



Gray Hair Syndrome:

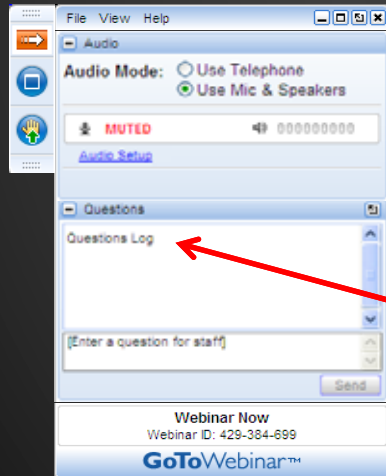
Training Newbies in a Wave of
Retirements

November 9, 2016

1:00 -3:00 p.m., Eastern Standard Time



How to Participate Today



- Audio Modes
 - Listen using Mic & Speakers
 - Or, select "Use Telephone" and dial the conference (please remember long distance phone charges apply).
- Submit your questions using the Questions pane.
- A recording will be available for replay shortly after this webcast.



Today's webcast is brought to you by:

WEF's Collection Systems Committee

Luis Leon, CSC Chair
Bri Nakamura, WEF Liaison



Today's Moderator:
Maureen Durkin, PE
Metropolitan Water Reclamation
District of Greater Chicago



Webcast Sub-Committee Members

- Mattie Engels
- Abraham Araya
- Maureen Durkin
- Chris Gainham
- Gunilla Goulding
- Scott Helfrick
- Chris Johnston
- John Nelson
- Lisa Riles
- Reggie Rowe
- Chip Smith
- Jodel Wickham

Special Thanks to WEF Staff:

- Heidi Tierney



Our first speaker

- Jay Sheehan
- Woodard & Curran
- Senior Vice President
- Registered Professional Engineer
- Licensed Water System Operator



Our second presentation

- Baltimore City Department of Public Works
- Program aimed at helping Baltimore youth while addressing Public Works' staffing needs



Sustaining Talent

Succession Planning to Ensure Utility Staffing Continuity



Presentation Overview



1. Aging Infrastructure - How does this affect the workforce?
2. The Aging Utility Workforce - Why is this a problem?
3. Is This an Issue for My Utility?
4. How to Develop a Utility Succession Plan
5. Examples & Alternatives to Consider

The Issue: Aging Infrastructure Nationwide

- EPA estimate: \$655B+ to repair/replace utility infrastructure over the next 20 years
- ASCE grade for water & wastewater infrastructure: D
 - Much buried infrastructure is past its useful life
 - Since 2007, Feds have mandated \$15B to eliminate CSOs
- Highly visible crises like Flint raise the stakes



The Issue:

Aging Infrastructure Nationwide

- More than one million miles of water mains are in place in the United States
 - ~240,000 water main breaks per year.
 - Many pipes installed 100 years ago are still in the ground



The Issue:

Aging Infrastructure Nationwide

- The funding gap for water & wastewater systems is in the billions annually
- Congressional appropriations are declining & states cannot full fund the need
- Nationwide, SRF funding has declined for 3 consecutive years



The Issue:

More Investment = More Jobs



- National averages show more investment is needed:
 - 650 water main breaks every day
 - 16% of treated drinking water is "lost"
 - CSOs release 850B gals of untreated sewage into US waterbodies
- Benefits of investment
 - 3.68 jobs created in the national economy for every 1 job in water & wastewater
 - 26,000 jobs created for every \$1 billion invested



WOODARD & CURRAN

The Aging Utility Workforce

Why Is This a Problem?

The Issue



- Public demand for services is growing & new regulation requires infrastructure - both result in job creation
- Other industry job opportunities are excellent for technically-skilled workers
- Operator certifications are becoming more challenging to obtain & maintain
- Utility technology is demanding more expertise & different skill sets



The Issue - More Jobs to Fill

Water & Wastewater Projected Job Growth

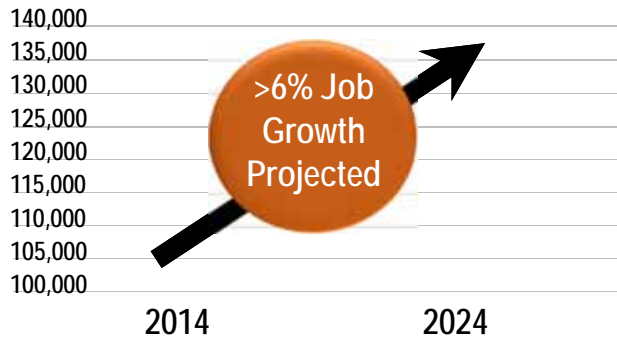


Source: USDL, Bureau of Labor Statistics



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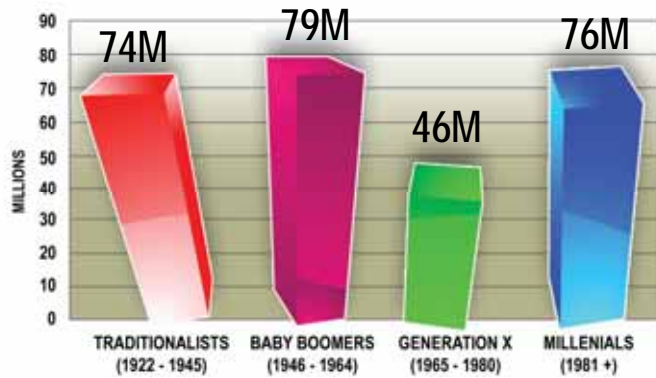
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Job Demand vs. Work Force Supply



Workforce Demographics

Percentage distribution by employment, by age group, 2015

AGE GROUP	WATER & WASTEWATER OPERATORS	ALL INDUSTRIES
16 to 19	0.00%	3.18%
20 to 24	4.49%	9.42%
25 to 34	13.48%	22.00%
35 to 44	25.84%	21.00%
45 to 54	31.46%	21.93%
55 to 64	20.22%	16.78%
65 and older	4.49%	5.69%

Source: Bureau of Labor Statistics, <http://www.bls.gov/cps/cpsaat11b.htm>

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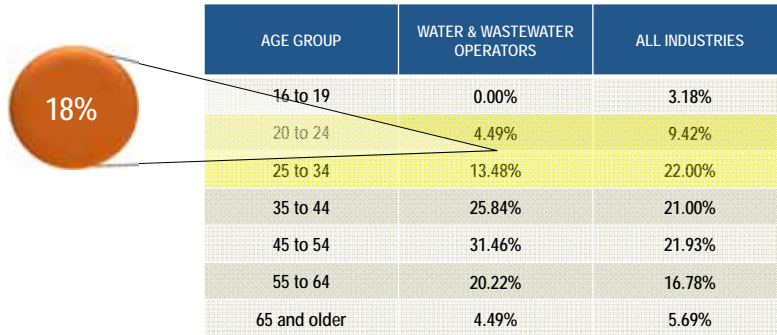
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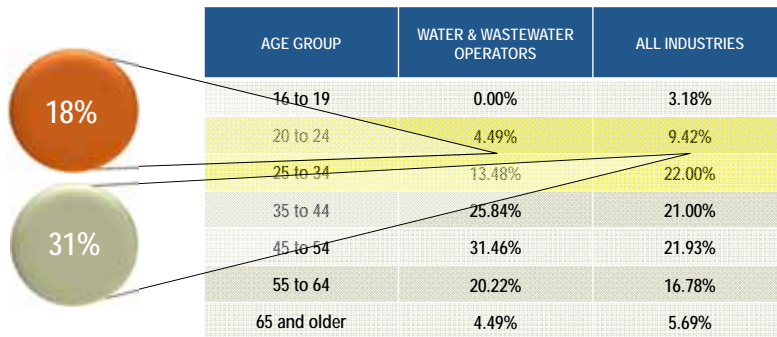


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Regional Differences



In the Northeast & West, the situation is *more* severe:

- > Northeast average is 49.6
- > West average is 46.9

In the Midwest & South, the situation is *less* severe:

- > Midwest average is 41.2 years old
- > South average is 40.0 years old

Nationwide, plant operators in *metropolitan areas* are older than in *non-metropolitan areas*:

- > Average is 42.4 to 36.9 years old, respectively



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WERF says average retirement age for utility workers is 56!



Who is affected?




- No job classification is immune (supervisors, operators, engineers, etc.)
- The retiring workforce means a loss of applied knowledge—we need to capture it before it “walks out the door”
- Developing a sustainable & qualified workforce at a Utility is a vital issue



State Research (Florida Report)


- 37% of water workers will retire in next 10 years
- 31% of wastewater workers will retire in next 10 years
- 2,500 new licensed Water Distribution operators will be needed this decade
- Only 20-30% are passing ongoing Operator Certification Program Exams
- Career field perceived as “*not sexy*” by FL students





WOODARD
& CURRAN



Is This an Issue for My Utility?
What Are the Signs?



Water Environment
Federation
the water quality people

Key Factors to Look For...

You might have a problem if:



Water Environment
Federation
the water quality people

Key Factors to Look For...

You might have a problem if:

- Average employee age >45
- Open positions for long periods
- Losing staff to other industries
- Compensation is not competitive
- No formal mentoring program
- Upcoming retirements without a plan for replacement
- No internship program



What can I do?



What Is a Succession Plan?

- A defined program that a utility systemizes to ensure leadership continuity for all key positions by developing activities that will build personnel talent from within
- A Succession Plan is essential to safeguarding the future of your Utility



Succession Plan Strategy



5 Steps to Resolving Staffing Issues

- **Step 1:** Evaluate Staffing Needs & Technology Options
 - **Step 2:** Develop an Internship / Mentoring Program
 - **Step 3:** Target Related Fields as a Resource
 - **Step 4:** Develop Training Programs
 - **Step 5:** Offer Competitive Wages
- *Interim option: consider alternative arrangements*

5 Workforce Strategies



Step 1:

Evaluate Staffing Needs & Technology Options

- Today's economic environment requires efficiencies
- Understand state regulations on staffing
- GIS & SCADA can enhance information sharing
- Increased automation also provides opportunities
- Tablets & smart phones improve efficiency & remote capabilities



5 Workforce Strategies



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- Tablets & smart phones improve efficiency & remote capabilities

↓ Less focus on manual processes
 ↑ Use staff to complete preventive maintenance/ upgrades or assist in other areas



5 Workforce Strategies



Step 2:

Develop an Internship Program

- College & High School graduate unemployment remains high
 - College is very expensive! Get 'em while they are young...
- Graduates are eager for new opportunities
 - A proposed state bill wants to require a college degree for all new operators
- Interns become good employees with a strong connection to their work
 - 86% of interns offered full-time jobs accepted those positions
 - 90% of interns hired were retained after 1 year
 - 73% of interns hired were retained after 5 years



5 Workforce Strategies



Case Study:

Significant Developments in Education

- Portland, CT
 - Nation's 1st High School Water Operator's class (2009)
 - 4 operator certifications in 1st year
 - 14 more certifications in 2nd & 3rd year (plus job placements)
- City of Baltimore, MD
 - Innovative approach to recruiting & development



5 Workforce Strategies



Step 3:

Target Related Fields as a Resource

- Identify & recruit people in closely related industries
- Electricians & mechanics can become certified staff
- Military veterans are a great source for potential employees with technical skills
- Example: Current Woodard & Curran Plant Manager was a local electrician recruited into water treatment

5 Workforce Strategies



Step 4:

Develop Training Programs To Enhance Staff Skills

- Encourage & fund
 - Educational conferences
 - Professional associations
 - Certification exams
- Keep plant staff informed
 - Industry standards
 - New treatment technologies
 - Regulatory changes

5 Workforce Strategies

Step 4:

Develop Training Programs To Enhance Staff Skills

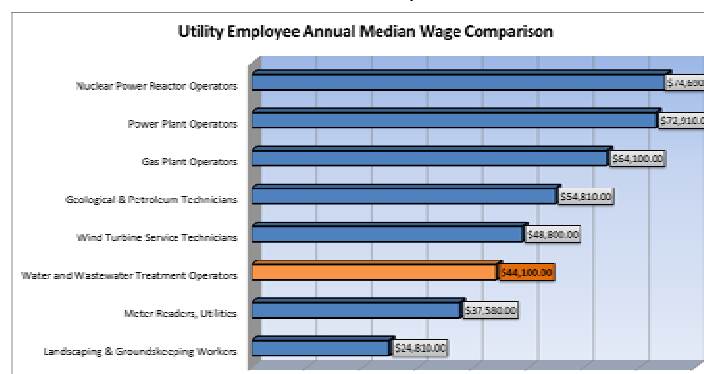
- In-house training is very important (safety, math, chemistry, etc.)
 - Leverage your consultants & vendors
 - Require staff to do “Brown Bags”
- Embrace new projects & challenges as employee engagement tools
 - Empower your employees to take on new tasks - let them learn



5 Workforce Strategies

Step 5: Offer Competitive Wages

- Competition for skilled employees will require utilities to become more competitive:



Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2016-17 Edition, <http://www.bls.gov/looh/home.htm> (visited February 19, 2016).



5 Workforce Strategies

Step 5: Offer Competitive Wages

- Competition for skilled employees will require utilities to become more competitive:



Source: Annual Mean Wage of Operators by State, U.S. BLS, Occupational Employment and Wages (2014); <http://www.bls.gov/bes/currentbes18031.htm>
(Visited February 19, 2016)



Succession Planning Benefits

- Provides an opportunity to assess utility needs & improve operations
- Leaders and key employees are typically identified
- Helps utility managers consider long-range needs
- Encourages younger employees to build careers at a plant & boosts retention



Leverage Technology as Part of Succession



SCADA Programs

- Modern systems provide efficiencies, better manage data, engage workforce

GIS Programs

- Get information out of people's heads & into database

Computerized Work Order Management

- Proactively & effectively maintain / manage your infrastructure & workforce

...and many more options...



Alternative 1: Technology Improvements—Case Study

Smaller Utility

- SCADA repairs & upgrades investment of ~\$30,000
- Reduced staff hours, enabled remote operations
- The utility **saves >\$70,000/year** in staffing costs

Larger Utility

- Could not find qualified staff for 3rd shift
- SCADA upgrades allowed the plant to run unstaffed at times
- Required negotiation with state DEP
- Saved **>\$150,000 on staffing plus 30% less overtime**



Alternative 2: Position Outsourcing—Case Study

Medium-Sized Utility

- Difficulty filling Water Superintendent position
 - February 2013 posting
- Turned to outsourcing in March 2014
- 6-month agreement, has become 2-years
- Cost savings - Utility does not pay benefits (pension, health insurance, etc.)



Alternative 3: Full Outsourcing—Case Study

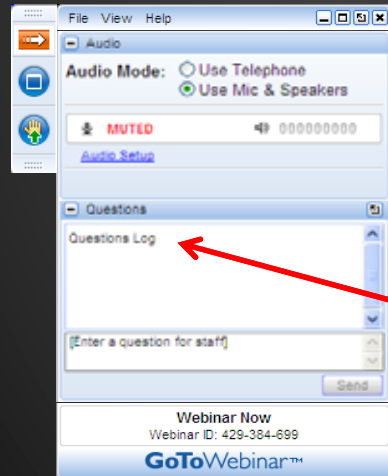


Small Utility

- 2 Water Treatment facilities, distribution & billing
- Contract Operations - outsourced
 - Reduced staffing & pension burden
- System Improvements in first 2 years
 - Job safety improvements
 - SCADA improvements
 - Modern CMMS implemented
 - Staffing optimization
 - Employee training program



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Questions & Answers?



Baltimore Water Industry Career Mentorship Program

A Public/ Private Partnership



101 W. 24th Street
Baltimore, MD 21218
edorsey@oedworks.com
www.oedworks.com
410.396.6721



The Seeds are Sown



CWEA had a chance meeting with the Mayor of Baltimore and were asked about providing summer jobs for youth

City Hall invited MOED to join a meeting with CWEA and DPW to discuss the opportunity

We listened to their vision



CWEA – “We want to expose students to water industry jobs and careers and begin to fill vacant positions.”

MOED – “That’s what we do !”



The Mayor’s Office of Employment Development

- MOED's Youth Services division provides the City's future workforce with the tools they need to succeed in careers in local high-growth industries. The division operates Baltimore City's Youth Summer Jobs Programs, (YouthWorks) as well as job-training opportunities through Youth Opportunity Baltimore and Youth Partner Programs.

Program Model

GOALS

- ❖ Educate local teens and young adults about the water and wastewater industry and its career opportunities
- ❖ Develop a pipeline of future workers with the skills and abilities needed to fill entry-level positions in the water industry



MOED with DPW and CWEA provide:

- Recruitment and screening
- Career readiness training and career exploration
- Tours and job shadowing
- Connection with a career coach/ mentor
- Summer job opportunities through YouthWorks/
Hire One Youth
- Opportunities for full-time employment with
career opportunities



Phase I - Recruitment (January – February 2015)

- Recruit 20 or more interested participants (17-24 years old)
- Conduct assessments of youth
- Provide Code of Conduct and Good Business Practices Training
- Guest Speakers provide participants with an overview of the water industry and its career opportunities
- Provide training sessions for the adult professionals interested in serving as career mentors
- Interview Panel conducts formal program interviews for final 15 participant selection



Phase II - Industry Exposure (March – June)

- Youth take part in a safety training workshop
- Meet twice per week for a total of 8 hours a week for:
 - job-readiness sessions
 - water industry career exploration activities
 - worksite tours
 - job shadowing experiences
 - guest speaker lectures
- Match up the career mentors from DPW and CWEA
- Register for Hire One Youth Summer Jobs by March 31

Phase III - Industry Job Experience (June – August)

- Participants are placed in Water Industry Positions (DPW and CWEA) through Hire One Youth summer jobs
- Mentors Continue to connect with participants
- Participants are prepared to attend a Job Fair to interview with water industry employers
- Participants interview with municipal and private companies



Outcomes

- 34 youth recruited
- 31 youth accepted
- 28 youth completed
- 26 youth hired in water industry
- 1 youth hired in non-water industry
- 1 youth failed a drug test



90% of youth accepted – completed the program
96% of youth who completed – were hired !

Why this model is successful...

Youth must meet a high level **selection process**:

- Must have a HS diploma or GED
- Must be highly motivated
- Youth are interviewed

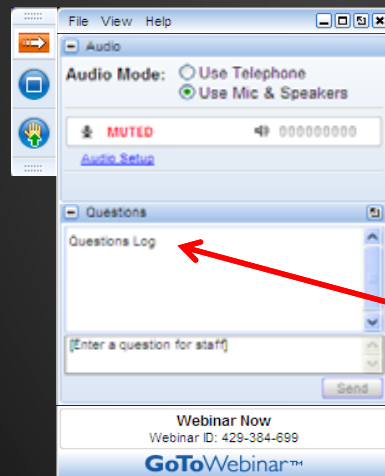
Career Coach/ Mentor

- Each youth is assigned a coach/ mentor who is employed in the water industry
- Career coaches receive mentoring training from Big Brother Big Sister

DPW has over 400 **entry level** positions available



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Questions ?

