Responses  
In the  
Category

# Anecdotal Responses



Applicants showed up  
with mom at interviews  
(and mom sat in!!)



Posted job opening for  
over a year with no  
qualified applicants



“Young people don’t  
want to work”

So Workforce is a Big Issue for Everyone



What are some states doing about it?



# Iowa's Water & Wastewater Treatment Technology Diploma Program

**Water**  
**Environmental**  
**Technology Program**  
at Des Moines Area Community College



# Intent of the Program

- Iowa DNR partnered with Des Moines Area Community College to establish the Water and Wastewater Treatment Technology Diploma Program
- Both entry level and current operators looking to move up
- Coursework and training in: treatment, communication, human relations, water analysis, and environmental science
- Program requires an internship to gain practical experience

# Job Listings Through WETP

Position	Company Name	Location	Posting Date	Website
Waste Water Superintendent Position	... City of Red Oak	Red Oak, IA	6/25/2018	link to job posting
Water Operator and Water Treatment Operator	... Iowa American Water Company	Davenport IA	7/23/2018	link to job posting
Assistant Operator - IA Area	... Industrial Fluid Managements, Inc.	Iowa City, IA	8/6/2018	link to website
Water/Wastewater Operator or Operator-in-Training	... PeopleService, Inc.	Riverside, IA	8/28/2018	link to posting

> **Apply Now**

> **Request Info**

« [Return to the DMACC Water Environmental Technology website](#)

# Tennessee's Fleming Training Center



Department of  
**Environment &  
Conservation**

# Fleming Training Center Offers

Cutting-edge technology

Advanced classes in a variety of water areas

Assistance to certified operators with their ongoing training

Services as operators complete their continuing education requirements

Education and certification to thousands of treatment plant and water management staff every year

# Technical Assistance

Technical assistance is available by the training staff at no charge. If you operate a plant or system in Tennessee, you may request an onsite visit, consult with staff over the phone, or send an email message.

**Biological/Natural Systems (BNS)** — [Fleming Staff](#), Phone: 615-898-6501

**Cross Connection Control** — [Ben Rodriguez](#), Phone: 615-898-6508

**Lab** — [Fleming Staff](#), Phone: 615-898-6501

**Small Water Systems** — [Amanda Carter](#), Phone: 615-898-6507

**Wastewater/Collection** — [Brienne Begley](#), Phone: 615-898-6509

**Water Treatment/Distribution** — [Amanda Carter](#), Phone: 615-898-6507

# Free WaterCalc App for Operators

College of Business, College of Engineering, and Office of Research and Economic Development at Tennessee Tech University (TTU) launched iCube, a new technology and innovation venture. One of the students' first endeavors is a suite of cutting-edge digital tools for the Tennessee Department of Environment and Conservation (TDEC).

Smart phone app: [WaterCalc](#), is a result of Fleming Training Center's partnership with TTU.

WaterCalc assists water & ww operators with basic calculations a menu of scientific formulas needed for water treatment, distribution, wastewater, and collections, and includes all the formulas covered in the American Board of Certification's Formula Book.

WaterCalc is now available to download for FREE on Android devices

# New Partnerships

- Working with Middle Tennessee State University and Columbia Southern University to provide more opportunities for water professionals (operators, managers, others) to obtain degrees or get additional education
  - Share course credit
  - Counseling
  - On-line courses



# Job Listings

*If you would like a job listed here, please send your information to [Fleming.Training@tn.gov](mailto:Fleming.Training@tn.gov) and we will post your job listing for 60 days.*

# Washington

- Working with the Department of Corrections to get certified operators to run prison water systems
- Certify 10 – 15 operators per year
- Use paper based exams (only ones in the state)
- Trying to develop a specific curriculum for these operators
- Can get certified in 1 year and one of the most sought-after job in the prison
- Reoffender rate is lower since these released prisoners have a marketable skill in a highly sought-after job area
- Predominantly non-violent offenders; only 1 issue when a sex offender had to register and couldn't be hired

# Operator Test Prior to Experience

- In cases where operator is ready to take the higher levels of the test but don't have the required amount of experience, WA is allowing them to take the test and be an "Operator in Training"
- Proves to the system that the individual will be able to be certified as soon as they have the experience
- If within 1 year of getting the experience, get a Temporary Certification
- Can help a system get higher level operators (provides assurance that they will get there)

# Sustainable Infrastructure Program

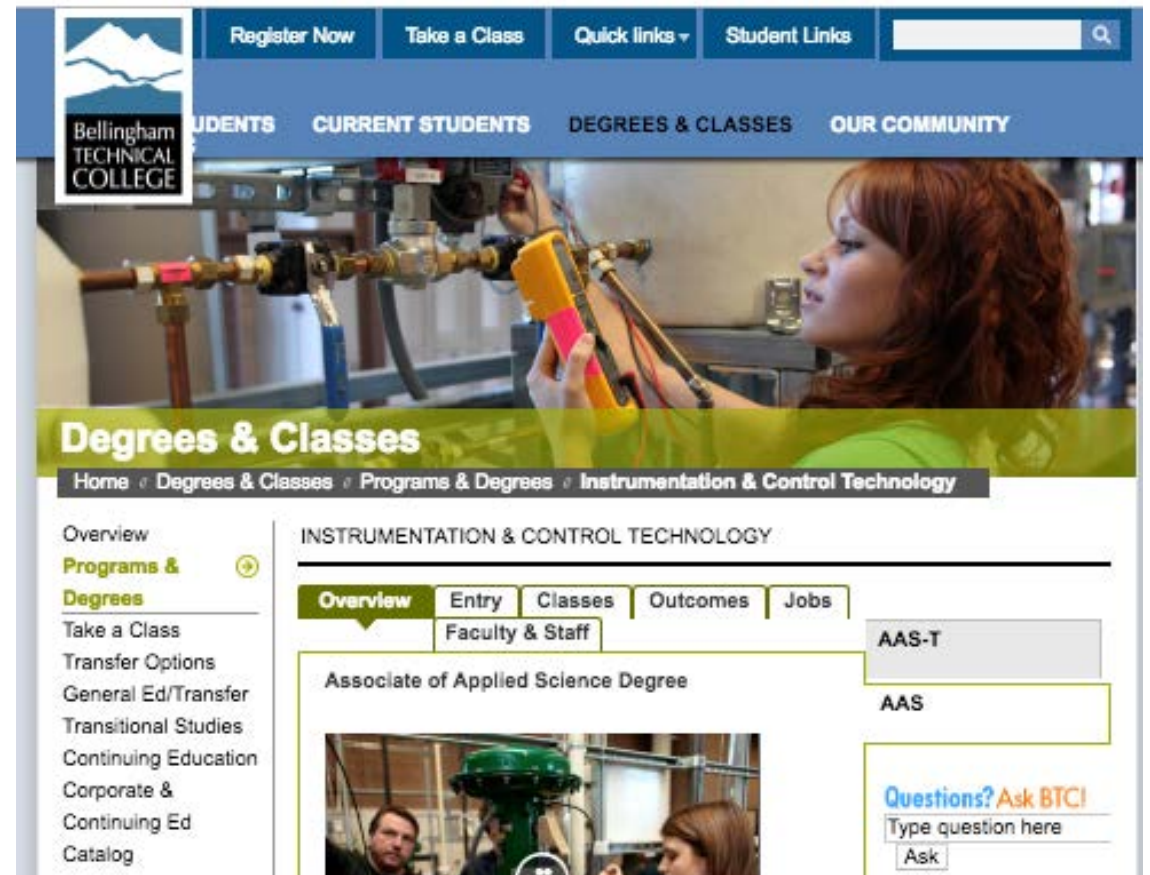
- Evergreen College is working on a sustainable infrastructure program that will include workforce
- Want to have an understanding that it is necessary to have a well-trained workforce to protect infrastructure investments

# Value of Water Campaign

- Did placards on buses and elsewhere
- As part of the program asked utilities of all sizes what the most important issues to communicate to the public and they said infrastructure and workforce.
- State is trying to include language around workforce in all their reports and trainings

# Bellingham Technical College

- Offering instrumentation courses that are training people to work in water utilities



The screenshot displays the Bellingham Technical College website. At the top, there is a navigation bar with links for 'Register Now', 'Take a Class', 'Quick links', and 'Student Links'. Below this is a main menu with 'STUDENTS', 'CURRENT STUDENTS', 'DEGREES & CLASSES', and 'OUR COMMUNITY'. The central banner features a photograph of a student working on a complex piping system in a laboratory or industrial setting. Below the banner, the 'Degrees & Classes' section is highlighted, with a breadcrumb trail: 'Home > Degrees & Classes > Programs & Degrees > Instrumentation & Control Technology'. On the left, a sidebar menu lists various options: 'Overview', 'Programs & Degrees' (which is selected), 'Take a Class', 'Transfer Options', 'General Ed/Transfer', 'Transitional Studies', 'Continuing Education', 'Corporate & Continuing Ed', and 'Catalog'. The main content area is titled 'INSTRUMENTATION & CONTROL TECHNOLOGY' and includes sub-tabs for 'Overview', 'Entry', 'Classes', 'Outcomes', and 'Jobs'. Under the 'Overview' tab, it lists 'Associate of Applied Science Degree' and 'AAS-T'. A search box for 'AAS' is visible. At the bottom right, there is a 'Questions? Ask BTC!' section with a text input field and an 'Ask' button. A small inset image shows two students in a lab setting.

# Saipan: Northern Mariana's Trade Institute

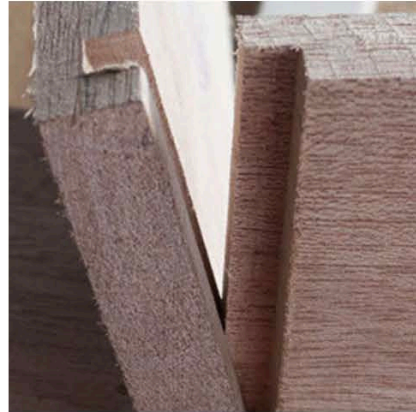


**NMTI**

**Northern Marianas  
Trades Institute**

## Our Construction Trade Programs

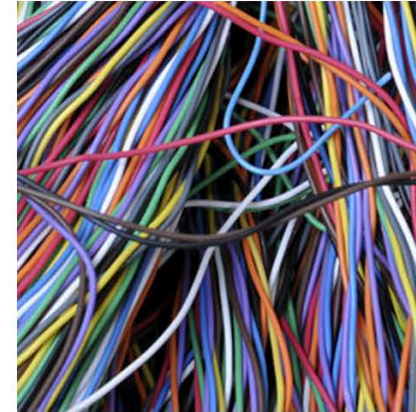
(click on images for more information)



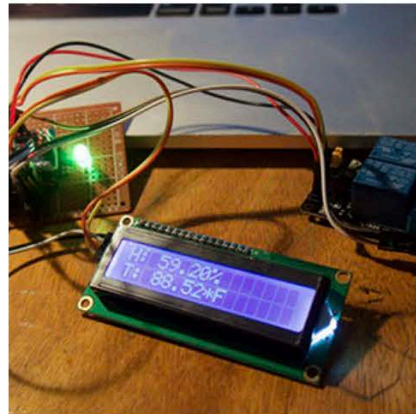
Carpentry Program



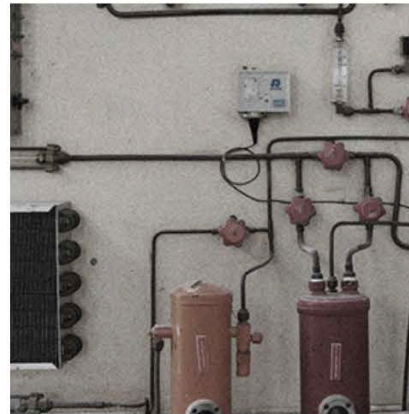
Construction Technology Program



Electrical Program



Electronic Systems Technician Program



Heating, Ventilation, Air-Conditioning Program



Welding Program





**RCAC**

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# The Silver Wave Impact on Small Systems

CIFA Conference  
Albuquerque, NM  
November 4, 2018



**RCAC**

Presented by:

Olga Morales

Regional Manager – NM

[omorales@rcac.org](mailto:omorales@rcac.org)

# Rural Community Assistance Partnership, Inc.

## Western

**Rural Community Assistance Corporation**

916/447-2854

[www.rcac.org](http://www.rcac.org)

## Midwest

**Midwest Assistance Program**

952/758-4334

[www.map-inc.org](http://www.map-inc.org)

## Southern

**Communities Unlimited**

479/443-2700

[www.crg.org](http://www.crg.org)

## Northeast

**RCAP Solutions**

800/488-1969

[www.rcapsolutions.org](http://www.rcapsolutions.org)

## Great Lakes

**WSOS Community Action Commission**

800/775-9767

[www.glrca.org](http://www.glrca.org)

## Southeast

**Southeast Rural Community Assistance Project**

866/928-3731

[www.southeastrcap.org](http://www.southeastrcap.org)



800/321-7227

[www.rcap.org](http://www.rcap.org)





# Small Systems – Common Conditions

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Operated and managed by COMMITTED volunteers:

- Operating in multiple roles
- Lacking managerial capacity
- Unable to offer competitive salaries
- Unable to offer benefits

*Lacking Economies of Scale*

# Capacity Development – Individual System

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## Change the Mindset:

- From reactive to proactive operating mode
- Non-Business to Business Model
  
- Establish rates to cover the true cost of water to:
  - Hire qualified staff
  - Give the option to outsource

# Capacity Development- Individual System cont'd.

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As operators retire establish Non-Traditional Agreements:

- Part-Time positions
- Mentoring
- Consulting on-demand

# Capacity Development – Utility-to-Utility

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## Traditional Agreements

- MOU/MOA
- Contractual agreements

## Consolidation

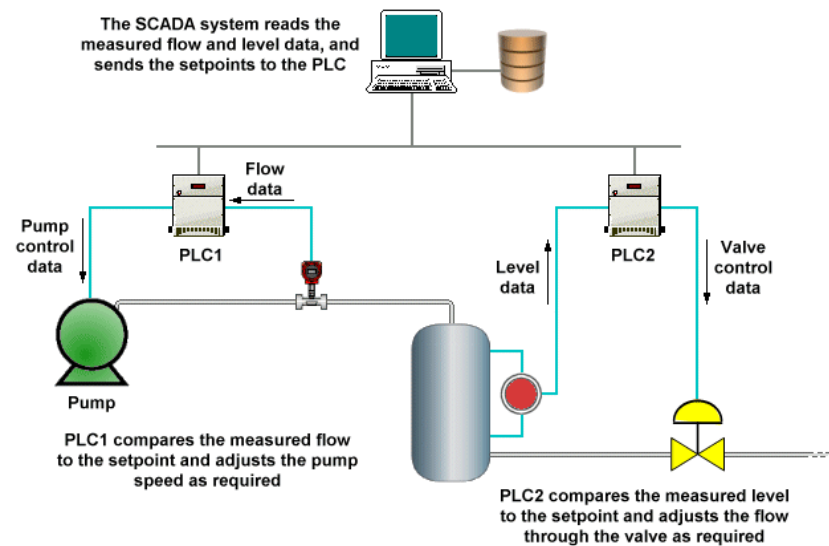
- Partial Consolidation
- Full Consolidation

*Generates Economies of Scale*



# Technical Transitioning

- Technology
  - SCADA
  - Smart meters
  - Digitalization
- Asset Management
  - Inventory
  - Mapping



# Opportunities Created by the Silver Wave

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- Form new networks
- Develop economies of scale
- Establish rates to cover the true cost of water
- Create and operate as businesses
- Grow financial capacity
- **Create sustainability**

# Thank you!

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