

Decentralized Wastewater Workforce Needs Assessment Results

To address shared needs, challenges, and opportunities in the decentralized wastewater sector, we need a regional collaborative or leadership structure where resources and expertise from other organizations can be strategically leveraged to develop and implement workforce development (WD). This report summarizes the discussion from a participatory session at the MHOA's Annual Conference on October 25, 2023, in Falmouth, MA, focused on identifying regional workforce recruitment, retraining, and retention needs, barriers, and opportunities in the decentralized wastewater sector. About 50-60 people representing a range of occupations within the water sector participated, therefore reflecting diverse experiences and perspectives. Priorities identified in this session include:

- Building capacity – for workforce recruitment and retention;
- Better marketing and re-framing work within the sector– including highlighting benefits of wastewater work and combating the associated negative social stigma;
- Addressing the “grey wave” – the need to recruit and retain a younger, experienced workforce;
- Developing mentorship opportunities – to address the valuable experiential knowledge lost with retirement, cultivating programs and opportunities for knowledge transfer are necessary;
- Enhancing wastewater training – by developing more targeted, accessible, and standardized training across municipalities, along with more training on decentralized wastewater systems;
- Developing a framework for workforce development rooted in regional collaboration – participants identified state agencies, regional industry groups, and trade schools that should have a lead role in developing wastewater workforce initiatives (listed in Table 2).

The expertise required to address needs and challenges identified in this session exists in our region, but to act on these priorities we need 1) collaboration among organizations throughout southern New England to guide and implement WD efforts in the medium and long-term; and 2) financing for these efforts. **If you/your organization are interested in participating in a regional workforce collaborative, please contact Dr. Alissa Cox at alibba@uri.edu.** These findings will be shared with regulators and organizations identified by participants.



Figure 1: ‘Why aren’t there more people working in the water sector?’ To kick off the session, we elicited responses on barriers to working in the water sector (73 responses, 28 individuals). This provides an overview of themes discussed throughout the session.

Recruitment in the Water Sector

Previous public health work followed by exposure via friends and family were the two most common catalysts precipitating work in the water sector cited by attendees. Those with previous public health experience had been Board of Health appointees, previously worked as health agents, or were past (or current) Health Directors. Among those introduced to the sector via friends and family were participants whose "high school friends said it was a cool job," and who had family with previous military experience in drinking water/wastewater. Others were introduced to the water sector through previous work in environmental protection, work in related fields, or by accident having "fell into" working in the sector.

Workforce Needs & Challenges

This topic yielded a lot of passionate discussion among participants, who identified numerous challenges they confronted in their professions. Among those most frequently discussed were 1) an aging workforce, 2) challenges surrounding profession-related licensing, and 3) workforce capacity.

1. An Aging Workforce- "I'm getting old- we all are", stated one group. Another added, our "Older workforce has aged out and is retiring. There is no new, experienced help." Yet another cited, "80% of installers say they are going to retire. [This is] similar with engineers... We need second generation installers." Another cited the need for more positions with varied skill levels and experiences. To bolster workforce capacity, one group suggested developing mentorship incentives for experienced professionals in the field.
2. Licensing- Licensing challenges were discussed in several different contexts. This included varying licensing requirements between different towns and cities, particularly with respect to septic system installers. The cost of licensure for Registered Sanitarians (RS) and Soil Evaluators (SE) was also identified as a challenge. One group identified the high threshold of qualification to enter the industry, citing that other states have septic system design programs that don't require RS and PE licenses.
3. Workforce Capacity- Discussion around workforce capacity centered around the need for sufficient, experienced, and reliable personnel. "There are not enough employees to completely get the jobs done," cited one group. Another suggested it was challenging to find people for "dirty work with a stigma that is physically demanding."

Other challenges identified by participants included the need for more workforce diversity, the need for additional education on alternative technologies, along with challenges specific to the public sector. In the municipal/state government realm, challenges included workforce politics, a lack of clarity from the Massachusetts Department of Environmental Protection surrounding septic system regulations (alternative/remedial/general use definitions), and board members being "uneducated". A challenge identified by a Cape Cod-specific delegation included high housing costs and low wages causing high turnover in the decentralized sector. As to short and long-term jobs needed in the decentralized wastewater sector, the most heavily cited jobs included system installers, engineers, and health agents. Others included qualified electricians, land surveyors, and operators. Two groups re-emphasized concerns around an aging workforce here, stating the need for "young" folks in these positions.

Resources Needed for Growth and Efficiency

Four resource categories were most frequently discussed, including 1) More in-depth and/or periodic training; 2) Funding and Financial Support; 3) Knowledge Sharing; and 4) Stigma-related Resources. Among the other resources participants needed were annual meetings for updates, a bigger workforce, better pay and more benefits, involvement at the state level, and advancements in technology.

1. More In-depth and/or Periodic Training: At a general level participants highlighted the need for more targeted and accessible training and suggested specific training types. One group aptly noted that some towns and cities in Massachusetts do many aspects of public health, while others are primarily focused on wastewater and septic systems, adding that "providing additional refresher courses would improve efficiency for regulators." In terms of training types, three groups wanted

more Soil Inspector/Evaluator classes, one noting that “onsite (and hands-on) training would also be extremely beneficial”. Training on different types of wastewater systems and the installation process, along with installer-gear training was also desired. When it came to accessibility, groups cited the need for consistent training statewide that wasn’t cost prohibitive, and the need for in-person and online training.

2. Funding and Financial Support: Within this resource category, participants identified the need for more grants dedicated to industry growth, more municipal funding to support outsourcing, and funding to “reimburse further education for folks in the field, and for folks retraining after working in an adjacent field of work”.
3. Knowledge Sharing: Here, participants identified the need for “more opportunities for collaboration with other inspectors”, and “mentorship incentives for experienced professionals in the field”.
4. Stigma-related Resources: One group mentioned the need for more education on the stigma while another suggested the need for more prestige, possibly through new job titles. Yet another suggested better marketing of the industry.

Pros, Cons, & Marketing Opportunities for Wastewater Jobs

A comprehensive list of pros and cons is included in the table below. Most frequently cited among the pros were the absence of higher education requirements, job security, and “high pay”. “There is no need for a university degree to run a machine”, one group wrote. When it came to job security, participants stated these were “needed/essential” jobs and that nobody else wanted them. Most frequently cited among the cons were dealing with the stigma, regulators, and smell. “I hate dealing with government”, wrote one participant. Another two groups cited odors along with health risks.

PROS OF WASTEWATER JOBS	CONS OF WASTEWATER JOBS
<ul style="list-style-type: none"> ● NO COLLEGE DEGREE REQUIRED ● JOB SECURITY ● GOOD PAY ● HELPING HOMEOWNER SOLVE ISSUES ● INDEPENDENCE / MANAGE YOUR SCHEDULE ● WORK OUTSIDE ● WORK WITH A VARIETY OF PEOPLE 	<ul style="list-style-type: none"> ● DEALING WITH THE STIGMA ● REGULATORS ● SMELL/HEALTH RISKS ● TENSION BTW. REGULATORS & HOMEOWNERS ● DEVELOPERS DE-INCENTIVIZED BY COSTS ● GIVING BAD NEWS - “system out of compliance” ● LACK OF DIVERSITY ● HOURS ● EQUIPMENT ● WORKING IN BAD WEATHER

In brainstorming ways to market some of these pros and address some of these cons, a major theme that emerged from the session was the need to accentuate the value of clean water. Multiple participants echoed this perception. One group noted, “In New England, the perception that water is infinite is a challenge. Fear is motivating... what happens when resource management doesn’t happen?” One potential solution for accentuating the value of clean water (and addressing the negative stigma associated with wastewater jobs) that participants identified was to “tell awesome wastewater success stories”, like the story of the Boston Harbor Project, or to use messaging such as “there is only one water, let’s take good care of it.”

Other suggestions for better marketing these pros included:

- 1) Working with (and recruiting from) trade and vocational schools to introduce this work as a career option, especially “to those who haven’t grown up in the field”;
- 2) Describing the profitability of the industry along with the high demand for these job types;

- 3) Changing the “yuck factor”, by, for example, changing job descriptions from “wastewater operator” to “clean water operator” or “resource heroine”;
- 4) Cultivating mentorships specific to this field;
- 5) Capitalizing on in-person engagement opportunities by promoting at conferences, hosting in-person facility tours, and recruiting from places people can get hands-on experience;
- 6) Hiring a marketing firm and finding ways to support business with existing WD efforts.

Underlying this conversation about pros and cons was a shared sense of urgency for doing something. One group seemed to capture this sentiment, stating: “I’m honestly not sure how to change perception of Public Health at the community level. Regionalization might be it; renaming or rebranding septic might be it; DEP/DPH involvement at a community level might be it. But I am sure if nothing changes, no one capable or qualified will seek out these jobs in the future.”

Spearheading a Regional Workforce Development Collaborative

Participants invested a lot of effort thinking about who should have a role in spearheading regional workforce efforts in decentralized wastewater, and what their roles might be, as shown in this table.

Organization / Organization Type	# of Groups	Comments / Potential Role in WD
Trade Schools and Vocational Schools	6	“Currently there is not a trade school type program that offers focus on water and wastewater”
State Agencies (MassDEP, MassDPH)	6	“The state needs to build better relationships with each town”; “The state is not at the table with equity”
Yankee Onsite Wastewater Association	6	
Mass Health Officers Association	5	“The MHOA... could build relationships between boards of health, engineers/designers for systems in the area”
Mass Environmental Health Association	3	
Public/Environmental Universities (Cape Cod Community College, UMASS Amherst, and URI cited)	3	Roles include furthering or expanding educational opportunities. Some of these schools previously had wastewater programs.

There was a general sense that more collaboration and relationship-building between these groups was needed. Single mentions included the New England Water Environment Association, the National Association of Wastewater Technicians, the existing workforce (installers, engineers, designers), NEIWPPC and other licensing/credential agencies, Cape Cod organizations (Water Works Career Fair, Cape Cod Young Professionals, Chamber of commerce), and “companies that actually do it”.

Among organizations that could have an important role spearheading a regional workforce development collaborative, trade schools and vocational schools (voc-tech) were most heavily cited. However, it is unclear to what extent voc-tech schools have been involved in conversations around decentralized wastewater WD efforts. We (the facilitators) know that voc-tech schools in southeastern MA are interested in hosting and bolstering wastewater programs, they don’t have the financial resources and expertise to design these programs on their own. We need an entity that can provide leadership

structure to help build partnerships between voc-tech schools and other entities in the industry to address capacity and expertise needs.

Conclusion


We must work collaboratively today to meet the clean water needs of tomorrow. A fragmented approach to wastewater WD will not sustainably address the needs identified throughout this session. A structured, regional collaborative to leverage resources, networks, and expertise is required, and should involve state, municipal, academic, and interest-based institutions identified by participants.

In discussing the need to re-frame wastewater work, there was widespread agreement about the need to tell inspirational stories about how wastewater work has an essential role in society and accomplishes amazing things. We can generate intrigue among younger generations by reframing the stigma and working more closely with schools to make sure wastewater jobs are presented as a viable career choice. Cultivating mentorship opportunities is an indispensable tool for increasing recruitment opportunities and facilitating inter-generational knowledge transfer.

If you or your organization are interested in being part of a regional collaborative and making a difference, we urge you to contact Dr. Alissa Cox at alibba@uri.edu, and engage in conversation about WD needs and solutions with others in and outside of the field.

More Information about This Session

This session was led by panelists from regional water sector groups, non-profit organizations, academia, and a centralized water management authority. In this round-table format, participants were asked to answer an ice-breaker question, and discuss a minimum of three questions, bolded below, including question #5:

- Icebreaker: How and why did you get involved in the water sector?
- Question 1: What workforce needs and challenges do you confront in your profession, organizations, or daily life? Can you share a specific example or two? What specific types of jobs are much needed in the decentralized wastewater sector, both short and long term?
- Question 2: What resources would help you excel or grow in your field of work? What resources would help you be more efficient and effective?
- Question 3: Based on your experiences, what are the pros and cons of onsite wastewater jobs? How might we better communicate/market the pros? And address some of the cons?
- Question 4: Have you/your organization implemented workforce or recruitment initiatives specific to DWS jobs? What worked and what didn't? Where and how did you promote opportunities? 
- Question 5: What organizations can help us lead a workforce effort in this sector? What could their roles in a regional Workforce Development collaborative be?
- Question 6: What workforce-related challenges/needs were not captured in this brief conversation?

Panelists

Alexie N. Rudman, Barnstable Clean Water Coalition

Jennifer Loughran, Barnstable Clean Water Coalition

Dr. Alissa Cox, University of Rhode Island / New England Onsite Wastewater Training Program

Lauren Usilton, J&R Sales and Service / Yankee Onsite Water Association

Maureen Thomas, KleanTu LLC

Michele Gillen, Massachusetts Water Resources Association

Michelle Jenkins, NEIWPCC

Dr. Sara Wigginton, Massachusetts Alternative Septic System Test Center