



We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.

The Integrity of Investment Operator Workforce Issues



Washington State Department of Health
Office of Drinking Water

Assumptions

- Safe and reliable utilities are a key indicator of vitality; ensuring the economic, social, and environmental health of our communities
- Operation, maintenance, repair, and emergency response are integral parts of public utilities.
- An engaged, informed, and properly compensated operator workforce is paramount to safe and reliable utilities.

Infrastructure Assistance Coordinating Council

- Helping Washington communities identify and obtain resources they need to develop, improve, and maintain infrastructure.
- Improving the delivery of infrastructure assistance, both financial and technical, to local governments

Drinking Water Numbers

- ~3,000 Group A water systems are required to have a certified operator in responsible charge.
- 62 public drinking water systems are currently out of compliance with our certified operator requirement. (<1%)
 - 33 active temporary certifications (high)
- Reviewed >900 exam applications in 2022
- 99% valid email addresses for operators and BATs

Drinking Water Numbers

- We currently have ~3,700 certified operators and ~1550 backflow assembly testers
- ~300 new certified operators in 2022
- 228 Waterworks Operators did not renew.
 - 572 certified operators failed to renew for 2022
- 353 BAT did not meet their professional growth requirement for 2022
 - An additional 58 did not renew their certifications
- >50% certified operator turnover in the last 6 years.

Reason for Concern?

- We've had ~4,000 certified operators for the last 20 years; but we've seen a population increase of over 23% in that time.
 - Every County in the State sees a 1% population increase per year
 - We also see increased;
 - Infrastructure
 - Government Regulation
 - Social Media Stresses
 - Capacity Demands
 - Technology

Remember Life Before These?



The New Phone for 2000



Remember Them?



Steve Goodman
The Best of Asylum
Years Vol 1

John Prine
Fair & Square

imati

Leon Redbone

CD CONTENTS:
Buffett

NEXXTECH

Beaches

52X
700 MB
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CONTENTS DE CD





Why are We Seeing Staffing Challenges?

- Large number of retirements
- Decision Makers don't understand licensing and certification challenges and struggle with long-term planning
- Few entry level positions or in-house training
- Industry is slow to respond to salary needs; industry is unwilling or unable to prioritize salary demands
- Utility operators have no visibility

Millennials and Gen Z

- Next generation wants what we don't currently offer;
 - Recognition for work
 - Teamwork
 - They want to be heard
 - Competitive salaries
 - Flexibility (scheduling and tasks)
 - Job satisfaction
 - Advancement opportunities

Issues with Staffing Shortages

- Prioritizing work/cutting corners
- Deferred Maintenance
- Long shifts/tired operators/no schedule flexibility
 - Existing operators are stressed and burned out
- Legal liability
- Operators aren't available for training opportunities
- Slower response times

Issues with Hiring

- No buffer for the next round of retirements
- Skills gap
- Unions
- Do utilities have a regulated number of operators?
- Catch 22 (need experience to get certifications but can't get hired unless you have a certification)

Workforce Pipeline

1. Job Availability

- a. Educating decision makers
- b. Training/intern/apprenticeship programs
- c. Regulatory changes to encourage forward thinking by utilities

2. Recruitment

- a. Reaching out to high schools (or below) to introduce this work
- b. Special groups like Veterans, the incarcerated, and tribal members
- c. Becoming attractive to Millennials

3. Retention

- a. Proper compensation
 - b. Full staffing at facilities
 - c. Portability of certifications (plumbers, wastewater, electricians, drinking water, communications, etc.)
-

Ideas for ODW




- 2 years of experience is equal to 1 year of secondary education.
 - Change this to 1:1
- Use a proficiency list rather than “time in service” to define part of the experience requirement
- Update/review staffing plans or add to future funding applications

WTPO Minimum Education and Experience Requirements

Certification Level	Minimum Education Requirement (see Table 7 for equivalents)	Minimum Experience Requirement
WTPO 1	12 years	12 months operating experience in a water treatment plant.
WTPO 2	12 years	<ul style="list-style-type: none"> • 18 months operating experience in a water treatment plant; and • 18 months additional water-related experience. • Relevant excess education may substitute for additional water-related experience requirement.
WTPO 3	14 years	<ul style="list-style-type: none"> • 24 months operating experience in a Class 2 or higher rated water treatment plant; and • 24 months additional water-related experience. • Relevant excess education may substitute for additional water-related experience requirement.
WTPO 4	16 years	<ul style="list-style-type: none"> • 24 months operating experience in a Class 3 or higher rated water treatment plant; and • 24 months additional water-related experience. • Relevant excess education may substitute for additional water-related experience requirement.

Need to Know Criteria

9
Questions

-  2 Recall
-  5 Application
-  2 Analysis

Source Water Characteristics Job Tasks Included in this Content Area:

1. Calculate stored water release based on forecasted demand
2. Evaluate the following source water characteristics:
 - a. Biological (bacterial, protozoa, viruses)
 - b. Chemical
 - c. Potential sources of source water contamination
 - d. Physical
3. Measure static water level and pumping levels of wells
4. Measure and monitor raw water source
5. Perform inspections of surface water sources and report any issues that may affect water quality
(e.g., non-native plant species, mussels, algae, erosion)
6. Perform inspections of ground water well sites and report any issues that may affect water quality
(e.g., contamination, flooding, well head protection)

Ideas for Utilities

- Cultural change to encourage work in the trades like [Mike Rowe Works Foundation](#)
- Search for avenues to create “extra” entry level positions
- Explore incentives; apprenticeships, supplemented pay, partial salary for reducing prison recidivism.
- Increase operator visibility
- Develop partnerships between higher education institutions and utilities for entry level operators (Iowa)

Iowa Student Operator Program

- Groundwater treatment.
- The engineering students count participation toward their degree requirements
- University is near the treatment plant.
- The treatment plant developed an 8-week “vigorous” training program where they “Put the students through the ringer”.
- The utility committed resources to develop detailed SOPs, review their processes frequently, and provide continuous training to students.
- They’ve had 20 engineers go through the program since 2014

Increasing Visibility

- Operator spotlights in customer communication or other publications.
- Identify as essential workers, public health/safety professionals, emergency responders.
- Ask about staffing during state project and plan reviews; force the state to support utility workforce
- Celebrate national public works week.
- Get involved in organizations
- Create staffing plans and succession plans

Staffing Plans and Succession Planning

- When critical organizational knowledge is lost, it creates room for errors, and in the utility industry, an error can put workers in dangerous and even fatal situations.
- Digitizing knowledge for the new workforce.
- Automation, AI, remote monitoring
- No matter how automated a utility becomes, we still need on-site operators
- Persuading the next generation to assume key roles may be difficult.

Staffing Plan Criteria

- Determine your goals (business strategy)
- Analyze staffing patterns and changes and project future needs
- Perform a salary survey
- Complete a skills gap analysis
- Consider organizational requirements
- Create a plan for training
- Examine workplace culture
- Regular reviews and updates of the plan

Staffing Plan Criteria (continued)

- Complexity of the work
- Variability of demand
- Hours of operation (24/7 versus 1x/week)
- Age/condition of facilities
- Level of Automation
- O&M resources available to the operator (service contracts, separate O&M crew)
- Other duties assigned to the operator (roads/street, mowing grass)

Staffing Plan Resources

- [Water Operator Hiring and Contracting Guide](#) (331-655) Roles/responsibilities of the owner vs operator in responsible charge
- [Water System Design Manual](#) (10.4.3, 11.4.4)
- Staffing Plan Template (small surface water systems)
 - Reliability features and challenges
 - Degree of automation/process control
 - Days/hours of operation
- Future Staffing Calculator?

Succession Plan Criteria

- Know current and future needs
- Identify key positions
- Determine the required and desired capabilities for the key positions
- Identify potential successors and assess their fit based on capabilities
- Create a knowledge transfer plan (training and mentorship)
- Regular reviews and updates to the plan

Issues with Succession Planning

- When people think about succession planning, they often associate it with their own retirement, death, disability, or resignation.
- Success at one level on the organization chart is no guarantee at higher levels because more responsible jobs are qualitatively different from lower levels
- Overcoming the “like me bias.”
- It can take a long time and results are often delayed.

What are You Seeing?

- Do you have staffing challenges?
- What are the barriers for increasing the number of operators at a utility?
- Have you done a salary survey?
- Do you have apprenticeship, internship, or entry level position training programs?
- Are your “decision makers” cooperative?
- Are there issues with shift lengths and hours?
- What else?

Final Thoughts

- Integrity of investment; infrastructure funding should have long term operation, maintenance, repair, and emergency response considerations.
- Our workforce issues will get worse unless something changes.
- Recruitment is just one small part of the solution. We need to include job availability, training, and retention in the discussions.

Contact Information



Bill Bernier

Waterworks Operator Certification
and Training Section Manager

360-236-3562

william.bernier@doh.wa.gov

doh.wa.gov/DrinkingWater



handle: WADeptHealth