



# 2022 National Capacity Development and Operator Certification Workshop

## Key Takeaways Summary

Held on August 10-12<sup>th</sup>, 2022  
U.S. Environmental Protection Agency (EPA)  
Association of State Drinking Water Administrators (ASDWA)

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# KEY TAKEAWAYS SUMMARY

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This summary highlights the key takeaways from discussions held during the 2022 National Capacity Development and Operator Certification Workshop co-hosted by the U.S. Environmental Protection Agency (EPA) and the Association of State Drinking Water Administrators (ASDWA). This workshop was hosted to discuss collaborative efforts of the capacity development and operator certification programs, challenges facing providing assistance to small water systems, and what resources and support EPA and ASDWA could potentially provide or develop to support the continued implementation of these programs.

## Ensuring Systems Have Capacity

### Assessments

Technical, Managerial, and Financial (TMF) Capacity Assessments are critical to identify public water systems (PWSs) that lack capacity and prioritize and provide financial and technical assistance to help those PWSs that need it, as well as measure the success of the state's Capacity Development program. A common approach is to provide voluntary self-assessments for PWSs to complete, and many states require this as part of the DWSRF application. However, **states have found it difficult to get more water systems to voluntarily take a self-assessment** on their own, as well as **verify information** once completed. Having good relationships with the water systems and operators to discuss needs and the process for completing a capacity assessment can help improve reporting, and onsite visits are very effective but require staff and resources that are sometimes beyond the state's ability to conduct. Technical Assistance (TA) providers, like RCAP, can also be of assistance to conduct capacity assessments and follow-up with the PWSs that need the most help.



Many states use their sanitary surveys to identify PWSs that may have capacity issues. Sanitary surveys are the on-site evaluation of water source, treatment, pumping and storage facilities, equipment, operation, maintenance of a PWS, and its capability for producing and distributing safe drinking water.

**Sanitary surveys can enhance communication between state Capacity Development, Operator Certification, and Enforcement programs, and PWSs.**

Frequent communication and coordinated actions between these state programs can help to ensure that PWSs feel more trusting and receptive to capacity development program assistance following a sanitary survey.



Integrating capacity development questions into the sanitary survey can be a challenge for inspectors who do not have financial expertise. While financial capacity is not a part of the eight elements of a sanitary survey, states can **include key questions to prompt the inspector to ask some financial questions and/or refer the utility to the state capacity development**

**team for assistance. Questions might include:** “Have you raised rates in the past three years?”, “Do you have 45 days of operating cash on hand?”, etc. States should consider the size of the facility when asking questions, as certain financial questions may not be applicable or beneficial to ask during a sanitary survey.

Common state challenges for conducting TMF assessments include lack of state staff time and resources, data collection, accuracy and accessibility, and not knowing what to do with information once collected. Some states have **electronic sanitary surveys or other databases that allow them to use data, track information and prioritize assistance for PWSs**. States that are using or currently developing databases and/or electronic sanitary surveys to collect this information are (and will be) more able to identify deficiencies and adapt training programs and examinations, as well as target activities to overcome compliance and capacity issues.

## Activities to Support Building Capacity

**Holistic, long-term capacity, and asset management** development are important for water system sustainability and delivery of safe drinking water. Some challenges discussed at the workshop included too many “shelved” asset management plans, high turn-over with operators and board members, and push back on training requirements due to time commitments. States can help support and promote the continued implementation of asset management plans by **offering voluntary assistance and incentives to PWSs**.

**Cyber Resiliency** was one of the hot topics at this year’s workshop. Many states are challenged to encourage small systems to consider best practices in cybersecurity. Some states are using **Peer-to-Peer PWS and Operator Training and Networks**, which also help increase the knowledge base of both operators, engineers, and state staff, as well as encourage collaboration and partnerships among water utilities to strengthen cyber resilience. Some states develop and provide other types of outreach such as educational flyers, introductory-level cybersecurity trainings, and templates for incident response plans. **Flexibility is key** for states to help their PWS’s develop or update a cybersecurity strategy. Accounting for the **individual system’s needs and size can also help states adapt their technical assistance and training efforts**.

**Targeting Training for Board Members and Other Decision Makers** was a key theme during the workshop discussions. Many states highlighted challenges with educating boards and decision makers about responsibilities and liabilities for managing a PWS and **expressed the need for more resources** about board member trainings. States that **conduct continuous outreach** have had success with engaging board members and other decision makers. For example, Alaska provides a welcoming letter to new board and council members that lays out responsibilities and state contact information, and also has regular phone calls and meetings. In addition, Mississippi requires board member training on PWS management and financing, rate



setting and structures, operations and maintenance, applicable laws and regulations, ethics, and duties and responsibilities of a board member.

## Supporting Water Workforce

### Contract Operators

Contract operators are filling critical gaps to support water systems, especially those in underserved and disadvantaged communities across the country. **Ensuring that contractors fulfill their required responsibilities can be a challenge.** Some states have developed templates and video trainings to help PWSs outline guidance for contract operators. Each state has different certification levels and criteria for operators, and one of the ways that states can help contract operators is to provide opportunities for them to have discussions with state staff about expectations and key needs for PWS operations, and facilitate networking to promote partnerships with other contractors.

States shared drawbacks to having specific laws for contract operators which could limit efficiency and reduce flexibility. States should **consider the type and level of work contractors are undertaking to ensure the greatest level of service is being provided.** States and EPA should **consider actions to make contract operator terminology more consistent** to help improve coordination and communication between communities and operators. Some states expressed a need for more examples of contract templates, state laws and language for contract operators, and available resources to assist small systems with addressing operator needs.

### Training and Testing

Going **virtual provides flexibility and consistency in training and testing.** There are some states that have seen higher turnout and participation from smaller systems, and plan to utilize virtual learning for other disturbances like snow days. Some states have also started to utilize virtual trainings to engage with board members, city council members, and mayors.

However, some states have had mixed success with going virtual. **A big challenge is balancing engagement with operators.** States that have offered “self-study” programs have found that although it provides maximum flexibility for operators who may not be able to attend traditional training events, it sometimes resulted in very poor pass rates. States that offer both in-person and virtual trainings reflected that it accommodates different learning styles and ensures operators understand key principles prior to examinations. Best practices for maintaining virtual engagement include **capping class sizes, scheduling shorter classes, utilizing live virtual trainings, and posting quizzes** throughout the training.

A few states, like Utah, create their own certification exams by using their existing manuals and asking for periodic feedback from key stakeholders in their state. Discussions during the workshop highlighted that there is more information to be gained using diagnostics to determine **what subjects are being missed on exams, rather than pass/fail rates.**

## Retaining and Recruiting Workforce

Many states are implementing programs and initiatives to attract workers to the water industry. Hosting **regular outreach and community engagement events can create excitement** among the water systems and increase awareness about water issues. States have also used social media to share information and promote best practices and resources to PWSs and the public. A great way to support the water workforce is to **show appreciation and recognition**. Some examples shared during the workshop included operator awards for number of years of service, a “Take Your Operator to Lunch” program, scholarships, and more.

Some PWSs experience **difficulty filling positions with “undesirable” shifts** for weekends and nights. Some states and water systems have used multiple types of outreach and resources to post job openings for operators to help reach a wider audience. Coordinating with other agencies and municipalities to post jobs and/or using a centralized listserv can increase the likelihood of finding the right candidates. Some other methods states and PWSs have used to recruit potential operators and employees include college job fairs, unemployment offices, alumni networking, apprentice programs, and children’s festivals.

A big challenge with operator recruitment and retention is low wages. Discussions during the workshop highlighted the connection between **inadequate customer rates and financial capacity with inadequate pay for the water operator workforce**. Some states are providing flexibility in trainings and examinations (e.g., going hybrid, free webinars), and initiatives that reimburse costs for examinations and certifications to help alleviate the financial burden for operators and PWSs.

**States have varying abilities to share certified operator information.** While sharing this information can be helpful for PWSs to recruit operators, some states have **issues with data privacy**. For example, Arizona has a sharable centralized database with operator information that includes email addresses; New Jersey uses a third-party organization to share operator lists; and Michigan can provide a list of certified operators upon request. However, Vermont cannot provide information about certified operators and Wyoming gives operators the option to indicate whether they want their information to be shared with other PWSs.

## Spotlight State and Technical Assistance Resources

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- [Alaska's Operations and Maintenance Best Practice Scoring](#)
- [Iowa's Self-Assessment Manuals for Rural Water Associations and Municipalities and Well Water and Hydropneumatic Tank Systems](#)
- [Colorado's Drinking Water Security Response Toolbox](#)
- [Mississippi's Code for Management Training for Community Public Water System Board Members and Training Manual](#)
- [Oklahoma's Economic Impact of Water Loss Auditing and Control Program](#)
- [Water ISAC's Tools for Cybersecurity and Resiliency](#)
- [New Hampshire's Water System Cybersecurity Resource Page](#)
- [Vermont's Criteria for DWSRF Asset Management Planning Loans](#)
- [Southwest EFC's Asset Management Switchboard](#)
- [EFC at Wichita State University's Asset Management for Utility Boards](#)
- [RCAP's Managerial and Financial Hub](#)
- [Colorado's Templates and Orientation to Contracting Guide](#)
- [Massachusetts' Lists of Typical Duties and Responsibilities for Certified Operators](#)
- [Pennsylvania's Operator Code of Ethics](#)
- [Missouri's Operator Certification Information System](#)
- [Wateroperator.org's Podcast for Drinking Water Professionals](#)
- [Water Professionals International's Examination Resources](#)
- [EPA's State Capacity Development contacts and Operator Certification contacts webpages](#)