



Workforce Development

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu



Or by another name...

- Human Capital Management



Agenda—Workforce Development Process

- Review your workforce
- Identify who's leaving
- Consider changes in your needs
- Analyze skill gaps
- Find new people



Workforce Development Process

- **Review your workforce**
- Identify who's leaving
- Consider changes in your needs
- Analyze skill gaps
- Find new people



Who Works in Water

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



Who Works in Water

- What people within your organization work in water? Let's make a list
- How critical are these people to your operations? How easy will it be to replace them?



Workforce Development Process

- Review your workforce
- **Identify who's leaving**
- Consider changes in your needs
- Analyze skill gaps
- Find new people

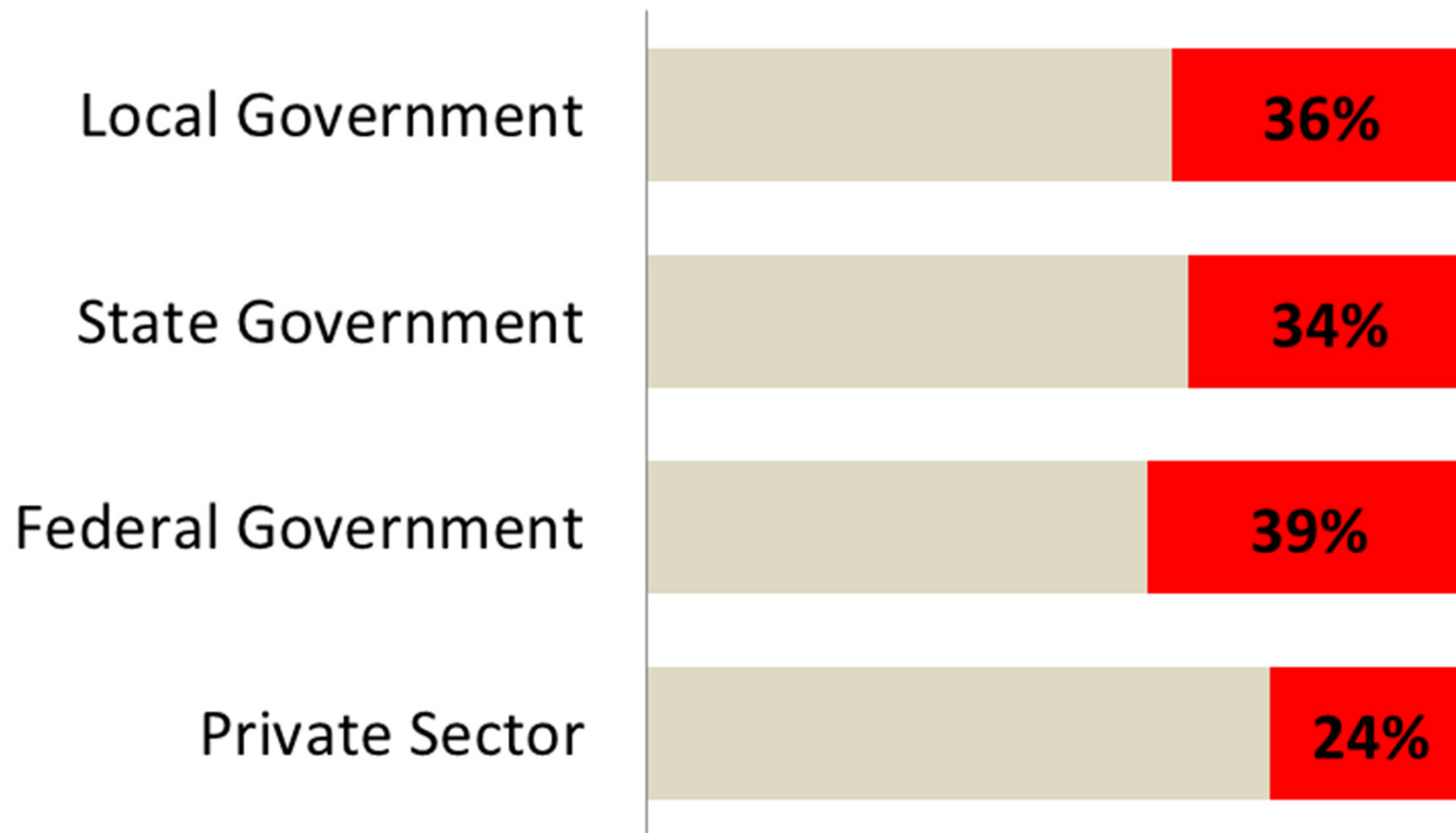


Are you ready for people to leave?

- Retirement
- Leaving for a different job
- Other circumstances...

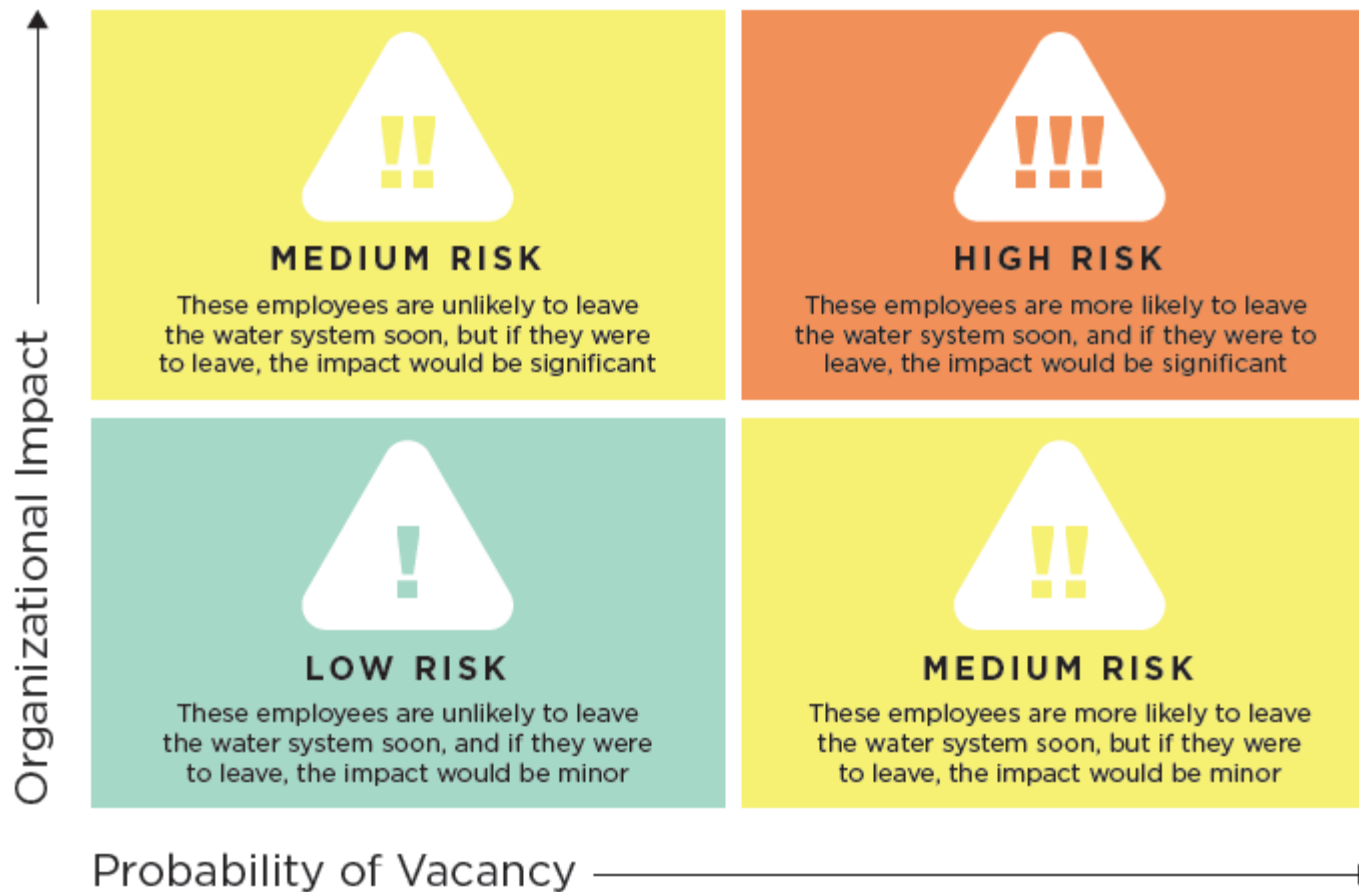


Many U.S. workers are **aged 50+**





Human Capital Criticality





Workforce Development Process

- Review your workforce
- Identify who's leaving
- **Consider changes in your needs**
- Analyze skill gaps
- Find new people



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



Are the knowledge, skills and abilities changing?

- What might we expect in the next 5 to 10 years?
- Think about environmental changes, political changes, technological changes, and regulatory changes



In other words...

- 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

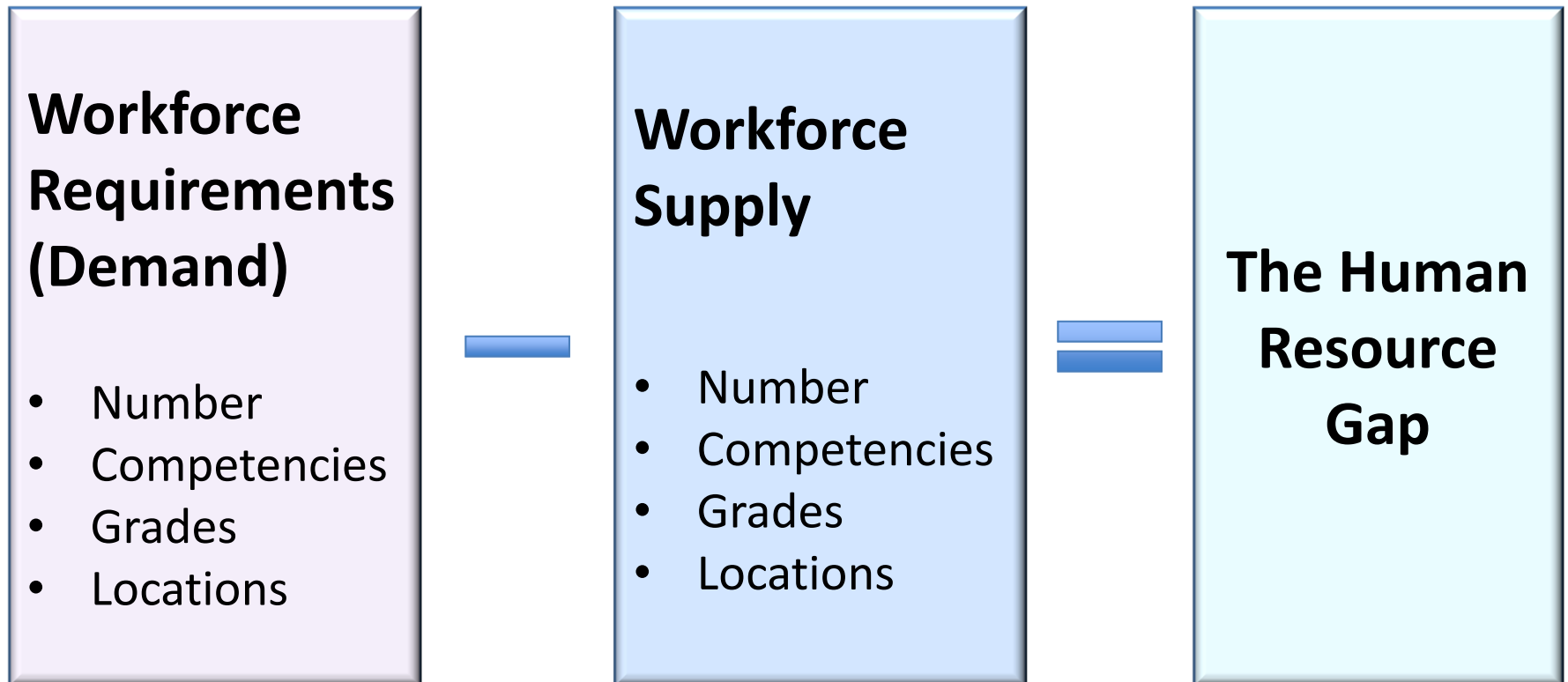


Workforce Development Process

- Review your workforce
- Identify who's leaving
- Consider changes in your needs
- **Analyze skill gaps**
- Find new people



Analyze Skill Gaps





New York Water Environment Association Survey

- 2015 survey of 300 water operators and 13 managers on operator needs and recruitment challenges





Operator-Identified Challenges

- Lack of management support and insufficient communication
- Time needed to become certified and compensation
- Tight budgets, loss of staff, lack of public appreciation, and few opportunities for advancement



Operators also say...

- The most satisfying aspect of their work is contributing to the environment and public health



Manager-Identified Challenges

- Many current employees are not interested in obtaining higher levels of certification
- Candidates holding high school diplomas or GEDs often struggle to pass the grade 3 and 4 certification exams



Both Say

- Inadequate pool of replacement certified operators to meet present needs



Both Say

- Candidate pool lacks needed skills
 - Science and math skills
 - Soft skills like management capabilities
 - Desirable personal characteristics

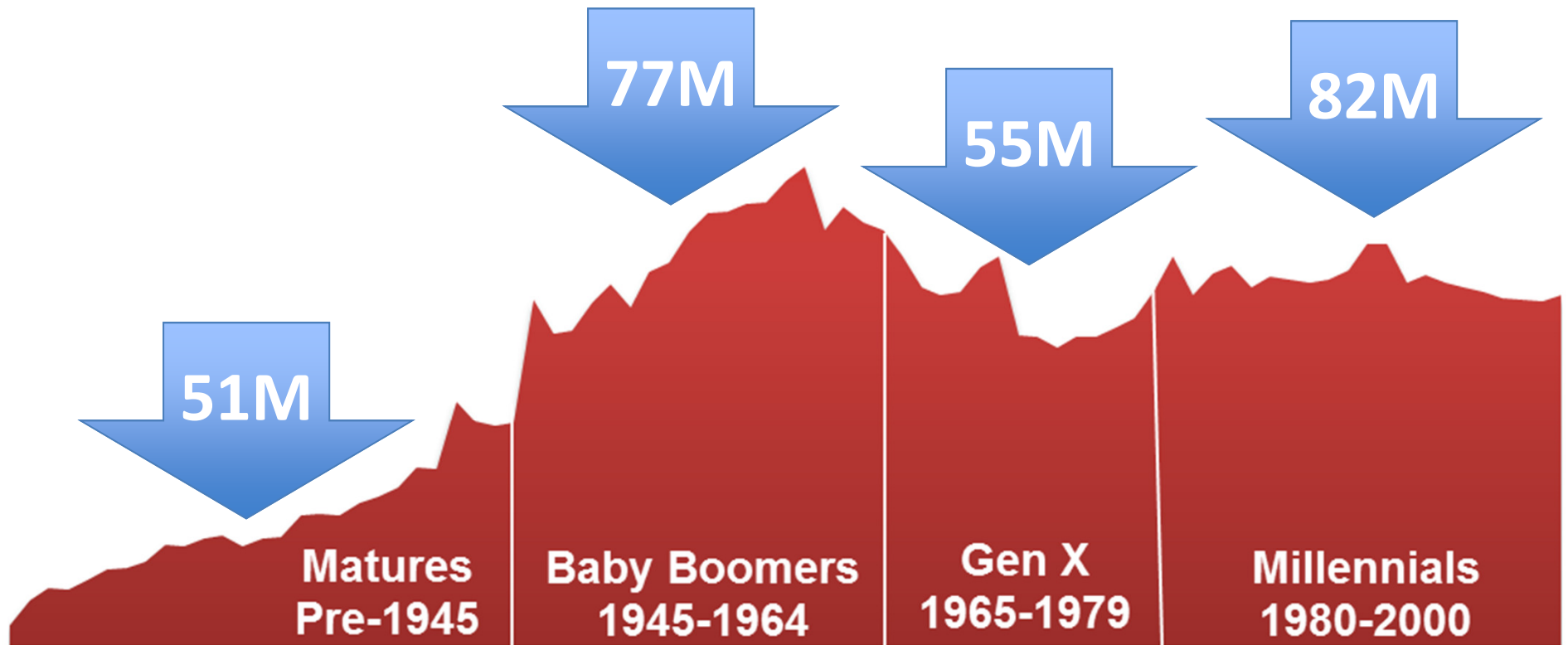


Workforce Development Process

- Review your workforce
- Identify who's leaving
- Consider changes in your needs
- Analyze skill gaps
- **Find new people**



The US Population Today





Our Workplace Reality...

by 2020, **Millennials** will comprise at least

50% of the workforce



Baby Boomers & Generation X

Millennials



Creating Interest in Water Careers





Why should someone work in water?

- Meaningful work
- Environmental stewardship
- Public service
- High tech nature
- Stable employment
- Good salary
- Professional development
- Small town living



Meaningful Work





Environmental Stewardship



We Are Committed to Sustainable Business Practices

The Middlesex Water family of companies is committed to the support of sustainable business practices that reflect responsible water and wastewater management. As a provider of water and wastewater services, we look to continuously improve our environmental performance through economically sound, ecologically sensitive, and technologically practical processes.

70% of the Earth is water. From seas to lakes, to rivers and creeks, water is everywhere. Valuing water means valuing our future.

– Value of Water Coalition



www.efcnetwork.org



UNC
ENVIRONMENTAL FINANCE CENTER



Public Service


WATER'S WORTH...

 YOUR RESPECT	 YOUR EFFORT	 YOUR HEALTH	 YOUR FUTURE	 OUR PASSION
<p>Communities are Built on Water Unlike people in many parts of the world, Americans have access to safe and clean water and sanitation services. Our water and wastewater treatment systems are workhorses. Every community is literally built on top of this infrastructure and wouldn't be possible without it. You may not give it a second thought, but now's the time to stop and think about water and how essential these services are to your life.</p>	<p>Clean Water is Everyone's Responsibility We all consume water and create waste. In fact, the average American uses 170 gallons of water a day. Every drop that enters your home or business is treated and discharged back into the water cycle. Water is a finite resource; it must be managed well. Everybody uses water. Everybody is responsible for it.</p>	<p>Water IS Life Up to 60% of the human body is water, the brain is 70% water, and the lungs are nearly 90% water. We are made of water and we can't survive without it. But the water we need also must be clean. Water and wastewater treatment has changed the lives of millions of Americans—all but eliminating fatal diseases like cholera, typhoid, dysentery, and hepatitis. America has some of the cleanest, safest drinking water in the world and it must be preserved. Your life depends on it.</p>	<p>Dealing with an Aging Infrastructure Turning on the tap or flushing the toilet is as simple as turning a knob or pushing a handle. What you don't see is the vast infrastructure—800,000 miles of water pipe and 100,000 miles of sewer line—that takes over from there. These systems have worked silently for years, in some cases more than a century, without major interruptions, but now they need your attention. Your investment is needed to keep infrastructure functional for current and future generations.</p>	<p>Finding Solutions for the 21st Century The water sector constantly seeks innovative solutions to community and water system challenges. Undertaking efforts, such as reclaiming water for reuse and generating energy from wastewater, enable the sector to adapt to our changing environment and be good caretakers of our water resources. Water professionals have dedicated their careers to providing clean and safe water to protect everyone's health, planet, and quality of life. Water is our passion.</p>

Water connects us. Water is a ride on a boat. Water is a sprinkler, making children laugh with joy. Water brings families and friends together in countless ways.

— Value of Water Coalition



High Tech Nature



Nano Filtration Membrane System
(Pilot Butte, Saskatchewan, Canada)



The Aqua Drone
(VITO)

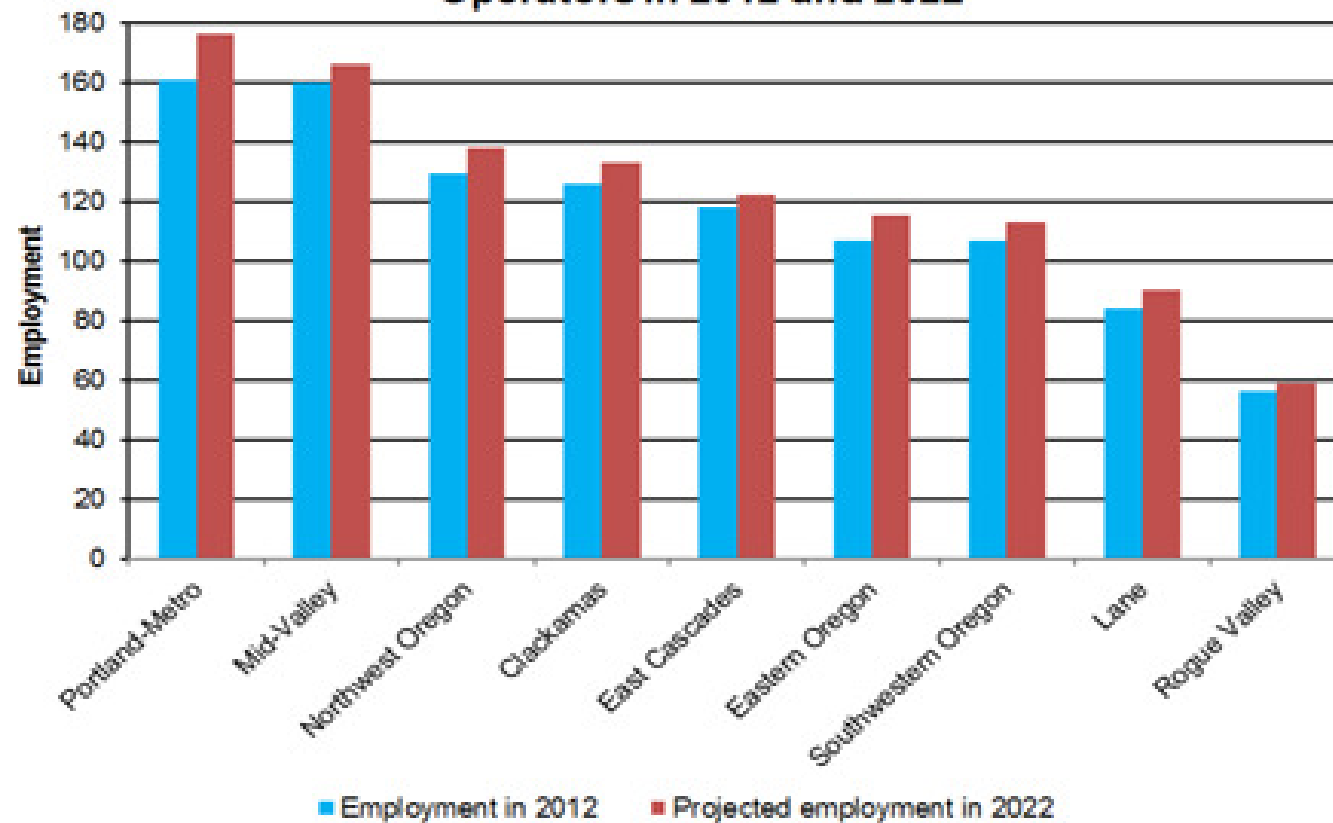


SCADA with remote access
(Shrader Engineering)



Stable Employment

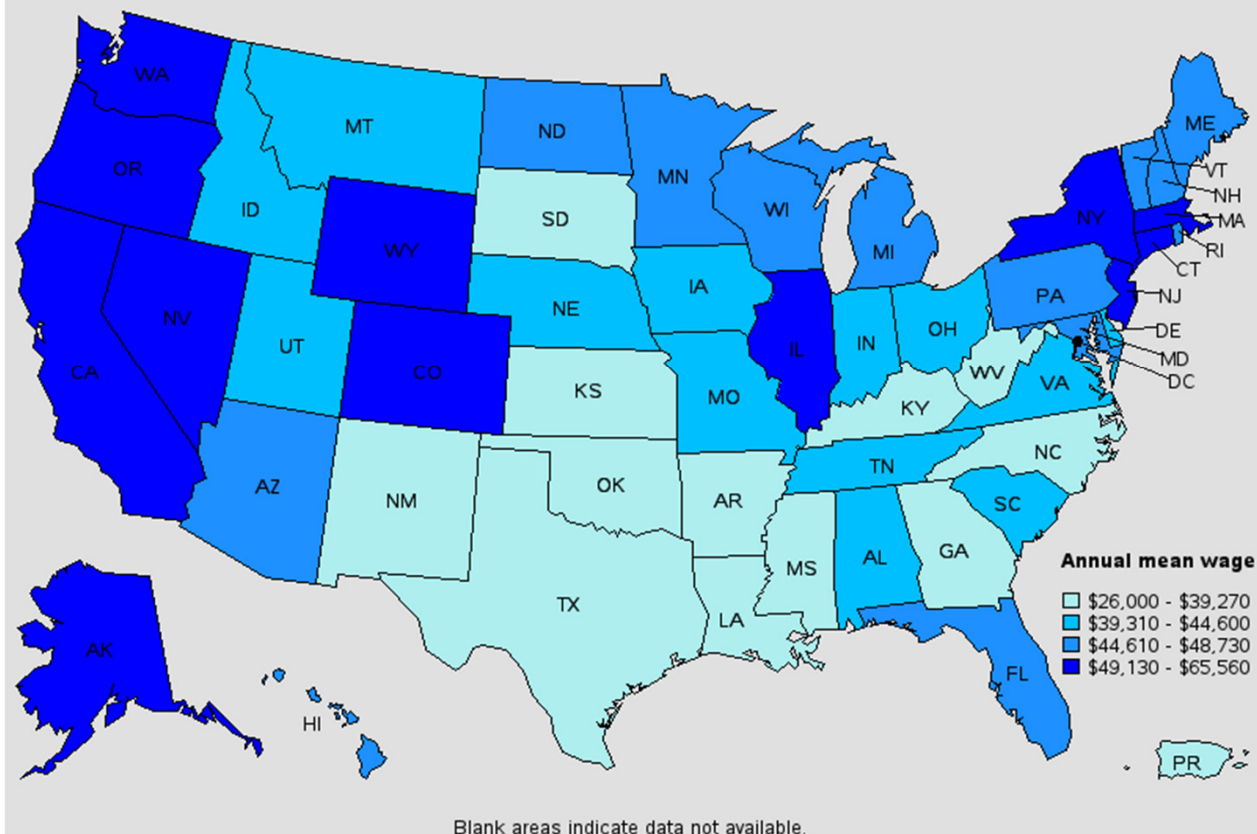
Oregon Employment of Drinking Water and Wastewater Operators in 2012 and 2022





Good Salary

Annual mean wage of water and wastewater treatment plant and system operators by state, May 2014





Professional Development



Earn CE Credits!

Spring Water Treatment Operator
Courses:

Level 3 | April 25 - May 27

Spring High-Tech Operator
Courses:

Level 2 | April 18 - May 7

Level 3 | May 9 - May 28

ELEARNING PROGRAM

Welcome to AWWA's eLearning program, offering **self-paced** and **instructor-led** online courses for water industry professionals. We offer quality training and **professional development and continuing education units (CEUs)** with the ability to learn on your own time and at your own pace.

Explore a variety of subjects, methods, and strategies with an **eLearning Subscription** or **Webinar Bundle**. Available for individuals and organizations!

AWWA members receive discounted pricing on Distance Learning products. Learn more about [membership](#).

FEATURED COURSES

NEW! Total Water Solutions Courses

- **EL206 - Why Are Water Service Lines Important**
- **EL207 - Residential Meters**
- **EL208 - Fire Hydrant Basics for Pressurized Water Systems**



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

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



Small Town Living





How to Find Good Employees





Develop a Formal Recruitment Process





Employee Referral Program

ENVIRONMENTAL FINANCE CENTER | PARTNERS

REFERRALS

THEY REALLY PAY OFF

\$150

THAT'S RIGHT! YOU CAN MAKE UP TO \$150 FOR EVERY PERSON YOU REFER

BONUS DETAILS
 Applicants must put your FULL NAME on their application when they apply.
 The number of bonus referrals is limited and will increase over time.

Who do you know?

- You know great people.
- We're looking for great people.
- You refer them to us.
- We hire them.
- You earn cash or extra PTO for every referral hired and gift opportunities for every referral interviewed!

1 = \$750

2 = \$1,500

5 = \$2,250

Get the idea?
Now there's...

Even More to Think about

Get more details about the program at:

www.drivetime-erp.com



Cast a Wide but Targeted Net



**Professional
Organizations**





K-12 Outreach Opportunities

- In-school educational programming
- Offer field trip opportunities
- Host camps
- Internships for high school students
- Participate in career fairs/days



K-12 Outreach Opportunities



High school internship
(The Urban Water
Institute, KSU)



Kid's Camp
(City of Fresno Water
Division)



In school programming
(Jacksonville Electric
Authority)



Post-Secondary Outreach Opportunities

- Design and implement post-secondary internship programs (technical schools, community colleges, and universities)
- Participate in career fairs/days



Post-Secondary Outreach Opportunities



INTERN PROGRAM

Inland Empire Utilities Agency provides college students (undergraduate or graduate level) or an individual who has graduated from an accredited college or university the opportunity to explore a wide range of career paths within a regional wastewater treatment agency. Interns are assigned to an Agency department for a specific period of time to learn the administration and operation of the Agency. Assignments may include general administrative duties as well as working on special projects.



Professional/Mid-Career Outreach Opportunities

- Employee referral program to encourage existing workforce to introduce new candidates
- ‘Citizens Academy’ to introduce department and expose current professionals to potential careers



Professional/Mid-Career Outreach Opportunities



What Is The Citizens' Academy?

The City of Richmond Department of Public Utilities (DPU) Citizens' Academy is a four-week program that provides Richmond citizens an inside look at the operations of DPU. Participants will be introduced to the five utilities DPU operates: natural gas, water, wastewater, stormwater, and electric streetlighting. Tours of various DPU facilities and demonstrations of equipment will be conducted. This program will provide citizens an opportunity to ask questions about the department's operations.



www.efcnetwork.org



UNC
ENVIRONMENTAL FINANCE CENTER



Veterans Outreach Opportunities

- Explore funding/career placement services (federal and state)
- Partner with Veterans Upward Bound at local universities (if applicable)



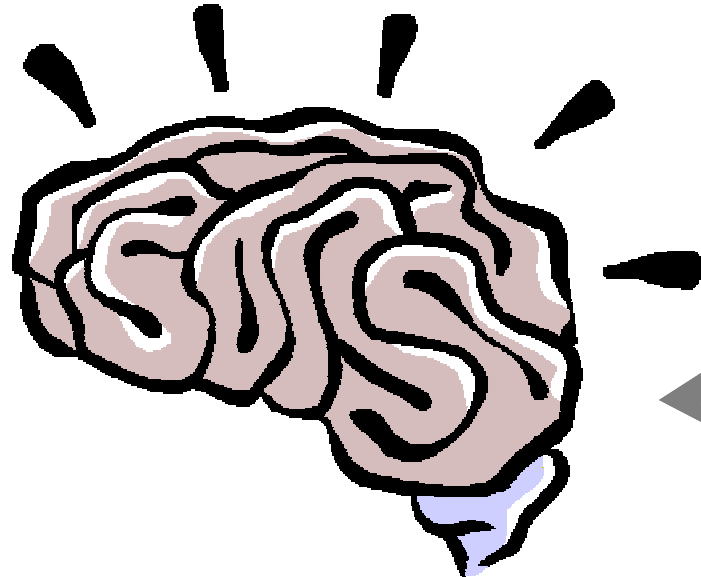
Veterans Outreach Opportunities





And once you find new people...

- Make sure they know what your departing employees know



Not a
good
long-term
database
solution



Knowledge Transfer

- Institutional knowledge
- Technical know how
- Tips and habits
- Internal and external relationships



Workforce Development

Glenn Barnes

Environmental Finance Center

The University of North Carolina at Chapel Hill

919-962-2789

glennbarnes@sog.unc.edu