Commonwealth of Virginia
Capacity Development Implementation Annual Report

October 1, 2019 through September 30, 2020

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Office of Drinking Water
Safe Drinking Water for a Healthy Virginia

COMMONWEALTH OF VIRGINIA

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This report is available to the public on the VDH Office of Drinking Water website at:
https://www.vdh.virginia.gov/drinking-water/capacity-development/

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Introduction

In accordance with § 1420(a) of the *Safe Drinking Water Act* (SDWA) Amendments of 1996 (42 USC § 300g-9(a)), this report serves as evidence of the Commonwealth of Virginia's commitment to and implementation of a Capacity Development Program. This program is based on and compliant with Virginia's Capacity Development Strategy. The United States Environmental Protection Agency (EPA) approved Virginia's Strategy on May 29, 2014. This report documents Virginia's assistance to waterworks[1] owners and operators in the Commonwealth and covers federal fiscal year 2020, from October 1, 2019 through September 30, 2020.

PART 1: NEW SYSTEMS PROGRAM

1.1 Legal Authority

The Virginia Department of Health (VDH), though the Office of Drinking Water (ODW), is the primacy agency for implementation of the SDWA and National Primary Drinking Water Regulations in the Commonwealth of Virginia. Legal authority for Virginia's new systems program is provided in §§ 32.1-169 and 32.1-172 of the *Code of Virginia* (1950, as amended in 1994). Virginia's legal authority has not changed from previous reporting years.

1.2 Control Points

In Virginia, all proposals to create a new waterworks must meet statutory and regulatory requirements that serve as control points for ensuring the capacity of new waterworks. There have been no modifications to Virginia's control points from the last reporting year.

Section 32.1-172 of the *Code of Virginia* states, "No owner shall establish, construct or operate any waterworks… without a written permit…" and, "the [permit] application also shall include a comprehensive business plan detailing the technical, managerial, and financial commitments to be made by the owner in order to assure that the system performance requirements for providing the water supply will be met over the long term."

To implement § 32.1-172 of the *Code of Virginia*, ODW requires owners to prepare and submit a business plan, called a "Waterworks Business Operation Plan (WBOP)," for the development of new waterworks, or the purchase or transfer of an existing waterworks by a first-time owner of a waterworks in Virginia. In addition, ODW requires a WBOP when an owner has a poor compliance history with Virginia's *Waterworks Regulations*. ODW published the WBOP template on the VDH–ODW webpage:

https://www.vdh.virginia.gov/drinking-water/capacity-development/waterworks-business-operations-plan/

Section 32.1-172 E of the *Code of Virginia* states: "If the proposed waterworks is not in compliance with all regulations of the Board [of Health] but, in the opinion of the Commissioner, the public

[1] In Virginia, public water systems are called "waterworks." The definition of a waterworks, "a system that serves piped water for human consumption to at least 15 service connections or 25 or more individuals for at least 60 days out of the year…" (*Code of Virginia* § 32.1-167) is equivalent to the federal definition of a public water system, which means "a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals." 42 USC § 300f(4)(A).

health will not be jeopardized, the Commissioner may issue a temporary permit for such a period of time and subject to such conditions as the Commissioner may deem appropriate for the owner to achieve compliance with such regulations." ODW staff utilize temporary permits most commonly for waterworks that do not fully comply with the *Waterworks Regulations.* These tend to be previously unpermitted waterworks that ODW identifies, called "newly-discovered waterworks," and waterworks with a change in ownership.

In addition, prior to receiving a permit to establish, construct, expand, or modify a waterworks, plans and specifications must comply with the *Waterworks Regulations* "Part III – Manual of Practice for Waterworks Design" (12VAC5-590-640 through 12VAC5-590-1280) to ensure new and modified waterworks are properly designed and physical facilities will be operated in a safe, reliable, and appropriate manner. The design shall provide the engineering basis to meet the drinking water standards under the SDWA.

ODW relies on a holistic approach to capacity development and emphasizes the role of long-established programs to enhance the technical, managerial, and financial (TMF) capabilities of waterworks. In addition to the permitting process already described, additional programs include sanitary surveys, technical assistance contacts by field staff, operator certification requirements, compliance and enforcement, and training courses offered by ODW, contractors, partners, and other technical assistance providers. The capacity building elements of these and other programs are described in more detail in Part 2 of this report, "Existing System Strategy", which summarizes activities in these areas for both new and existing waterworks. It is important to note that new systems also benefit from these longstanding programs.

1.3 New Systems

Appendix A lists Community and nontransient noncommunity (NTNC) waterworks that have become active during the period October 1, 2017, through September 30, 2020. Newly constructed facilities, previously unpermitted facilities that meet the definition of a waterworks (newly discovered waterworks), and existing facilities under new ownership are included. ODW may not have issued operation permits for all new waterworks listed in Appendix A. However, staff is working to ensure all new waterworks obtain the required permitting.

Newly discovered waterworks are typically businesses or small community water systems (*e.g.*, a restaurant, mobile home park, or group of single-family homes) that have operated for years without being aware of the requirement to comply with the *Waterworks Regulations*. Once discovered, ODW field staff gather information from the owner to determine whether these systems meet the definition of a waterworks. If systems meet the waterworks definition, ODW notifies the owner and begins the process to issue an operation permit. Owners may challenge the determination under Virginia's Administrative Process Act (APA), *Code of Virginia* §§ 2.2-4000 through 2.2-4031, but most agree to regulatory oversight by ODW. The majority of newly discovered waterworks are transient noncommunity (TNC) waterworks; however, ODW has identified some NTNC and community waterworks.

ODW provides technical assistance, makes site visits, provides templates for the Waterworks Business Operations Plan, and sends reminders of sampling requirements and due dates to both new and existing waterworks. Nevertheless, many newly discovered waterworks and waterworks with ownership changes continue to experience managerial and financial challenges while

attempting to comprehend and comply with state and federal requirements. As a result, these waterworks tend to experience more compliance issues than other water systems.

As new waterworks incurred violations (see Appendix B), ODW addressed needs by providing timely technical assistance, surveillance, and enforcement until the waterworks returned to compliance or were under formal enforcement action.[2] ODW couples compliance and enforcement activities with corrective action technical assistance; therefore, violations reported for new waterworks are typically of short duration.

During the three-year period from October 1, 2017, through September 30, 2020, ODW identified 40 community and NTNC waterworks as "new". Not all of these waterworks are actually new systems. The list includes waterworks that have transferred ownership or ones that ODW reactivated in the State Drinking Water Information System (SDWIS) according to the "Status Activity Date" in the electronic waterworks record. Of those systems, 11 (28%) of them incurred violations. This represents a decrease of eight waterworks (down from 19, or approximately 20%) compared to the three-year period ending in fiscal year 2019. There was a small increase in the number of new systems, up from 39 new systems to 40. Of the eight systems that were either new or reactivated in the October 1, 2019, to September 30, 2020 time-period, only two had violations. This represents 25% of those systems, and both were for noncompliance with the Revised Total Coliform Rule (RTCR). New waterworks may have initial violations of the RTCR due to the inadequate sources; some require rehabilitation. New waterworks also struggle with sampling protocols and techniques. ODW will continue to contact waterworks with violations and provide technical assistance to resolve the violations.

EPA designed the Enforcement Targeting Tool (ETT) to identify waterworks with violations that rise to significant noncompliance by focusing on those systems with health-based violations and those that show a history of violations across multiple rules (see Appendix C). The ETT formula calculates a score for each waterworks based on open-ended violations and violations that have occurred over the past five years, but does not include violations that have returned to compliance or are on the "path to compliance" through a specified enforceable action. In calculating the ETT score, health-based violation criteria is weighted.

According to EPA's Office of Enforcement and Compliance Assurance's Enforcement Targeting Tool (ETT), no "new" waterworks are a "priority system" as of the July 2020 published ETT. ODW issued a consent order in March 2020 to one system, VA1063154 Ramsey Mobile Home Park that transferred to new owners in 2017 and assessed civil charges. Staff continues to work with this waterworks to address compliance issues.

ODW promotes the use of temporary operation permits with specific requirements for newly discovered waterworks not in compliance with the *Waterworks Regulations*. Staff issue temporary permits with an expiration date not to exceed 24 months. To address critical issues promptly staff include benchmark deadlines. The purpose of an expiration date is to provide a period for the waterworks to achieve compliance and, in doing so, demonstrate adequate TMF capacity prior to

[2] EPA defines formal enforcement action in Water Supply Guidance 26 "… as one which requires specific actions necessary for the violator to return to compliance, is based on a specific violation, and is independently enforceable without having to prove the original violation." A consent order, issued by the State Health Commissioner, on behalf of the State Board of Health, to a waterworks owner, with the owner's consent, is one example of a formal enforcement action. Consent order are authorized by §§ 32.1-26 and 32.1-27 of the *Code of Virginia*.

the issuance of a standard operation permit. ODW field staff prefer to complete an operation permit when possible; however, the use of temporary operation permits is a viable option.

Temporary operation permits protect public health while providing time for a new waterworks to make the changes required for meeting regulatory requirements. If a newly discovered waterworks does not demonstrate adequate TMF and does not meet requirements of the temporary operation permit prior to the expiration date, the waterworks would then be operating without a permit and be subject to enforcement action. Enforcement generally begins by providing the owner written notice and may include meetings with ODW enforcement staff, a warning letter, informal administrative proceedings, and/or an order directing actions required to return to compliance (*i.e.*, a consent order or special order). This report provides more information about compliance and enforcement in Section 2.9 on page 16.

PART 2: EXISTING SYSTEM STRATEGY

2.1 Programs, Tools, and Activities

ODW continues its surveillance program to identify waterworks with emerging compliance issues. Capacity development staff monitor waterworks that appear to be having compliance issues for violations, and when violations occur, ODW capacity development staff consult with field staff to develop an informal plan of action. Staff use this consultation to provide a plan to improve the waterworks' TMF capacity and ultimately prevent additional violations. Effective assistance includes:

- Regular sampling reminders by phone, email, or letter
- Site visits
- Referral to formal or informal training resources
- Waterworks Business Operations Plan development or review
- Notifications and reminders of upcoming funding opportunities
- Direct one-on-one assistance by Sustainability Coordinators
- Referral to technical assistance providers
- Warnings from the ODW's enforcement staff, and/or
- Issuance of Consent Orders
- Assessment of Civil Penalties and Charges

2.2 System Identification

ODW utilizes three common indicators to assess, identify, and prioritize waterworks in need of capacity development assistance: compliance, infrastructure condition, and managerial and financial capability. Compliance utilizes the data tools of the ETT score, compliance monitoring results, monthly operations reports, SDWA reports, and technical assistance fee payments. Infrastructure condition uses tools such as plan reviews and sanitary surveys to evaluate the waterworks' conformity to design standards and best practices for sources, treatment, storage, and distribution. The concepts of managerial and financial capacity are uniquely associated with each other and include indicators such as:

- The Waterworks Business Operations Plan
- Customer complaints
- Staff licensure qualifications
- Status of programs, e.g. (safety, water accountability, and cross connection control)
- Responsiveness to correcting deficiencies
- Declaration of bankruptcy

EPA requires ODW to conduct a triennial capacity assessment. Since July 2001, ODW has used an electronic tool to complete a capacity baseline assessment of all community and NTNC waterworks. The scoring system accounts for compliance status, infrastructure condition, managerial and financial indicators, and preparedness to comply with regulations. The higher the score, the better the result. Staff conducts this "triennial capacity assessment" once every three years and ODW uses the results to identify specific waterworks needing assistance as well as programmatic adjustments or efforts needed to address regional or statewide need.

During the reporting period, ODW conducted a required triennial assessment. In early 2020, ODW assessed all community and NTNC waterworks in Virginia. The assessment consisted of 18 "yes" or "no" questions. The questions related to the three TMF capacities. ODW staff used official records to answer questions and directly contacted waterworks for additional information as needed. Staff compared results of this assessment to the baseline assessment conducted in 2016. Technical questions explored whether the waterworks had sufficient operator coverage for sick leave and vacation as well as asking whether the facility addressed recommendations from recent sanitary surveys. Managerial questions included asking whether the waterworks facilities and appurtenances were in good operating condition and whether the waterworks met all established National Drinking Water Standards. Financial questions included asking whether the waterworks had at least 45 days cash on-hand to cover expenses and whether the waterworks had adjusted rates in the past three years. If staff were unable to get a response to a particular question, then staff answered that question "No" per the process instructions. Appendix E has the complete list of questions asked during the triennial assessment.

Staff evaluated 1,597 systems, 1,093 were community waterworks and 504 were NTNC waterworks. The maximum score possible was 18 and waterworks scoring 10 or lower tend to demonstrate low TMF capacity and operational challenges. Overall, the average score of all waterworks surveyed was 14. The average score of all community waterworks was slightly higher at 15 and the average score of all non-transient noncommunity waterworks was lower at 13. Overall, Virginia's waterworks perform well, smaller systems typically scoring lower than the larger community waterworks. Further analysis of the data provides additional insights and areas needing attention.

Composite data in Figures 1 and 2 show a change from the 2016 baseline assessment. The current data indicates a general improvement, with more waterworks scoring higher overall. The 2016 data set peaked around 11 points. In 2020, this peak is less pronounced and scores trend upward. The data no longer indicates a distinct peak at 16 points, but rather a peak at 17 points. These upward trends in the data indicate an increase in overall TMF capacity at waterworks and a positive impact from capacity-building measures ODW implemented through the Strategy in the past three years.

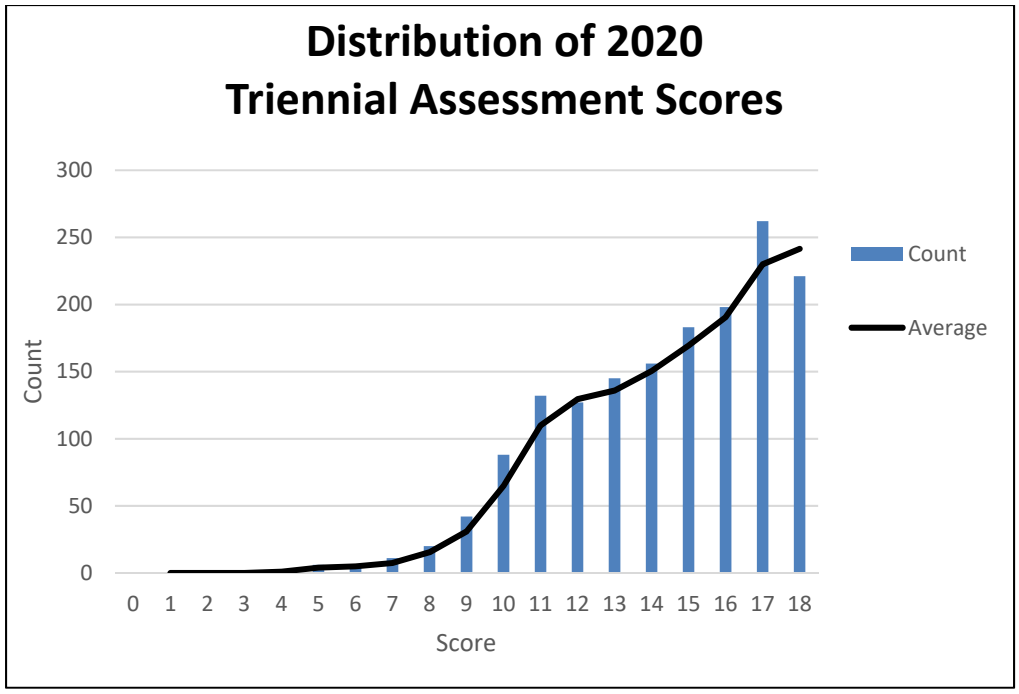


Figure 1: Distribution of 2020 Triennial Assessment Scores (Community and NTNC)

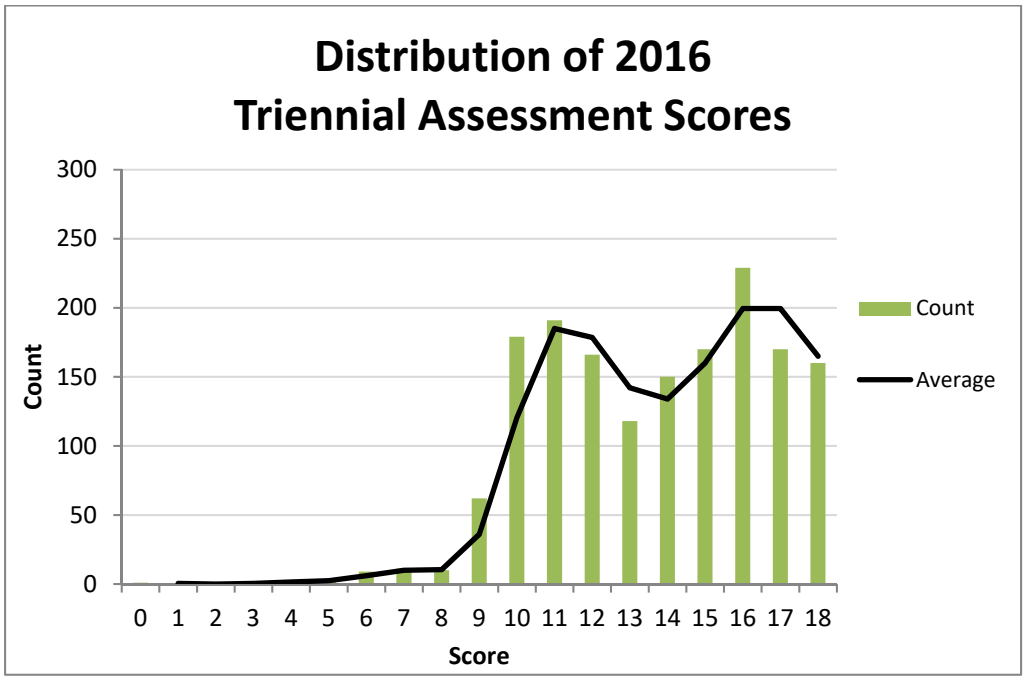


Figure 2: Distribution of 2016 Triennial Assessment Scores (Community and NTNC)

The 2020 data reveals that 14% of waterworks scored the maximum 18 points. This demonstrates an improvement from 10% of waterworks achieving a score of 18 during the baseline triennial assessment. The lowest score reported in 2020 was 4 points; two waterworks fell into this lowest

bin and both are located in southeast Virginia. In the 2016 assessment, one waterworks scored a zero, with four waterworks scoring four or less. This indicates improvement on the lower end of the spectrum as well.

Further review of both the 2016 and 2020 data shows other trends. Most notably, waterworks in southeast Virginia, roughly bounded by Route 29 to the west and I-64 to the north, and generally encompassing "Southside Virginia" tend to have lower TMF capacity scores than those in other geographic areas of the state. In 2016, 63% of waterworks that scored less than 10 were located in the territories covered by the Danville, Richmond, and Southeast Virginia Field Offices. In 2020, that percentage increased to 80%. This would indicate that the areas in the northern and western portions of the Commonwealth are improving in TMF capacity. Conversely, the central and southern areas of the state continue to struggle with TMF capacity.

ODW will prioritize training, funding workshops, technical assistance, and financial resources in south-central Virginia to address this trend. Historically, Planning District Commissions (PDCs) in southwest Virginia have helped waterworks complete Drinking Water State Revolving Fund (DWSRF) applications. These organizations have resources and expertise that benefit their member communities. Staff will contact PDCs in the south-central part of the Commonwealth to increase funding opportunity awareness. During the reporting period, staff collaborated with a PDC to hold a funding workshop with multiple drinking water funding partners. ODW plans to take this approach in south-central Virginia next.

A review of statewide responses for the triennial assessment provides other insights. The following questions generated the lowest scores, with less than 50% of all waterworks meeting the criteria (Figure 3):

- Question 5: Does the waterworks have a written policy for responding to customer complaints? (45%)
- Question 17: Has the waterworks adjusted rates in the past three years? (48%)
- Question 18: Does the waterworks have an Asset Management Plan? (49%)

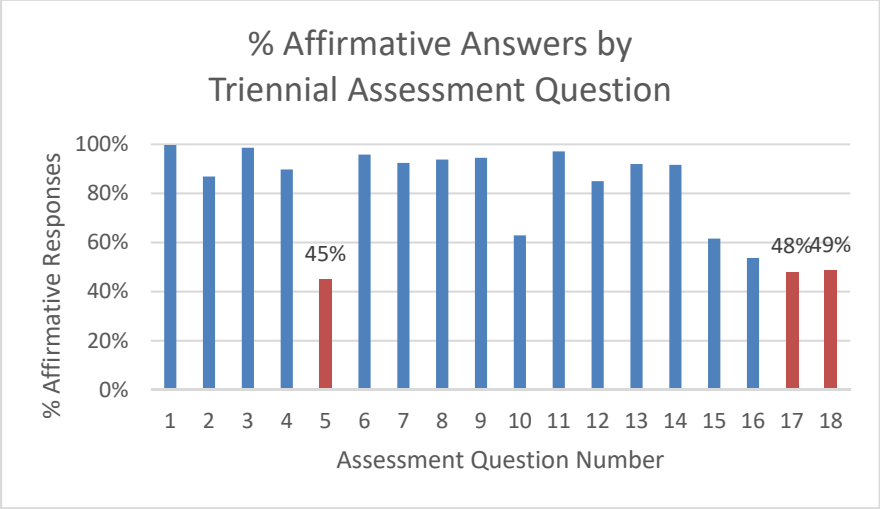


Figure 3: Percentage Affirmative Answers by Triennial Assessment Question

These three questions provide guidance on where ODW can focus programmatic attention. ODW has focused training on asset management plans and rate adjustments as the model for waterworks' financial sustainability. Customer service at waterworks is an opportunity area. Waterworks with clear customer service policies and practices enhance customer experience and trust, which help the waterworks support needed improvements with rate and policy adjustments.

Small waterworks can benefit from improved customer service. A written customer service plan codifies actions that ensure a similar response to each customer. Although statewide trends may appear positive, ODW will provide system-by-system help to address specific challenges, no matter the size of the waterworks, its location, or its financial condition.

2.3 Approach to Assistance

ODW staff direct programs, tools, and activities that support Virginia's existing system strategy efforts to 1,089 community, 509 NTNC, and 1,119 TNC waterworks during the reporting period. These systems collectively serve approximately 7.6 million consumers--about 89% of the total population of Virginia (8.5 million people).

2.4 On-site Inspection: Sanitary Surveys and Site Visits

Relationship to TMF Capacity: On-site inspections of waterworks are a significant component of the sanitary survey program and provide opportunities for ODW staff to assess TMF capacity. During the course of a sanitary survey, ODW staff conduct thorough evaluations of waterworks' infrastructure and treatment processes, in part by reviewing water quality monitoring records, examining operational practices and controls, and assessing operators' qualifications.

ODW staff utilize the sanitary survey process to identify waterworks' capacity needs and prioritized targeted guidance and assistance. The culmination of the sanitary survey is a written report that serves as a roadmap for waterworks owners to follow for correcting a waterworks' deficiencies or improving a waterworks' operation.

ODW staff conduct special site visits to evaluate waterworks new construction, investigate consumer complaints, provide guidance to waterworks required to conduct Level 1 RTCR assessments, conduct Level 2 RTCR Assessments, and respond to specific requests for assistance. Staff also make site visits to perform source water assessments and evaluate locations of proposed new wells for approval. These visits provide an opportunity for direct, face-to-face interaction with waterworks owners and operators, allowing immediate technical assistance to improve TMF capacity.

Performance: During the reporting period, ODW staff performed 1,371 routine sanitary surveys, provided guidance to waterworks in completing 113 Level 1 RTCR Assessments, conducted 49 Level 2 RTCR Assessments, and performed 35 well site assessments**.**

2.5 Technical Assistance Contacts by Field Staff

Relationship to TMF Capacity: In addition to site visits, ODW staff interact with waterworks owners and operators and provide assistance through a variety of informal contacts including meetings, telephone calls, letters and emails. Assistance covers a full range of TMF concerns. For

instance, staff may assist with water quality sampling or follow up on corrective measures from a sanitary survey report. Staff notify waterworks operators of upcoming training opportunities or assist with water treatment dosage calculations. ODW notifies owners of pending regulatory impacts or requirements for consumer education.

Performance: During the reporting period, VDH–ODW staff received and responded to 7,828 assistance requests from waterworks owners and operators.

2.5 Operator Certification

Relationship to TMF Capacity: In Virginia, the Department of Professional and Occupational Regulation (DPOR) regulates licensed waterworks operators through the *Code of Virginia* §§ 54.1-2300 through 54.1-2302. DPOR bases licensure on operators having applicable experience and education as well as demonstrating minimum required knowledge, skills and abilities through an examination; 18VAC160-30-10 *et seq.* Experience is limited to operation and maintenance of waterworks, laboratory work, and treatment plant maintenance. Experience level varies depending on the waterworks' classification. The minimum education requirement for an operator's license is a high school diploma or General Educational Development certificate. However, there are licensure regulation provisions for candidates without high school diplomas to substitute more operator-in-training experience for education.

Performance: The total number of licensed waterworks operators in Virginia was 2,201 as of June 2020. During the reporting period, the number of waterworks operators increased by 102 from last year. Staff attributes this increase to operators taking advantage of education opportunities and the upward trends of licensure testing pass rates. To keep this increase in licensed operators trending up, VDH-ODW plans to continue offering low cost education solutions, which are now more important than ever.

Detailed information regarding the status of Virginia's Operator Certification Program is in the Annual Report on Operator Certification in Virginia, submitted to Region III EPA June 2020.

2.6 Training (Continuing Professional Education)

Relationship to TMF Capacity: ODW facilitates the development of TMF competencies for waterworks owners and operators by offering and sponsoring on-going training opportunities. The curricula for these programs include technical topics such as equipment operation and maintenance, drinking water chemistry and microbiology, water treatment technologies, and operational math. The program addresses managerial aspects of waterworks operation through course offerings on the *Waterworks Regulations*, financial planning, asset management, waterworks administration, source water protection, emergency planning, and waterworks security.

Performance: In October 2019, ODW held "*Asset Management for Your Waterworks*" as an in-person workshop and "*Basic Water Chemistry for Water Operators*" in February 2020 as a live class broadcast to classrooms across the state. In March 2020, ODW canceled all in-person courses due to COVID-19 pandemic health risks. ODW and Virginia Tech transitioned some courses to webinar-based platforms including via the Zoom conferencing platform. Course attendees gave favorable feedback for these interactive webinars. ODW canceled two of its most popular in-

person management classes, "*Management, Methods, and Money: Understanding Concepts in Capacity Development"* and "*Establishing a Successful and Sustainable Waterworks."* ODW has historically presented these classes as multi-day courses built around student involvement and informal mentoring opportunities. ODW will modify and offer online training either as pre-recorded modules or as instructor-led online courses going forward while emergency declarations are in force. ODW is planning to return to in-person instruction when deemed safe while also continuing to provide remote learning opportunities.

Asset Management for Your Waterworks: October 1, 2019, Wytheville, VA. ODW offered this one-day class in conjunction with partners from the Virginia Rural Water Association, Southeast Rural Community Assistance Program, and Draper Aden Associates. The first course offering was a one-day class covering the fundamental concepts of asset management. Twenty-three participants representing waterworks and consulting engineers from around the state attended. Staff utilized both a pre- and post-test to gauge student learning in addition to a standard course evaluation. The overall reaction from the participants was positive with a 92% training satisfaction. ODW planned to offer this course again in 2020, but also put it on hold due to the pandemic.

Water Operators Short School: July 27 – August 1, 2020. Virginia Tech offered synchronous and asynchronous online classes this year in response to the pandemic. ODW actively participates in the Short School by volunteering as course instructors at this weeklong course held annually since the 1940s. Historically, there have been three levels to the course: introductory, intermediate, and advanced. Each level provides approximately 15 classes and focuses on a variety of waterworks operations topics. The curricula for the intermediate and advanced courses build on the preceding year's course. Starting in August 2018, Virginia Tech offered an additional level, "Year 4," for supervisors or operators looking to move into management. The Year 4 sessions include asset management, communications, human resources, as well as new technologies. In 2020, Virginia Tech moved the course online to allow students to participate during the COVID-19 pandemic. Virginia Tech held the Short School online from July 27 to August 1, 2020; 96 people attended.

Table 1: Broadcast Classes offered by ODW and Virginia Tech

Date	Class	Location	# of Participants
2/19/20	Basic Water Chemistry for Waterworks Operators	Broadcast to classrooms	114
3/18/20	Residential Water Metering: Lessons Learned from Meter Testing and Analysis of Metered Water Data	***Canceled*** Broadcast to classrooms	***Canceled***
4/15/20	Sample Collection, Analysis & Interpretation	Zoom interactive webinar	54
6/17/20	The Future of Pathogen Detection for the Water Industry	Zoom interactive webinar	109
7/15/20	Asset Management and Rate Impacts	Zoom interactive webinar	71
9/16/20	Classifying Water Main Break Types, Waterworks' Responsive Actions & Distribution System Disinfection Practices	Zoom interactive webinar	130

2.7 Construction Plans and Permit Review

Relationship to TMF Capacity: ODW uses authority in §§ 32.1-169 & 32.1-172 of the *Code of Virginia*, and 12VAC5-590-190 of the *Waterworks Regulations* to prohibit the construction or change in the manner of transmission, storage, purification, treatment, or distribution of water (including the extension of water pipes for the distribution of water) at any waterworks or water supply without a written construction permit. Construction and operation permitting authority is a control point to prevent the creation of waterworks lacking sufficient TMF capacity to sustain operations. After construction, the waterworks owner must submit a statement by a licensed professional engineer. The engineer's statement confirms completion of the construction work in accordance with the approved plans and specifications, based on inspections of the waterworks during and after the construction. Upon receipt of the statement, ODW issues a new or updated operation permit. The permit also establishes the classification of the waterworks for the purpose of licensure requirements for personnel.

Performance: During the reporting period, ODW issued 242 construction permits through the review of plans and specifications for new construction, expansion, or changes in the manner of transmission, storage, purification, treatment, or distribution of water (system improvements).

2.8 Water Loss and Evaluation Assistance

Relationship to TMF Capacity: Distribution system water loss is a TMF capacity concern. Water loss may include impacts to hydraulic source capacity, reduction in pressure, negative pressure resulting in contamination from cross connections and leaks, increased treatment, and risk to public health. Financial impacts include loss of potential revenue and increased operation costs (e.g. electricity, chemicals, unbilled water, and staff time). These factors affect management decisions and capital outlay necessary to correct significant water loss in the distribution system.

Performance: ODW staff does not conduct leak detection, as leak detection requires extensive training and expensive equipment. Instead, ODW continues to support our technical assistance partners by funding applications for leak detection equipment under the DWSRF set-asides. The Virginia Rural Water Association (VRWA) and the Southeast Rural Community Assistance Project (SERCAP) have both received grant funds for leak detection equipment. They provide the services through ODW referral and direct contact from waterworks. VRWA reported delivery of 505.50 hours of leak detection technical assistance service to several waterworks in Virginia during the reporting period. This is the first year that SERCAP has received funds for equipment and has begun training its staff. They began providing leak detection assistance by helping Sunray Artesian, a small rural community in Chesapeake, Virginia. They anticipate conducting more leak detection in the upcoming year as their staff gets more training.

Table 1, "Virginia Rural Water Association Leak Detection Program", summarizes VRWA circuit riders' water loss assistance hours provided through routine leak detection technical assistance.

Table 2: Virginia Rural Water Association, Leak Detection- Waterworks Assisted

Hours of Leak Detection Service	Waterworks	Hours of Leak Detection Service	Waterworks
3.75	Alleghany Co.	3.75	Montross
2.00	Amherst Co. Service Authority	19.75	Montvale
19.00	Appalachia	27.00	Montvale Water Corp.
7.50	Bath Co. PSA	8.25	New Market
38.25	Buchanan	5.00	Northumberland Co.
15.00	Charlotte Courthouse	5.75	Pound
32.75	Clifton Forge	5.25	Rural Retreat
20.75	Dungannon	112.75	Rye Valley Water Authority
10.50	Eagle's Eyrie	7.00	Shenandoah
59.25	Edinburg	2.25	Thomas Bridge Water Corp.
21.00	Emporia	1.00	Vinton
4.50	Exmore	14.00	Warm Springs Water Assoc.
6.50	Gloucester	13.00	Warsaw
3.00	Holiday Acres Park	7.00	Waynesboro
5.25	Isle of Wight Co.	24.75	Windsor

2.9 Compliance and Enforcement Program

Relationship to TMF Capacity: ODW routinely reviews water quality data submitted by waterworks and issues Notices of Alleged Violation (NOAVs) for sample results that do not meet the standards contained in the *Waterworks Regulations*. ODW issues NOAVs for monitoring infractions, improperly licensed staff, recordkeeping and reporting failures, or other conditions that deviate from standards established by the SDWA and the *Waterworks Regulations*. These notifications include recommendations on a course of action for waterworks to follow to return to compliance.

In addition, ODW can issue warning letters to waterworks that fail to comply with the *Waterworks Regulations* or are on the verge of becoming priority systems on the ETT. ODW utilizes warning letters to encourage waterworks owners to take actions necessary to ensure compliance. Warning letters summarize current conditions: the waterworks noncompliance, request owners take corrective action within a specified timeframe, and define the possible consequences for failure to take action.

The State Health Commissioner, acting on behalf of the Board of Health, has the authority to issue binding bilateral consent orders (*Code of Virginia* §§ 32.1-26 and 32.1-27) and unilateral special orders (*Code of Virginia* § 32.1-175.01) to waterworks owners who have violated the *Waterworks Regulations.* ODW uses this tool in cases where a waterworks has not returned to compliance in a timely fashion following issuance of notice and/or a warning letter. As required by Virginia's Administrative Process Act, ODW enforcement staff conduct an informal fact-finding conference and/or formal administrative hearing to give waterworks owners their due process rights under the law before issuing an adverse decision that could lead to a unilateral special order. Both consent and special orders establish timelines and direct corrective measures that will lead to compliance.

ODW focuses these enforcement efforts on priority systems identified in the ETT. Quarterly ETT reports are used to prioritize assistance to waterworks with numerous or especially serious compliance failures.

ODW's enforcement approach is highly focused on identifying solutions to the underlying causes of waterworks noncompliance with state and federal drinking water regulations. ODW enforcement utilizes various tools to direct attention and provide guidance to waterworks owners on ways to correct deficits in their TMF capabilities. For instance, during the course of an administrative hearing it may be determined that inadequate waterworks revenues are the ultimate cause of chronic monitoring failures. ODW may ask waterworks to submit a WBOP as a budgeting tool. ODW may provide the waterworks with rate-setting assistance to address the underlying lack of financial capacity.

Performance: During the reporting period, ODW issued 1,604 NOAVs and 62 warning letters. The Health Commissioner issued one special order and three consent orders. One waterworks, Rustview Dixie Youth Baseball, Public Water System Identification (PWSID) #VA5031799, satisfied the requirements in their consent order.

2.10 Waterworks Advisory Committee

Relationship to TMF Capacity: ODW collaborates with the Waterworks Advisory Committee (WAC), which is comprised of a diverse group of waterworks stakeholders throughout the state. The WAC provides input into the ongoing development of ODW policies and procedures. ODW consults the WAC frequently regarding the implementation of specific programs, including those related to capacity development. Virginia *Waterworks Regulations* 12VAC5-590-40 5 provides requirements related to the WAC.

Performance: The WAC and ODW staff met five times during the reporting period: October 16, 2019, December 11, 2019, February 19, 2020, April 15, 2020, and July 15, 2020.

2.11 Drinking Water State Revolving Fund

Relationship to Technical, Managerial, and Financial Capacity: ODW administers the Virginia DWSRF and provides financial aid to waterworks owners in the form of low-interest loans and principal forgiveness. ODW can use financial assistance: to resolve health-related issues, for infrastructure improvement, and to refinance debt. ODW staff assess all qualified waterworks applying to receive DWSRF assistance to determine if the waterworks has sufficient TMF capacity before disbursement of funds. Waterworks that do not appear to have adequate TMF capacity are required to submit a WBOP or take advantage of technical assistance provided by Capacity Development staff. ODW also coordinates through its financial partner, Virginia Resource Authority (VRA), to set requirements for waterworks restructuring as part of the funding process (rate increases or completion of annual audits).

ODW implements outreach efforts to increase awareness of the opportunities available through the DWSRF program. ODW staff post information on the ODW website and in the *Virginia Register*. The DWSRF solicitation package includes eligibility information, application information and deadlines, program workshop dates, contact information, as well as other useful information. ODW utilizes the ETT to identify non-compliant waterworks that would most benefit

from the DWSRF funding. ODW can then notify these waterworks by letter of the DWSRF opportunities available through the year, rather than a couple months before the application deadline. ODW continues to solicit eligible applicants for each DWSRF Construction / Planning and Design Grant Funding cycle.

ODW receives Planning and Design Fund applications year round, reviewing them upon receipt and making funding offers for complete applications with acute or chronic health points. ODW will hold applications without acute or chronic health points until around September 1, each year. If funds are still available, they staff will review and score the remaining applications.

ODW includes a sustainability category in the DWSRF priority system process. The purpose of this category is to promote sustainable programs, such as asset management, for DWSRF applicants. Applicants able to provide documentation of such programs and activities receive additional priority system points. Additionally, ODW has begun requiring water systems that received funding through the DWSRF to either have an active asset management plan, or prepare one before completion of the awarded project. Up to $15,000 in principal forgiveness is available to assist with the costs of developing or updating an asset management plan for those who do not have an active or up-to-date plan.

Performance: During the reporting period, the highest scoring DWSRF construction application receiving a funding offer was the Pittsylvania County's Town of Hurt, with 30 chronic points and 60 points over all. This water system has 568 connections and the total project cost is $1,626,000. The Virginia DWSRF made offers totaling $42,610,735 of low-interest/principal forgiveness loans to 25 systems. All waterworks that received an offer had TMF assessments completed prior to the offer of funding. ODW staff identified issues regarding low TMF capacity and recommended corrective actions in the funding offers.

2.12 Planning and Design Funded Projects

Relationship to TMF Capacity: ODW awards planning and design funds annually to small financially challenged, community waterworks, and the program provides up to $35,000 per project. The beneficiaries of this program are primarily waterworks that would not have the TMF ability to evaluate drinking water problems, identify solution alternatives, and make recommendations for correction. Eligible projects may include preliminary engineering planning, design of plans and specifications, performance of source water quality and quantity studies, drilling test wells to determine source feasibility, or other similar technical assistance projects. The submission of a preliminary engineering report (PER) is a requirement for both ODW's DWSRF construction program and the US Department of Agriculture's Rural Economic Development Loan & Grant Program. However, the DWSRF construction program will accept applications without a PER, and funds engineering services as part of a construction project.

Outreach efforts by ODW increase awareness of the opportunities available through the Planning and Design Funds. Staff post information on the VDH–ODW website and in the *Virginia Register* during January of each calendar year. The information includes eligibility information, application information and deadlines, program workshop dates, contact information, as well as other useful information.

Performance: Waterworks owners submitted applications totaling $280,000 to the Planning and Design Fund during calendar year 2020. ODW received ten applications for the Planning and

Design Fund solicitation issued in January 2020. ODW receives applications on a rolling basis during the year. This year, ODW has made offers to five waterworks totaling $162,100. ODW continues to reimburse projects cost for offers from previous years with approximately $222,000 expended on prior year projects. Three projects from prior years remain active and all of them are from 2019. Staff continue to follow-up on these projects to ensure timely completion.

2.13 Emergency Preparedness

Relationship to TMF Capacity: Preparedness, response, and recovery to/from natural disasters and technological incidents are emerging as a capacity concern for Virginia waterworks. Waterworks preparedness leads to resilient waterworks capable of continuing operations, meeting state and federal requirements, and ensuring public health protection during these incidents. ODW provided a variety of training, exercises, and planning tools to assist waterworks' preparedness.

Performance: ODW Emergency Preparedness and Security personnel worked with the Virginia Department of Emergency Management to implement a new water advisory, low-pressure advisory and power outage-reporting tool. The tool utilizes Survey123 for ArcGIS and ties reports directly to the ESF-3 Dashboard within the Virginia Emergency Operations Center (VEOC). The tool has improved real-time reporting of water advisories, and ODW is using the data collected to analyze trends among outages in the Commonwealth.

ODW staff virtually staffed the ESF-3 desk in the VEOC during Hurricane Isaias, Hurricane Sally, COVID-19, and statewide first amendment activities. Response activities for COVID-19 included ensuring waterworks had staffing contingency plans in place, securing personal protective equipment, and communicating the status of waterworks to state partners. Staff continues to monitor the effects of COVID-19 on waterworks, which has been minimal at this time.

ODW staff conducted a Harmful Algal Bloom exercise with state partners and the John W. Flannagan Water Authority. The two entities initiated the exercise due to frequent blooms on the Flannagan Reservoir. The exercise improved coordination between the local responders. Additionally, the Governor authorized the Commonwealth to observe a Hurricane and Emergency Preparedness Sales Tax Holiday in August 2020 to help Virginians purchase emergency supplies.

2.14 Source Water Assessments

Relationship to TMF Capacity: Source water assessments serve as a tool for water supply resource planning and, specifically, support waterworks' managerial capabilities. ODW performs assessments on new waterworks and updates existing assessments resulting from routine sanitary surveys and other technical assistance opportunities offered by the agency.

Performance: ODW field staff provided 528 preliminary or updated source water assessments. ODW continuously refines the source water assessment procedures and the agency's Geospatial Information System database layers and toolset. This work helps to improve the source water assessment reporting to waterworks.

2.15 Source Water Protection Program

Relationship to TMF Capacity: The Source Water Protection Program (SWPP) utilizes contract services, Wellhead Protection Implementation Projects Grants and ODW staff to assist small community waterworks (serving less than 50,000 persons) and localities with development and implementation of source water protection plans. The resulting plans enable the participating waterworks to take steps to safeguard their drinking water sources by managing and controlling activities near the source that could compromise water quality and quantity. Additionally, ODW participates in interagency environmental reviews that serve as a barrier of protection in Virginia's multi-barrier approach to safe drinking water. These reviews minimize environmental impact from proposed projects to protect Virginia's waters and public health.

Performance: During the 2019-2020 reporting period, the collective efforts of VDH contractor and VRWA produced SWPPs for some 35 community water systems (CWSs). This was enough to exceed the goal set in FY2019 and maintained in FY2020 to increase the number of SWPPs by 1 percent from the FY2017 goal. Due to regional efforts to create source water protection plans, ODW saw an increase in population protected. A few water systems also began purchasing water from systems that are currently implementing protection plans. Several systems that lost Strategy In-Place (SI) status regained SI status this year due to plan updates and implementation efforts by the contractors.

The following charts summarize Virginia's FY202 results pertaining to EPA's Strategic Targets SDW-SP4a (PWS covered by SI) and SDW-SP4b (Population covered by SI).

Figure 4: Source Water Protection SP4a Metric: CWSs covered by substantial implementation

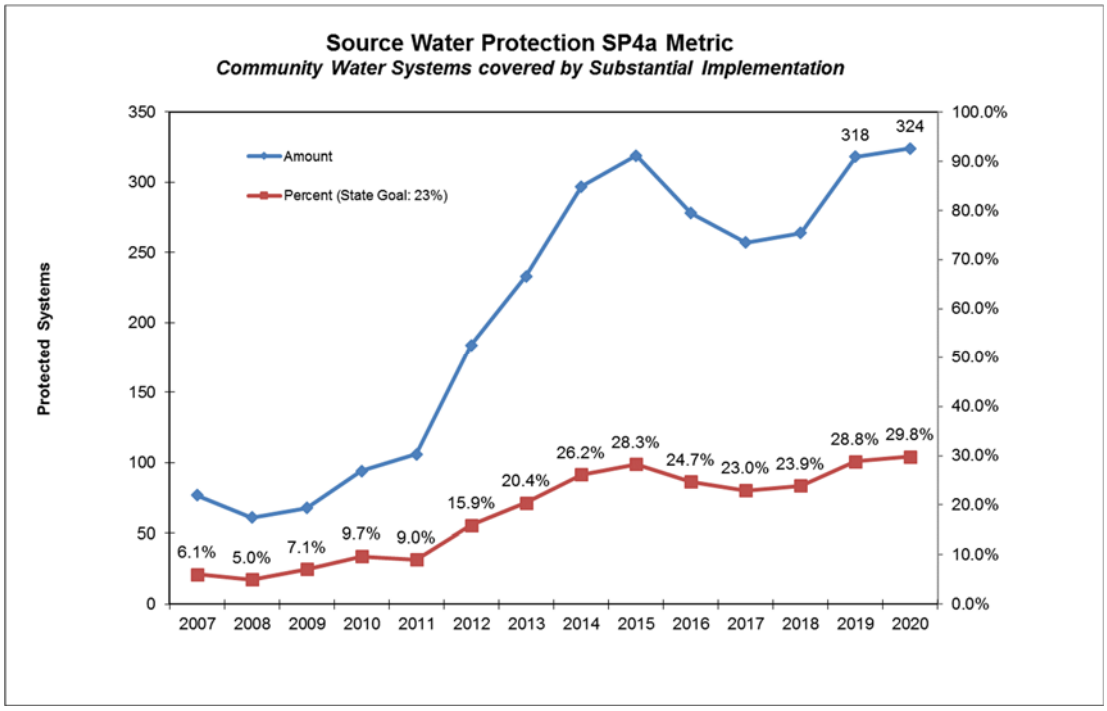
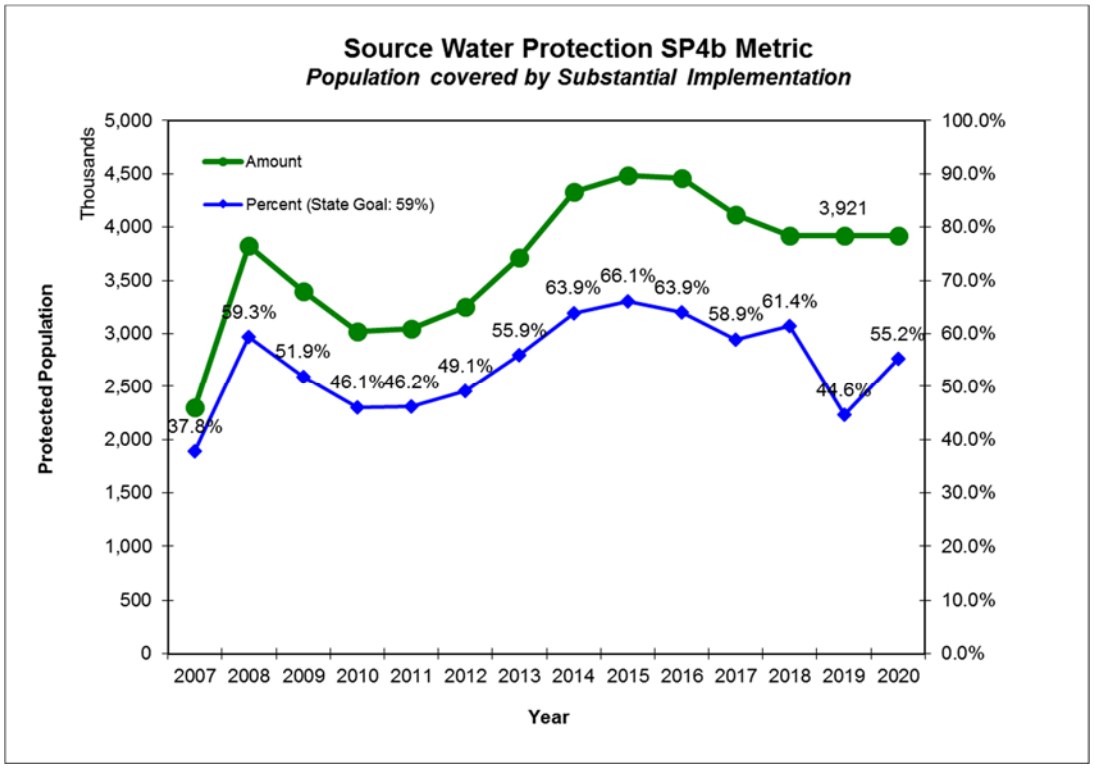


Figure 5: Source Water Protection SP4b Metric: Population covered by substantial implementation



ODW issued the 2020 Wellhead Protection Implementation Projects Request for Applications on January 8, 2020. Staff distributed a total of $388,885.00 between four awardees. The performance cycle for these awards ends on June 15, 2021. The projects funded include the Town of Bowling Green (well abandonment), Fauquier County Water and Sewer Authority (well fencing), The Town of New Kent (Well abandonment), The Town of Rivanna (watershed and reservoir protection signs). Performance information about the Wellhead Protection Implementation Projects Request for Applications is available at:

https://www.vdh.virginia.gov/drinking-water/source-water-programs/source-water-protection-assistance-funding-opportunities/

2.16 Small Engineering Projects Program

The Small Engineering Projects Program utilized the services of three engineering consulting firms for small projects at financially stressed waterworks serving typically fewer than 3,300 consumers. These projects include design and specifications for small construction at a waterworks that may not qualify for a DWSRF planning and design funded project. The program is now in its sixth year. Four systems obtained engineering services from the contractors under task orders initiated during the reporting period. New projects this year have included plans and specifications for well house improvements, design of pH adjustment for lead and copper, evaluation for lead and copper treatment, and as-built plans and specifications for chlorination. An example of a recently contracted project follows:

The Cottage Edge (waterworks) located in Franklin County, Virginia; (PWSID No. 5067077) is a small community waterworks of 43 mobile home connections serving approximately 80 residents. The system is rural and small, consisting of a well, hydro-pneumatic tank, and distribution system. The waterworks exceeded the lead and copper action level beginning in 2018 and continuing through 2019. A lead and copper desktop evaluation performed by ODW indicated that orthophosphate addition the drinking water would be a suitable treatment approach. In order to meet the design requirements of the Virginia *Waterworks Regulations*, an engineer licensed to practice in Virginia had to prepare plans and specifications. The owners of this small system did not have the resources to take the next steps of finding and paying an engineer. ODW field staff referred them to the Small Project Engineering program in January 2020. The contract-engineering firm drafted a Task Order to complete a site visit to collect all available data and document the existing conditions. Next, they prepared the required engineering documents, conferred with the field office on necessary changes, and submitted final plans and specifications in 2020. The waterworks now has the required documents so that they can pay for the purchase and installation of the equipment. The Small Project Engineering program supports small waterworks in complying with the engineering requirements of the *Regulations* and facilitates the resolution of public health issues in drinking water systems.

2.17 Staffing

ODW's Capacity Development staff are part of the Training, Capacity Development and Outreach (TCDO) Division of the Office of Drinking Water. The Capacity Development team reports to the TCDO Director and consists of three full-time regional sustainability coordinators with one serving as supervisor, one non-community sustainability coordinator who works with systems across the state, primarily with TNCs, and a part-time assistant. The Division considers field office staff time technical assistance; however, the time tracked for staff did not identify specific tasks that the field offices conduct which should be included in the technical assistance category of the 15% set-aside.

2.18 Financial Capacity Building

The VRA provides direct technical assistance to waterworks on financial capacity on behalf of ODW. VRA charges the ODW Capacity Development Program for time spent to provide direct technical assistance for financial development to the waterworks.

2.19 Receivership Program

Section 32.1-174.3 of the *Code of Virginia* authorizes the State Health Commissioner to petition the circuit court for the jurisdiction for the appointment of a receiver. Although the Code authorizes the process, there are currently no existing state funds for this program. ODW intends to utilize DWSRF 15% set-aside funds to meet the needs of this "program." ODW will request funds be paid to third-party service providers to manage the receivership as ordered by the court system. This management will constitute direct technical assistance under the 15% set-aside provisions of the DWSRF. ODW limits this assistance to a specified period not to exceed 24 months. Technical assistance will address technical, managerial, and financial factors throughout the waterworks organization. ODW cannot utilize these funds for the renovation, expansion or maintenance of the waterworks. ODW anticipates conducting emergency procurements for

technical assistance to specific waterworks as described in the 2014 revision of the EPA approved Capacity Development Strategy.

2.20 Implementation Review

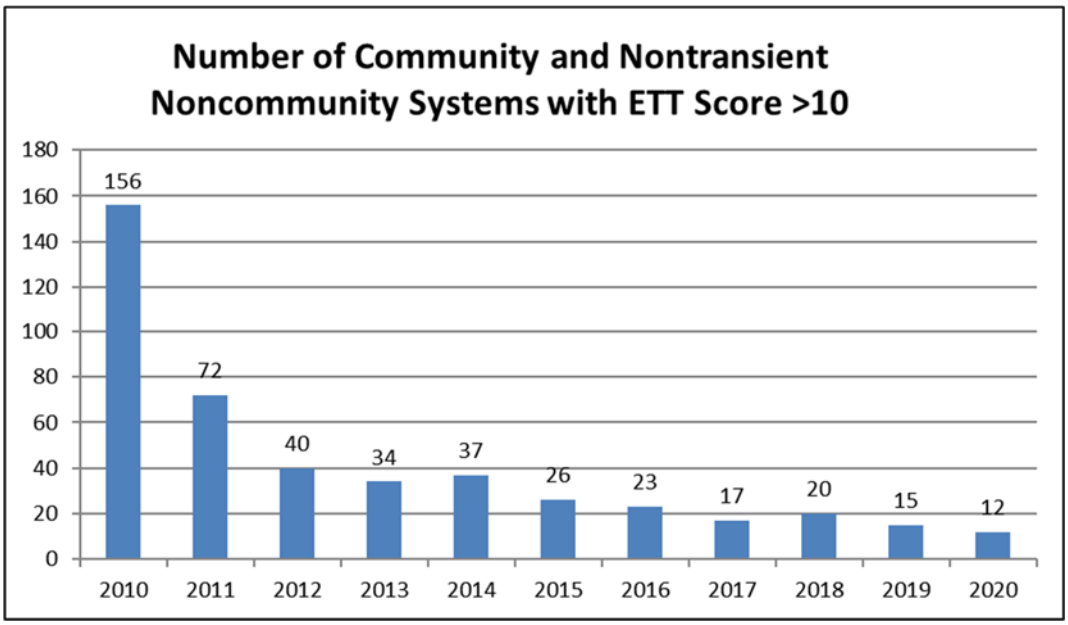
ODW utilizes the sanitary survey program as a means to assess waterworks' TMF capacity. During sanitary surveys, ODW field staff conduct thorough evaluations of waterworks infrastructure and water treatment processes. Staff reviews water quality-monitoring records, operational practices and controls, and assesses waterworks staff qualifications. ODW performs sanitary surveys more frequently than required by EPA, from once every six months to once every three years; staff base the frequency on the population served by the waterworks and its facilities – ODW inspects larger waterworks more frequently. The sanitary survey process identifies, prioritizes and targets waterworks' capacity needs. If a waterworks demonstrates little or no capacity, ODW addresses the issues very similarly to the methods utilized for new systems, by providing the following:

- Follow-up sanitary surveys and increased frequency of future sanitary surveys,
- Regular reminders of compliance requirements (*i.e.*, monitoring, reporting, etc.),
- Development or redevelopment of a WBOP,
- Referral to upcoming formal and informal training,
- Direct one-on-one assistance by ODW's capacity development staff,
- Referral to technical assistance providers,
- Notifications and reminders of upcoming funding opportunities,
- Warnings from ODW's enforcement staff, and/or,
- Initiation of enforcement action.

2.21 Update on Waterworks with an ETT ≥ 11

The July 2020 ETT report is included in Appendix C. There are nine Community and one NTNC waterworks with a score of 11 or higher. These score reflect a 40% drop from the previous reporting period. In the last period, 15 community waterworks had a score of 11 or higher. The previous period had no NTNCs on the list. The use of the EPA's ETT will continue to serve as a tool to measure the improvement in waterworks' TMF capacity. As shown in Figure 6, below, the number of waterworks with ETT scores greater than 10 has dramatically decreased since 2010. During 2010, 156 waterworks had an ETT scores greater than 10; this number dropped to 72 waterworks during 2011 and to 40 waterworks in 2012. Over the last ten years, the number of waterworks with an ETT score greater than 10 has declined steadily. Capacity Development staff work closely with the waterworks, field office staff, and enforcement staff to look for areas to reduce waterworks noncompliance.

Figure 6: Number of Community and Nontransient Noncommunity Systems with ETT Score >10



2.22 Program Progress and Performance Measures

Community and nontransient noncommunity waterworks are required to have licensed operators. Since 2008, there has been a gradual increase in waterworks fulfilling this requirement, with compliance exceeding 99% for the last seven years.

Table 2, below, shows the breakdown of operators by system type as of June 5, 2020, based on information gathered from SDWIS. Since DPOR does not track by type of system and only tracks operators by class, these numbers may differ slightly from other reported percentage of operators. In addition, this data does not count more than one operator per system, only if the system had an active designated operator during the reporting period.

Table 3: Percent of Waterworks with Licensed Designated Operators as of June 5, 2020

Percent of Waterworks with Licensed Designated Operators As of June 5, 2020			
System Type	**# of Systems**	**# of Systems with Active Designated Operator**	**% of Systems with Active Designated Operator**
C	1093	1085	99.27%
NTNC	505	504	99.80%
Total	1598	1589	99.44%

Further information regarding licensure of operators in Virginia is located in the "Annual Report on Operator Certification in Virginia", for the reporting period of July 1, 2019 through June 30, 2020. Table 3, below, depicts the number of licenses in Virginia by class, and the net gain or loss. The total number of licensed waterworks operators in Virginia is 2,201 as of June 5, 2020. This reporting period saw a gain of 102 operators in total. Staff attributes this increase to operators taking advantage of education opportunities and the upward trend of licensure testing pass rates. To keep this increase in licensed operators trending up, VDH-ODW plans to continue offering low cost education solutions, which are now more important than ever. Data obtained from DPOR on June 5, 2020.

Table 4: Number of Operators by Class as of June 5, 2020

Number of Operators by Class as of June 5, 2020			
Class License	Number of 2020 Licensees	Number of 2019 Licensees	Net Gain (Loss) Since 2018 Report
6	239	235	4
5	235	209	26
4	336	320	16
3	378	357	21
2	316	304	12
1	697	674	23
Total	2201	2099	102

2.23 Projected Activities

As described in previous sections of this report, ODW has increased partnership efforts with technical assistance providers and other organizations. These efforts increase waterworks' TMF capacity by providing training, outreach materials, and field services. Capacity development partnerships have included organizations such as Virginia Tech, VRWA, SERCAP, Environmental Finance Center Network (EFCN), planning district commissions, USDA-RD, and others. ODW will look to expand and improve partnerships with other organizations. The expected benefit will be to reduce noncompliance and extend Capacity Development Program initiatives. ODW collaborated with partners on "Asset Management for Your Waterworks," An introductory course on asset management. We expected to offer this class again in 2020, but had to delay it due to the pandemic. ODW is also planning to add advanced asset management training in the future. ODW measures the success of these courses based on collaboration with our partners where each brings their own expertise to the classroom.

2.24 Modifications to Strategy

In July 2020, VDH sent the EPA a revised Strategy, which incorporates the requirements of the America's Water Infrastructure Act (AWIA) for review and comment. ODW will submit the final revised Strategy before the end of the calendar year. The reporting period, as indicated in other

sections, has seen the deployment and implementation of most of the initiatives contained within the existing Strategy. The only exception is that ODW has not initiated a receivership case to date.

A significant part of the updated Strategy concerns asset management planning. Asset management planning is an important part of long-term prioritization of the maintenance, repair, improvement, and sustainability of waterworks. This is reflected in America's Water Infrastructure Act of 2018 (AWIA) Section 2012, which amends the SDWA to require Virginia to amend its Capacity Development Strategy. The revised Strategy must describe how Virginia will encourage the development and use of Asset Management Plans (AMPs). ODW staff revised the Strategy in August 2020 based on feedback received from EPA. ODW will submit the final revision of the Strategy prior to the end of 2020.

ODW began to formalize a process to use AMPs in Virginia prior to the enactment of AWIA. ODW and participating organizations trained technical service providers' staff on AMPs and encouraged their use as a sustainability tool. ODW provides funding mechanisms for waterworks to develop AMPs that include the five core components: (1) Asset Inventory, (2) Life Cycle Costs, (3) Level of Service, (4) Criticality and (5) Long-term Funding. ODW can fund AMPs through the Planning and Design Fund Program, the Small Project Engineering Program, and as an additional engineering cost associated with a DWSRF-funded construction project. ODW requires an AMP as part of a DWSRF project when a waterworks does not already have a current plan or has not updated it within the last 5 years. To encourage asset management planning, ODW will make available the lesser of the actual cost of an AMP or $15,000 as principal forgiveness when requested as part of a construction funding offer.

ODW partnered with SERCAP and Draper-Aden and Associates to train VDH, SERCAP, and VRWA staff on effective methods for training waterworks staff on AMPs. This train-the-trainer effort forms the backbone of the asset management collobarative effort in Virginia. ODW staff trains waterworks staff on AMPs, but also refers water utilities to technical assistance partners when completing AMPs. ODW is continuing to provide in-person and virtual training to waterworks owners and operators on this important tool to enhance TMF capacity and move towards waterworks sustainability.

PART 3: ADDITIONAL REPORTING REQUIREMENTS AND OTHER CONCERNS

3.1 Documentation of Ongoing Implementation

ODW submits this report to EPA as evidence of the Commonwealth of Virginia's commitment and implementation of the Capacity Development Strategy for waterworks owners and operators in the Commonwealth. This report covers the federal fiscal year 2020, from October 1, 2019 through September 30, 2020. Appendix D contains information regarding technical assistance providers contracted through EPA. ODW provides this information as supplemental documentation to any required reporting from SERCAP, VRWA, Virginia Section of the American Water Works Association (AWWA), and EFCN.

3.2 Report to the Governor

The Commonwealth of Virginia, Department of Health submitted the report "Efficacy of Virginia's Waterworks Capacity Development Strategy" on September 21, 2020, to the Governor

of Virginia. Additionally, ODW submitted the report to EPA and published the report on the VDH–ODW website at: https://www.vdh.virginia.gov/content/uploads/sites/14/2020/09/2020-Final-Governors-Report-with-Letterhead.pdf

The next Triennial Report is due by September 30, 2023.

3.3 DWSRF Assistance to Non-Complying Waterworks

The Commonwealth of Virginia's Financial and Construction Assistance Program requires that applicants meet eligibility requirements. Program eligibility includes the following criteria:

- An owner of a community waterworks or nonprofit non-community waterworks is eligible, except the state and federal government. 42 USC § 300j-12(a)(2).
- Section 1452 of the SDWA (42 USC § 300j-12(a)(3)) states "…no assistance… shall be provided to a public water system that– (i) does not have the technical, managerial, and financial capability to ensure compliance with the requirements of this subchapter; or (ii) is in significant noncompliance with any requirement of the national primary drinking water regulations or variance." However, a waterworks may receive assistance if use of funds will ensure compliance and the owner agrees to undertake appropriate changes in operations (including ownership, management, accounting, rates, maintenance, consolidation, alternative water supply, etc.) to assure compliance over the long term.
- Section 32.1-172 of the *Code of Virginia* requires that a waterworks owner obtain a permit from the State Health Commissioner before establishing, constructing, or operating a waterworks. ODW's permitting process includes a comprehensive business plan (the WBOP), which addresses the waterworks owner's ability to supply safe drinking water over the long term by identifying sufficient technical, managerial, financial and operational abilities.

3.4 Evaluation of TMF Capacity for Waterworks Seeking DWSRF Assistance

ODW requires documented criteria be submitted with construction, and planning and design fund applications to ensure that applicants have TMF capacity prior to obtaining assistance through the DWSRF. Specific program criteria follows:

Financial

- ODW collaborates with VRA to ensure that all potential recipients of DWSRF assistance have adequate financial capacity. VRA reviews annual audits, tax records, analyzes rate structures, cash flow, and completes a comprehensive credit review.
- Financial requirements of the program include:
  - Compliance with the *Virginia Public Procurement Act*,
  - Compliance with *Office of Management and Budget Circular A – 102,*
  - Compliance with the *Uniform Financial Report Manual* and the *Single Audit Act.*

Technical

- ODW completes a comprehensive technical evaluation of all potential recipients of DWSRF funds. Individual evaluations include review of compliance with the

Waterworks Regulations, ETT review, routine sanitary survey review, and an evaluation completed by the ODW field staff. This review ensures that ODW provides no assistance to waterworks that do not have TMF capacity to ensure compliance with the SDWA, unless the assistance resolves the noncompliance.

- Technical requirements of the program include:
  - An environmental review to include environmental impacts as well as measures (alternatives, prevention or mitigation) which could minimize adverse impacts from the construction of the project.
  - Section 32.1-172 B of the *Code of Virginia* requires a person to apply to the ODW field office for a permit prior to the establishment, construction or operation of a waterworks.
  - A Preliminary Engineering Conference is required. This provides for an exchange of information between all parties and ensures adherence to health protection and compliance objectives.
  - A Preliminary Engineering Report (PER) is required and must be prepared under the supervision of a Virginia licensed professional engineer. Information required for the PER is listed in 12VAC5-590-200 C of the *Waterworks Regulations*. A PER must include all viable alternatives; the DWSRF reserves the right to fund only the lowest cost alternative or the feasible options.
  - Plans, specifications, and construction documentation are required. Plans and specifications must comply with 12VAC5-590-200 D, E & F of the *Waterworks Regulations*. Construction documents must include:
    - Compliance with *Equal Employment Opportunity Act of 1972*
    - Certification on *Prohibition of Segregated Facilities* (1998, as amended in 2015)
    - Compliance with minority and women's business enterprise goals
    - Compliance with the *Civil Rights Act of 1964*
    - Compliance with *Age Discrimination Act of 1975, Rehabilitation Act of 1973*, and the prohibition against sex discrimination; and,
    - Utilization of small businesses in rural areas.
  - A permit is required prior to the construction or operation of any waterworks in accordance with 12 VAC 5-590-190 of the *Waterworks Regulations*.

Managerial

- ODW completes a general managerial review of all potential DWSRF recipients. Staff conducts this review using compliance information, review of sanitary surveys, review of budget and rate information, and other information provided with each DWSRF application.
- Managerial requirements of the program can include a WBOP when additional information is required. Recipients are required to submit the WBOP and receive approval prior to DWSRF assistance.

  The WBOP includes eight parts, as follows:
  - Parts 1 through 4 consist of written statements, charts, or tables that describe the waterworks and its history, staffing arrangements, management and operations policies and procedures, and facility planning,

- Part 5 consists of financial worksheets that summarize the waterworks' budget and financial resources,
- Part 6 summarizes any sustainability improvements identified in the previous sections that would improve TMF capacity,
- Parts 7 and 8 include a checklist of WBOP submittal attachments, and a certification statement,
- The WBOP handbook is available to the public at: https://www.vdh.virginia.gov/drinking-water/capacity-development/waterworks-business-operations-plan/ ,
- The WBOP web resources consist of the following:
  - Instructions for completing the WBOP for community and non-transient noncommunity waterworks
  - Companion financial worksheets in Excel format
  - A simplified worksheet for transient noncommunity WBOPs.

3.5 DWSRF Success Stories

The DWSRF Annual Report submitted to EPA on September 30, 2020 contained two highlighted projects.

3.6 Capacity Development Success Stories

Division of Capacity Development – Staff Achievements

ODW's capacity development staff is part of the Training, Capacity Development and Outreach Division of the Office of Drinking Water. Five full-time and one part-time staff actively support the Capacity Development Strategy for the reporting period. Four of the full-time positions are "Sustainability Coordinators". The Sustainability Coordinators came from backgrounds as ODW inspectors. They provide direct technical assistance to both waterworks and other ODW staff. One of those positions is new this reporting period. In late 2019, VDH added one position to the Capacity Development team that focuses on assistance to TNC waterworks. During the reporting period, staff accomplished the following:

- Developed and deployed an "Asset Management for your Waterworks" workshop for small waterworks, collaborating with SERCAP, VRWA, and Draper Aden and Associates
- Initiated and/or coordinated training events for waterworks
- Advanced the use of an Auto-dialer system to remind waterworks to collect samples
- Made numerous marketing efforts to increase the number of waterworks personnel attending training events
- Collaborated with United States Department of Agriculture-Rural Development (USDA-RD) and planning district commissions on funding workshops for water and wastewater utilities
- Worked with many utility boards to provide regulatory insight, discuss technical issues, and offer suggestions for funding options

Town of Port Royal, Caroline County

The Town of Port Royal located in rural Caroline County, Virginia, completed several improvements to their waterworks in 2019 to comply with the Waterworks Regulations and

eliminate significant deficiencies. Using $990,684 in VDH funding with $594,410 as principal forgiveness, with an additional $429,000 grant/loan mix from USDA-RD and $30K from SERCAP the Town was able to complete this ambitious project. The work in Port Royal is continuing even after the completion of construction. As part of the Town's continuing transformation, SERCAP recently completed a Water Rate Study for the Town in the spring of 2020. To ensure the financial sustainability of the Town and its water system, usage fees were changed from a "flat rate" billing system (one in which everyone pays the same amount for water, no matter how much they use) to a "metered" system, which charges each customer for water based upon their home or business' actual usage. The Town adopted the new, recommended water rates and associated ordinances after a public hearing in late June of 2020. SERCAP's work with the Town, however, continues. The Town and SERCAP are making final arrangements to begin GPS/GIS mapping of the Town's utilities, followed by the development of an Asset Management Plan. The plan will allow the Town to more fully understand the long-term financial needs for the water system and aid them in their financial and managerial decision-making.

Town of Monterey, Highland County

In early August 2017, the Town of Monterey waterworks in Highland County suffered a catastrophic event resulting in a water outage to the approximately 450 residents served. The infrastructure impacts included empty water storage tanks, inadequate water pressure, and inadequate well pumping rates from well pump malfunctions and low well water levels. Officials declared a local emergency, and issued a Boil Water Advisory with assistance from VDH. Neighboring localities and VDH provided assistance. The Town restored the operation of the system to prior conditions and lifted the Boil Water Advisory. The Town did not have adequate monitoring and fail-safes to reduce the likelihood of a repeat occurrence. In April 2019, the Town applied for $215,000 in DWSRF funding to install a Supervisory Control and Data Acquisition (SCADA) system. Capacity Development staff determined the Town did not have adequate TMF capacity to meet DWSRF funding requirements. The Town recognized that TMF capacity improvement would represent a positive, long-term commitment to the utility and community. VDH requested that the Town complete two action items in order to be eligible for funding: a water rate analysis and a WBOP. In November 2019, the Town presented and adopted a Board resolution committing to the completion of both items. The Town completed a water rate analysis with the Environmental Finance Center Network's help and a draft WBOP with Capacity Development staff's help. The Town's DWSRF construction project is moving forward.

Town of Buchanan, Botetourt County

The Town of Buchanan in Botetourt County, population of 1,220, had a major water leak in March 2020. The Vice Mayor contacted VRWA regarding an estimated 40,000 gallons per day of water loss from the Town's distribution system. A VRWA circuit rider arrived on-site and located an area that appeared to be the location of the leak. After isolating a section of pipe and re-pressurizing the system, the Town could not determine a location of leakage. VRWA used a leak correlator and pressure tested the main to find the leaking pipe's location. VRWA provided direction about the necessary repairs to abate the water loss. VDH provided the leak detection equipment to VRWA through a set-aside grant, showing the success of this funding.

Town of Charlotte Courthouse, Charlotte County

The Town of Charlotte Courthouse in Charlotte County has a population of about 1,975 people. Maintenance staff from the Town called VRWA in early 2020 and requested help finding a water line that appeared to be leaking. The circuit rider located the water main, found the water leak,

and shut the water off at a pool house near a private club to prevent the Town from losing all its stored water. The circuit rider found the water line going to the pool house had its own cut off valve. Town staff shut off the valve to allow the main building to continue getting water. Again, VDH provided the leak detection equipment to VRWA through a set-aside grant.

Rye Valley Water Authority, Smyth County

Rye Valley Water Authority in Smyth County serves approximately 1,276 people. The Authority contacted VRWA on January 13, 2020, to help with a major water loss within the Authority's drinking water distribution system. At the time of the call, Rye Valley had 27% water revenue accountability, meaning that 63% of the costs to treat and distribute drinking water had no revenue generating potential. A VRWA circuit rider arrived on Jan. 16, 2020. After a day and a half of surveying valves, meters, and hydrants, the circuit rider found a leak. VRWA used a correlator in survey mode to confirm the leak. VRWA decided that ground-penetrating radar could find the service line better than the use of other water-loss detection instrumentation. The circuit rider and Town found a point of interest and marked it for excavation. Rye Valley Water Authority reported that VRWA's circuit rider found the location of the line leak. The Authority repaired the line, and the circuit rider recommended that the authority replace the aging galvanized pipe service line. VDH provided the leak detection equipment to VRWA through a set-aside grant.

The success stories in the preceding paragraphs show the range of complexity of issues facing waterworks in Virginia. In its work to enforce state and federal drinking water laws and regulations, VDH uses a range of regulatory, compliance, and both technical and financial assistance tools to improve the capacity of the 2,808 waterworks in the state. VDH has found that while statewide programs and initiatives are able to ensure that most waterworks comply with the regulations, often VDH must take a case-by-case approach to affect lasting change at specific waterworks. In spite of many challenges facing the regulated waterworks community, VDH remains committed to its goal of protecting the health and promoting the well-being of all people in Virginia.

APPENDIX A
New Community and NTNC Waterworks
October 1, 2017 – September 30, 2020

Newly constructed facilities and existing facilities under new ownership are included. Please note that not all new waterworks listed have received operation permits.County or City

County or City	PWSID	Waterworks Name	System Type	Date
PRINCE WILLIAM	6153323	PWCSA - HOADLY MANOR	C	1/3/2017
PRINCE GEORGE	3149870	SIMPSONS COUNTRY CENTER	NTNC	1/25/2017
FLOYD	1063154	RAMSEY MOBILE HOME PARK	C	1/26/2017
FREDERICK	2069261	GAINESBORO ELEM/MID SCHOOL	NTNC	3/1/2017
FRANKLIN COUNTY	5067786	THE RETREAT	C	4/10/2017
SUSSEX	3183595	THE SCOTTS COMPANY	NTNC	5/16/2017
HENRY	5089853	VICTORY BAPTIST ACADEMY	NTNC	5/23/2017
APPOMATTOX	5011047	APPOMATTOX CHRISTIAN ACADEMY	NTNC	5/25/2017
BEDFORD COUNTY	5019052	BEDFORD REGIONAL WATER AUTHORITY	C	7/24/2017
BEDFORD COUNTY	5019400	SMITH MOUNTAIN LAKE WTP	C	7/26/2017
POWHATAN	4145025	THE BRIDGE CHURCH	NTNC	8/18/2017
PRINCE GEORGE	3149210	SPN, CORP.- LIGHTHOUSE/QUALITY INN	NTNC	9/28/2017
ISLE OF WIGHT	3093160	CARROLLTON MEDICAL BUILDING	NTNC	12/11/2017
NORTHAMPTON	3131851	STANLEY MOBILE HOME PARK - NORTH	C	12/11/2017
HALIFAX	5083270	SOUTHSTONE BEHAVIORAL HEALTH	NTNC	3/28/2018
RUSSELL	1167814	THOMPSON CREEK RCPSA	C	4/1/2018
FLUVANNA	2065195	THE LIGHT ACADEMY	NTNC	5/30/2018
CAROLINE	6033515	PEUMANSEND CREEK REGIONAL JAIL	NTNC	7/9/2018
POWHATAN	4145625	MOSLOW WOOD PRODUCTS	NTNC	8/24/2018
RUSSELL	1167155	THREE CREEK APPAREL	NTNC	9/19/2018
MECKLENBURG	5117360	GRANITE HALL SHORES	C	10/8/2018
MECKLENBURG	5117660	PEETE RIVER FARM	C	10/8/2018
ROCKINGHAM	2165122	SHENANDOAH VALLEY CHRISTIAN SCHOOL	NTNC	12/5/2018
MONTGOMERY	1121230	FOUNTAIN WATERWORKS	C	1/1/2019
WESTMORELAND	4193702	OAK GROVE BAPTIST	NTNC	1/1/2019
NEW KENT	4127025	ALLIED PALLET COMPANY	NTNC	5/20/2019
RUSSELL	1167200	FINCASTLE ESTATES - RCPSA	C	6/1/2019
CUMBERLAND	5049110	ENVIGO - CUMBERLAND	NTNC	6/18/2019
AUGUSTA	2015195	GREENHOUSE CHRISTIAN LEARNING	NTNC	6/27/2019
ROCKINGHAM	2165580	MILL CREEK CHURCH OF THE BRETHREN	NTNC	7/24/2019
CHESTERFIELD	4041025	AL MADINA SCHOOL	NTNC	8/28/2019
HANOVER	4085930	WEE CARE	NTNC	9/17/2019
LOUISA	2109648	SALEM CHRISTIAN SCHOOL	NTNC	11/1/2019
SOUTHAMPTON	3175020	BELMONT PEANUTS	NTNC	4/4/2020
NORTHAMPTON	3131185	EASTVILLE COMMUNITY HEALTH CENTER	NTNC	4/30/2020
ACCOMACK	3001489	NANDUA MIDDLE SCHOOL	NTNC	5/4/2020
SCOTT	1169380	SCPSA-BIG MOCCASIN	C	5/13/2020
ALBEMARLE	2003450	LITTLE LEARNERS TRICOUNTY CHILDCARE	NTNC	6/8/2020
NORTHAMPTON	3131056	COASTAL PRECAST SYSTEMS	NTNC	7/24/2020
MADISON	6113184	MADISON COUNTY SCHOOL BOARD	NTNC	7/31/2020

Appendix B

List of New Water Systems Violations

As of the July 2020 published ETT list, no “new” waterworks are priority systems according to EPA's Office of Enforcement and Compliance Assurance's Enforcement Targeting Tool (ETT).

VA4041025	AL MADINA SCHOOL				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
2	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	26-Nov-19	01-Oct-19
3	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	26-Dec-19	01-Nov-19
4	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	04-Feb-20	01-Dec-19
VA5011047	APPOMATTOX CHRISTIAN ACADEMY				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
3	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	7-Sep-18	1-Aug-18
5	66	LEAD CONSUMER NOTICE (LCR)	LEAD & COPPER RULE	30-Nov-18	22-Oct-18
VA5019052	BEDFORD REGIONAL WATER AUTHORITY (BRWA)				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
1	2	MCL, LRAA	TOTAL HALOACETIC ACIDS (HAA5)	20-Nov-18	1-Oct-18
2	2	MCL, LRAA	TOTAL HALOACETIC ACIDS (HAA5)	14-Feb-19	1-Jan-19
4	2	MCL, LRAA	TOTAL HALOACETIC ACIDS (HAA5)	29-May-19	1-Apr-19
VA3131056	COASTAL PRECAST SYSTEMS				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
2020-2	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	29-Sep-20	1-Aug-20
VA5049110	ENVIGO - CUMBERLAND				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
1	1A	MCL, E. COLI, POS E COLI (RTCR)	E. COLI	12-Aug-19	1-Aug-19
3	03	MONITORING, ROUTINE MAJOR	CHLORIDE	07-Feb-20	01-Jan-17
4	03	MONITORING, ROUTINE MAJOR	FLUORIDE	07-Feb-20	01-Jan-17
5	03	MONITORING, ROUTINE MAJOR	SULFATE	07-Feb-20	01-Jan-17

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List of New Water Systems Violations

6	03	MONITORING, ROUTINE MAJOR	COLOR	07-Feb-20	01-Jan-17
7	03	MONITORING, ROUTINE MAJOR	CORROSIVITY	07-Feb-20	01-Jan-17
8	03	MONITORING, ROUTINE MAJOR	ODOR	07-Feb-20	01-Jan-17
9	03	MONITORING, ROUTINE MAJOR	TDS	07-Feb-20	01-Jan-17
10	03	MONITORING, ROUTINE MAJOR	ARSENIC	07-Feb-20	01-Jan-17
11	03	MONITORING, ROUTINE MAJOR	BARIUM	07-Feb-20	01-Jan-17
12	03	MONITORING, ROUTINE MAJOR	CADMIIUM	07-Feb-20	01-Jan-17
13	03	MONITORING, ROUTINE MAJOR	CHROMIUM	07-Feb-20	01-Jan-17
14	03	MONITORING, ROUTINE MAJOR	IRON	07-Feb-20	01-Jan-17
15	03	MONITORING, ROUTINE MAJOR	MANGANESE	07-Feb-20	01-Jan-17
16	03	MONITORING, ROUTINE MAJOR	MERCURY	07-Feb-20	01-Jan-17
17	03	MONITORING, ROUTINE MAJOR	NICKEL	07-Feb-20	01-Jan-17
18	03	MONITORING, ROUTINE MAJOR	SELENIUM	07-Feb-20	01-Jan-17
19	03	MONITORING, ROUTINE MAJOR	SODIUM	07-Feb-20	01-Jan-17
20	03	MONITORING, ROUTINE MAJOR	ANTIMONY, TOTAL	07-Feb-20	01-Jan-17
21	03	MONITORING, ROUTINE MAJOR	BERYLLIUM, TOTAL	07-Feb-20	01-Jan-17
22	03	MONITORING, ROUTINE MAJOR	THALLIUM, TOTAL	07-Feb-20	01-Jan-17
23	03	MONITORING, ROUTINE MAJOR	ZINC	07-Feb-20	01-Jan-17
24	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	20-Apr-20	01-Mar-20
25	66	LEAD CONSUMER NOTICE (LCR)	LEAD & COPPER RULE	13-Aug-20	23-Jun-20
26	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	28-Aug-20	01-Jul-20
VA1167200	FINCASTLE ESTATES - RCPSA				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
1	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	21-Aug-19	1-Jul-19
2	71	CCR REPORT	CONSUMER CONFIDENCE RULE	28-Jul-20	01-Jul-20
VA2069261	GAINESBORO ELEMENTARY/MIDDLE				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
1	1A	MCL, E. COLI, POS E COLI (RTCR)	E. COLI	15-Nov-19	01-Oct-19
VA2015195	GREENHOUSE CHRISTIAN LEARNING CENTER				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date

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1	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	15-Nov-19	01-Oct-19
VA2003450	LITTLE LEARNERS TRICOUNTY CHILDCARE				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
2020-2	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	24-Jul-20	1-Jun-20
VA4145625	MOSLOW WOOD PRODUCTS				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
2	3	MONITORING, ROUTINE MAJOR	CIS-1,2-DICHLOROETHYLENE	6-Feb-19	1-Oct-18
10	3	MONITORING, ROUTINE MAJOR	1,2-DICHLOROETHANE	6-Feb-19	1-Oct-18
8	3	MONITORING, ROUTINE MAJOR	1,1-DICHLOROETHYLENE	6-Feb-19	1-Oct-18
6	3	MONITORING, ROUTINE MAJOR	P-DICHLOROBENZENE	6-Feb-19	1-Oct-18
5	3	MONITORING, ROUTINE MAJOR	O-DICHLOROBENZENE	6-Feb-19	1-Oct-18
11	3	MONITORING, ROUTINE MAJOR	1,1,1-TRICHLOROETHANE	6-Feb-19	1-Oct-18
3	3	MONITORING, ROUTINE MAJOR	XYLENES, TOTAL	6-Feb-19	1-Oct-18
15	3	MONITORING, ROUTINE MAJOR	1,1,2-TRICHLOROETHANE	6-Feb-19	1-Oct-18
4	3	MONITORING, ROUTINE MAJOR	DICHLOROMETHANE	6-Feb-19	1-Oct-18
12	3	MONITORING, ROUTINE MAJOR	CARBON TETRACHLORIDE	6-Feb-19	1-Oct-18
1	3	MONITORING, ROUTINE MAJOR	1,2,4-TRICHLOROBENZENE	6-Feb-19	1-Oct-18
14	3	MONITORING, ROUTINE MAJOR	TRICHLOROETHYLENE	6-Feb-19	1-Oct-18
7	3	MONITORING, ROUTINE MAJOR	VINYL CHLORIDE	6-Feb-19	1-Oct-18
16	3	MONITORING, ROUTINE MAJOR	TETRACHLOROETHYLENE	6-Feb-19	1-Oct-18
17	3	MONITORING, ROUTINE MAJOR	CHLOROBENZENE	6-Feb-19	1-Oct-18
18	3	MONITORING, ROUTINE MAJOR	BENZENE	6-Feb-19	1-Oct-18
19	3	MONITORING, ROUTINE MAJOR	TOLUENE	6-Feb-19	1-Oct-18
20	3	MONITORING, ROUTINE MAJOR	ETHYLBENZENE	6-Feb-19	1-Oct-18
21	3	MONITORING, ROUTINE MAJOR	STYRENE	6-Feb-19	1-Oct-18
13	3	MONITORING, ROUTINE MAJOR	1,2-DICHLOROPROPANE	6-Feb-19	1-Oct-18
9	3	MONITORING, ROUTINE MAJOR	TRANS-1,2-DICHLOROETHYLENE	6-Feb-19	1-Oct-18
22	3	MONITORING, ROUTINE MAJOR	NITRATE-NITRITE	15-Feb-19	1-Jan-18
23	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	25-Apr-19	1-Mar-19

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List of New Water Systems Violations

VA5117660	PEETE RIVER FARM				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
1	02	MCL, LRAA	TTHM	02-Dec-19	01-Oct-19
VA1063154	RAMSEY MOBILE HOME PARK				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
7	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	24-May-17	1-Mar-17
2	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	24-May-17	1-Apr-17
4	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	22-Jun-17	1-May-17
5	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	25-Jul-17	1-Jun-17
9	1A	MCL, E. COLI, POS E COLI (RTCR)	E. COLI	15-Mar-18	1-Feb-18
8	2C	CORRECTIVE/EXPEDITED ACTIONS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	25-Apr-18	6-Apr-18
10	4A	REPORTING, ASSESSMENT FORMS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	25-Apr-18	6-Apr-18
11	4A	REPORTING, ASSESSMENT FORMS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	3-Aug-18	9-Jul-18
12	2A	LEVEL 1 ASSESS, MULTIPLE TC POS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	3-Aug-18	9-Jul-18
13	71	CCR REPORT	CONSUMER CONFIDENCE RULE	22-Aug-18	1-Jul-18
14	2C	CORRECTIVE/EXPEDITED ACTIONS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	21-Sep-18	1-Sep-18
15	4A	REPORTING, ASSESSMENT FORMS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	21-Sep-18	4-Sep-18
18	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	4-Dec-18	1-Nov-18
17	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	4-Dec-18	1-Oct-18
19	4A	REPORTING, ASSESSMENT FORMS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	31-Jan-19	13-Dec-18
20	2C	CORRECTIVE/EXPEDITED ACTIONS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	12-Feb-19	19-Jan-19
21	2C	CORRECTIVE/EXPEDITED ACTIONS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	12-Feb-19	5-Jan-19

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22	2C	CORRECTIVE/EXPEDITED ACTIONS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	12-Feb-19	4-Jan-19
23	52	FOLLOW-UP OR ROUTINE TAP M/R (LCR)	LEAD & COPPER RULE	5-Mar-19	1-Jan-19
27	71	CCR REPORT	CONSUMER CONFIDENCE RULE	03-Sep-20	01-Jul-20
VA3149870	SIMPSONS COUNTRY CENTER				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
3	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	30-Mar-17	1-Feb-17
4	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	5-May-17	1-Mar-17
5	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	24-May-17	1-Apr-17
6	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	19-Jul-17	1-May-17
7	34	MONITOR GWR TRIGGERED/ADDITONAL, MAJOR	E. COLI	18-Sep-17	26-Jul-17
9	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	16-Feb-18	1-Jan-18
11	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	20-Mar-18	1-Feb-18
13	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	22-Aug-18	1-Jul-18
14	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	24-Sep-18	1-Aug-18
15	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	31-Oct-18	1-Sep-18
16	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	5-Dec-18	1-Oct-18
17	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	17-Dec-18	1-Nov-18
18	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	24-Jan-19	1-Dec-18
21	3	MONITORING, ROUTINE MAJOR	NITRATE-NITRITE	13-Feb-19	1-Jan-18
20	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	26-Feb-19	1-Jan-19
VA5019400	SMITH MOUNTAIN LAKE WTP				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
5078409	2	MCL, LRAA	TOTAL HALOACETIC ACIDS (HAA5)	11-Feb-16	1-Jan-16
VA5049819	SOUTHSIDE ENTERPRISES				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
1	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	29-Mar-17	1-Feb-17
VA3149210	SPN, CORP.- LIGHTHOUSE/QUALITY INN				

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Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
716	22	MCL (TCR), MONTHLY	COLIFORM (TCR)	22-Dec-15	1-Nov-15
717	23	MONITORING (TCR), ROUTINE MAJOR	COLIFORM (TCR)	17-Feb-16	1-Dec-15
719	4A	REPORTING, ASSESSMENT FORMS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	30-Mar-17	15-Jan-17
718	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	30-Mar-17	1-Jan-17
720	2A	LEVEL 1 ASSESS, MULTIPLE TC POS (RTCR)	REVISED TOTAL COLIFORM RULE (RTCR)	31-Mar-17	1-Jun-16
721	1A	MCL, E. COLI, POS E COLI (RTCR)	E. COLI	11-Jun-18	1-May-18
722	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	27-Jul-18	1-Jun-18
VA3131851	STANLEY MOBILE HOME PARK - NORTH				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
3	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	1-Oct-18	1-Aug-18
5	3	MONITORING, ROUTINE MAJOR	NITRATE-NITRITE	20-Feb-19	1-Jan-18
6	34	MONITOR GWR TRIGGERED/ADDITONAL, MAJOR	E. COLI	22-Mar-19	13-Feb-19
VA4145025	THE BRIDGE CHURCH				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
4	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	28-Aug-17	1-Jul-17
VA2065195	THE LIGHT ACADEMY				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
2808804	3A	MONITORING, ROUTINE, MAJOR (RTCR)		18-Dec-19	01-Nov-19
2808803	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	22-Jul-19	1-Jun-19
VA1167814	THOMPSON CREEK RCPSA				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
2	27	MONITORING, ROUTINE (DBP), MINOR	CHLORINE	17-Jul-18	1-Apr-18
1	3A	MONITORING, ROUTINE, MAJOR (RTCR)	E. COLI	17-Jul-18	1-Jun-18
3	30	MONITORING, ROUTINE (IDSE), MAJOR	TOTAL HALOACETIC ACIDS (HAA5)	15-Oct-18	1-Jul-18

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List of New Water Systems Violations

4	30	MONITORING, ROUTINE (IDSE), MAJOR	TTHM	16-Oct-18	1-Jul-18
5	71	CCR REPORT	CONSUMER CONFIDENCE RULE	28-Jul-20	01-Jul-20
VA5089853	VICTORY BAPTIST ACADEMY				
Violation No.	Violation Type	Violation Name	Analyte Name	Determination Date	Begin Date
7	3	MONITORING, ROUTINE MAJOR	O-DICHLOROBENZENE	17-Apr-18	1-Jan-18
13	3	MONITORING, ROUTINE MAJOR	1,1,1-TRICHLOROETHANE	17-Apr-18	1-Jan-18
3	3	MONITORING, ROUTINE MAJOR	1,2,4-TRICHLOROBENZENE	17-Apr-18	1-Jan-18
4	3	MONITORING, ROUTINE MAJOR	CIS-1,2-DICHLOROETHYLENE	17-Apr-18	1-Jan-18
5	3	MONITORING, ROUTINE MAJOR	XYLENES, TOTAL	17-Apr-18	1-Jan-18
6	3	MONITORING, ROUTINE MAJOR	DICHLOROMETHANE	17-Apr-18	1-Jan-18
23	3	MONITORING, ROUTINE MAJOR	STYRENE	17-Apr-18	1-Jan-18
9	3	MONITORING, ROUTINE MAJOR	VINYL CHLORIDE	17-Apr-18	1-Jan-18
12	3	MONITORING, ROUTINE MAJOR	1,2-DICHLOROETHANE	17-Apr-18	1-Jan-18
11	3	MONITORING, ROUTINE MAJOR	TRANS-1,2-DICHLOROETHYLENE	17-Apr-18	1-Jan-18
16	3	MONITORING, ROUTINE MAJOR	TRICHLOROETHYLENE	17-Apr-18	1-Jan-18
14	3	MONITORING, ROUTINE MAJOR	CARBON TETRACHLORIDE	17-Apr-18	1-Jan-18
15	3	MONITORING, ROUTINE MAJOR	1,2-DICHLOROPROPANE	17-Apr-18	1-Jan-18
17	3	MONITORING, ROUTINE MAJOR	1,1,2-TRICHLOROETHANE	17-Apr-18	1-Jan-18
8	3	MONITORING, ROUTINE MAJOR	P-DICHLOROBENZENE	17-Apr-18	1-Jan-18
18	3	MONITORING, ROUTINE MAJOR	TETRACHLOROETHYLENE	17-Apr-18	1-Jan-18
10	3	MONITORING, ROUTINE MAJOR	1,1-DICHLOROETHYLENE	17-Apr-18	1-Jan-18
22	3	MONITORING, ROUTINE MAJOR	ETHYLBENZENE	17-Apr-18	1-Jan-18
21	3	MONITORING, ROUTINE MAJOR	TOLUENE	17-Apr-18	1-Jan-18
20	3	MONITORING, ROUTINE MAJOR	BENZENE	17-Apr-18	1-Jan-18
19	3	MONITORING, ROUTINE MAJOR	CHLOROBENZENE	17-Apr-18	1-Jan-18
24	3	MONITORING, ROUTINE MAJOR	NITRATE-NITRITE	9-Jan-19	1-Jan-18

Appendix C

Enforcement Targeting Tool – July 2020

All ETT Scores at or above 11 are highlighted in yellow.

Database: Jul 2020 SDWIS/FED Freeze
(For most states, this includes data up to Mar 31, 2020.)

PWSID	PWS Name	ETT Score	System has HB viols?	PWS Type	Population Served	Priority Since Date	Total Unresolved Points	On Path to Compliance?	School or Childcare
VA3093647	SPRINGFIELD DOWNS	105	Y	CWS	120	12/31/2009	101	Not on Path	N
VA3093400	RESCUE WATERWORKS	94	Y	CWS	203	12/31/2009	90	Not on Path	N
VA3093850	WILLING WORKERS CLUB	78	Y	CWS	31	12/31/2009	74	Not on Path	N
VA4133275	FAIRPORT MARINA	31	N	TNCWS	76	06/30/2019	27	Not on Path	N
VA5143214	GRIT ROAD WATER SUPPLY	21	Y	CWS	210	03/31/2020	20	Not on Path	N
VA5037550	PHENIX, TOWN OF	17	Y	CWS	206	06/30/2020	15	New	N
VA5019809	TUCK AWAY CAMPGROUND	16	Y	TNCWS	30	03/31/2020	14	Not on Path	N
VA5143246	HURT, TOWN OF	15	Y	CWS	1300	06/30/2020	15	New	N
VA4133825	CHESAPEAKE BAY CAMP - RESORT	14	Y	TNCWS	35	09/30/2018	10	Not on Path	N
VA5019379	HARDY ROAD TRAILER PARK, SECTION 2	13	Y	CWS	200	12/31/2018	11	Not on Path	N
VA6059023	TRATTORIA VILLAGIO	13	Y	NTNCWS	175	12/31/2019	11	Not on Path	N
VA5029182	ALI'S MARKETPLACE	12	N	TNCWS	100	06/30/2020	11	New	N
VA5037300	KEYSVILLE, TOWN OF	12	Y	CWS	800	06/30/2020	11	New	N
VA4133600	LUCOM POINT SUBDIVISION	11	N	CWS	90	06/30/2020	7	New	N
VA4075030	PICKEL BARREL	11	N	TNCWS	62	06/30/2020	10	New	N

Appendix D

EPA Grant Projects
Southeast Rural Community Assistance Project (SERCAP)

Project	County	Project Summary	Population
Airfield 4-H Center Operator Training	Sussex	Provided nearly 40 hours of onsite operator training to prepare staff operator and trainees for licensure examinations	323
Brown's Mobile Home Village 2019 CCR	Franklin	At the request of the Office of Drinking Water, completed Consumer Confidence Report	75
Brown's Mobile Home Village ERP	Franklin	At the request of the Office of Drinking Water, prepared an Emergency Response Plan for the system	75
Hardy Road Trailer Park 2019 CCR	Bedford	At the request of the Office of Drinking Water, completed Consumer Confidence Report	200
Hardy Road Trailer Park Compliance*	Bedford	Providing Technical Assistance to address multiple uncorrected Significant Deficiencies; assist in the application for WIIN Grant Funding	200
Lee County PSA – Big Hill 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	188
Lee County PSA – Blackwater 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	240
Lee County PSA – Blue Springs 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	2,873
Lee County PSA – Eastern Lee 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	1,297
Lee County PSA – Ely & Puckett Creek 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	155
Lee County PSA – Fleenortown 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	160
Lee County PSA – Jasper 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	622
Lee County PSA – Keokee 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	445
Lee County PSA – KVS 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	5,003
Lee County PSA – Miller Chapel 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	662

Appendix D

EPA Grant Projects
Southeast Rural Community Assistance Project (SERCAP)

Lee County PSA – Robbins Chapel 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	475
Lee County PSA – St. Charles 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	1,959
Lee County PSA – Stickleyville 2019 CCR	Lee	At the request of the Office of Drinking Water, completed Consumer Confidence Report	457
Phenix Waterworks Business Operations Plan*	Charlotte	Assist in completion of WBOP as required for SRF Funding in Virginia	206
Richmond Cold Storage Groundwater Withdrawal Permit Renewal Application	Isle of Wight	Prepare and submit to Virginia DEQ the GW Withdrawal Permit renewal application for Non-Community Water System	60
Russell County PSA - Belfast 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	1600
Russell County PSA - Hansonville 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	928
Russell County PSA - New Garden/Finney 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	375
Russell County PSA - Swords Creek 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	3233
Tazewell County PSA – Baptist Valley 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	3,857
Tazewell County PSA – Barkay Estates 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	85
Tazewell County PSA – Big Creek 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	300
Tazewell County PSA – Claypool Hill 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	4,897
Tazewell County PSA – Daw Road 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	43
Tazewell County PSA – Eastern Tazewell 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	3,097

Appendix D

EPA Grant Projects
Southeast Rural Community Assistance Project (SERCAP)

Tazewell County PSA – Falls Mills 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	870
Tazewell County PSA – Fort Witten 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	173
Tazewell County PSA – Gratton 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	707
Tazewell County PSA – Jewell Ridge 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	605
Tazewell County PSA – Middle Creek 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	50
Tazewell County PSA – Raven Doran 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	5,800
Additional Projects Aligning with CAP DEV Mission but Funded Through Other Grant Programs			
Appalachian Detention Center 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	140
Big Stone Gap 2019 CCR	Wise	At the request of the Office of Drinking Water, completed Consumer Confidence Report	9,372
Bold Camp 2019 CCR	Wise	At the request of the Office of Drinking Water, completed Consumer Confidence Report	943
Bowling Green Water Rate Study	Caroline	Conducting water rate analysis with the goal of making changes to the existing rate structure	1,111
Buchanan County PSA - Grassy Creek 2019 CCR	Buchanan	At the request of the Office of Drinking Water, completed Consumer Confidence Report	440
Buchanan County PSA – Kennel Gap/Main 2019 CCR	Buchanan	At the request of the Office of Drinking Water, completed Consumer Confidence Report	25,196
Buchanan County PSA – Osborne Mtn 2019 CCR	Buchanan	At the request of the Office of Drinking Water, completed Consumer Confidence Report	70
Buchanan County PSA - Page 2019 CCR	Buchanan	At the request of the Office of Drinking Water, completed Consumer Confidence Report	50
Buchanan County PSA – Short Gap 2019 CCR	Buchanan	At the request of the Office of Drinking Water, completed Consumer Confidence Report	64

Appendix D

EPA Grant Projects
Southeast Rural Community Assistance Project (SERCAP)

Castlewood 2019 CCR	Wise	At the request of the Office of Drinking Water, completed Consumer Confidence Report	5,565
Cedar Bluff 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	1,400
Cleveland 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	340
Clintwood 2019 CCR	Dickenson	At the request of the Office of Drinking Water, completed Consumer Confidence Report	7,721
Coeburn 2019 CCR	Wise	At the request of the Office of Drinking Water, completed Consumer Confidence Report	4,630
Dickensonville Rest Home 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	46
Dungannon 2019 CCR	Scott	At the request of the Office of Drinking Water, completed Consumer Confidence Report	410
Emporia, VA	Emporia	ERP	5,600
Gate City 2019 CCR	Scott	At the request of the Office of Drinking Water, completed Consumer Confidence Report	3,130
Highland County Regional Water System*	Highland	Exploring the feasibility creating a Regional Water Authority in Highland County	650
Hobson Community*	City of Suffolk	Assist former members of Hobson Artesian Well Association to Connect to City of Suffolk Water System. Dissolution of Significantly Non-Compliant System	70
Honaker 2019 CCR	Russell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	1,449
Monterey Capacity Development	Highland	Conducted Sustainable Utility Management Board Training for Town Council	450
Montvale Water 2019 CCR	Bedford	At the request of the Office of Drinking Water, completed Consumer Confidence Report	698
Newton MHP*	Mecklenburg	Procure Funding to Address Compliance Issues	150
Norton 2019 CCR	Wise	At the request of the Office of Drinking Water, completed Consumer Confidence Report	3,958

Appendix D

EPA Grant Projects
Southeast Rural Community Assistance Project (SERCAP)

Pamplin City SOPs	Appomattox	Create SOP for Water & Wastewater Operations	79
Port Royal Water Rate Study	Caroline	Completed Water Rate Study; Town adopted new water rate structure moving from flat rates to usage-based structure. Assisted with the adoption of new water ordinances	194
Pound 2019 CCR	Wise	At the request of the Office of Drinking Water, completed Consumer Confidence Report	2,195
Sunray Artesian Leak Detection	Chesapeake	Performed Leak Detection and located 2 active water leaks in the distribution system	45
Tangier Capacity Development	Accomack	Assist the Town of Tangier with funding application and onsite technical assistance to address capacity development issues including metered usage, completion of WBOP and rehabilitation of water supply well vaults.	524
Tazewell County PSA – Greater Tazewell 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	12,575
Tazewell, Town of 2019 CCR	Tazewell	At the request of the Office of Drinking Water, completed Consumer Confidence Report	11,604
Urbanna Vulnerability Assessment and Emergency Response Plan	Middlesex	Assisted with the completion of VA & ERP for the Town of Urbanna	474
Virgilina Water System Upgrades	Halifax	Assisted the Town locate funding to provide critical well and well control system upgrades	104
Windsor 2019 CCR	Isle of Wight	At the request of the Office of Drinking Water, completed Consumer Confidence Report	2,626

* See additional project information below

Hardy Road Trailer Park, Bedford County
During a June 2017 sanitary survey of the Hardy Road Trailer Park (population 200, 72 service connections) in Bedford County, ODW staff identified three significant deficiencies under the Groundwater Rule. They were:

1. Atmospheric Tank is not watertight according to the requirements of §12VAC5-590-380C.3 of the Waterworks Regulations

2. Critical Booster Pump Equipment is unreliable which allows the distribution pressure to fall below 20 psi at the service connections, as required by §12VAC5-590-510E of the Waterworks Regulations
3. Failure to have active Cross-Connection Control Program as required by §12VAC5-590-580 of the Waterworks Regulations

A Corrective Action Plan to address the deficiencies was developed and signed in September of 2017. By the end of the year no actions had been taken and as a result, the system was issued three Notices of Violation (NOV) for Failure to Address Significant Deficiencies. By Mid-2019, the system had still not addressed the issues and ODW asked SERCAP to provide assistance. ODW worked with SERCAP to understand the issues at the waterworks and made a follow-up referral to the Small Project Engineering program administered through the Capacity Development program. ODW had awarded the services once previously, but the owners at Hardy Road did not cooperate with the provided engineer and ODW withdrew the offer. In addition to helping facilitate that project, SERCAP completed and submitted for review a draft Cross-Connection Control Program for the system. Consolidation negotiations with both the Bedford Regional Water Authority and the nearby Town of Vinton in Roanoke County were unsuccessful. SERCAP also assisted Hardy Road Trailer Park with the submission of a WIIN grant application for funds to address Significant Deficiencies.

Highland Regional Water Authority, Highland County

What began as a request from USDA Rural Development to assist the small community of Blue Grass to develop a community well has grown into a preliminary discussion about the formation of a Regional Water Authority serving upper Highland County. The community of Blue Grass is home to approximately nine residential connections. This community and lacks the capacity to properly sustain the operation of a community well. The community needed a new well. SERCAP began discussions with multiple partners to begin addressing the problem. They spoke with Virginia's Department of Housing and Community Development (DHCD) regarding a Community Development Block Grant (CDBG). They also approached Highland County Administrator Roberta Lambert regarding the county's willingness to apply for the CDBG on behalf of Blue Grass and the Town of Monterey (the CWS nearest to Blue Grass, approximately 9 miles south) to ascertain the Town's interest and/or willingness to be the contract operator for the Blue Grass community well and associated distribution system. Highland County is also the owner of the McDowell CWS (Pop. 115; 9.5 miles ESE of Monterey). Discussions have progressed and the parties involved have expressed interest in forming a single entity to serve all three communities. This effort is in its infancy but shows good potential.

Hobson Community (formerly Hobson Artesian Well Association), Suffolk County

For years, the residents of Hobson's Upper Village have suffered from a lack of a safe, consistent water supply. In addition to fluoride levels that exceeded the Safe Drinking Water Act's (SDWA) Primary Drinking Water Standard of 4.0 mg/L, the small water system was consistently out of compliance with Virginia Department of Health (VDH) water quality sampling requirements. The

waterworks was a significant non-complier with EPA. Disruption of service was so frequent that the residents had to keep cases of bottled water on hand for cooking and consumption. They often had to travel to the nearest Walmart in order to use the restroom.

In an effort to improve the quality of life for the residents of the Upper Village, the nearby City of Suffolk offered to install water lines such that the community's residents would be able to hook onto and enjoy the benefits of City water. In 2013 and again in 2015, the City began the process of petitioning eligible residents regarding their interest in connecting to public water. Whether because of unwillingness to place control of their water supply into hands not their own, an inability to pay the required fees to connect or simply out of fear of reprisals from the current owner, fewer than 51% of the residents returned the required responses.

In 2017, some of the residents had an opportunity, with SERCAP's help, to purchase some property upon which there was a well. They desired to use the well and explore the possibility of forming a new water system. SERCAP held a number of informational meetings to discuss and outline the process and led the residents through the process of calculating the monthly water rates necessary for the utility to be self-sustaining. It quickly became evident that, if the cost for the predominantly low-income residents of Hobson to actually connect to City water could somehow be dealt with, the monthly fees for City water would be much less expensive than those associated with operating their own water system.

As part of Suffolk's comprehensive plan, construction and installation of 2,770 feet of 8" water main in the Hobson Community began in January of 2018. City policy required that after construction was completed, there would be a mandatory connection for residents on two of the three impacted streets. Although the City was offering a reduced rate for them to do so, almost none of the residents could afford the required fees.

SERCAP decided, due to both the extreme need and the long history of SERCAP's efforts to assist the Hobson community, to award $125,000.00 in grant funds - the largest single grant allocation in SERCAP's history - to assist the residents of Hobson's Upper Village. These funds would be used to pay for connection and availability fees ($3,370.00 per household) for all of the Village's residents connecting to the City, in addition to the installation of service lines to physically connect the homes to public water (average of $1,000.00 per home).

In the fall of 2018 during the process to secure a contractor to perform the service line installations, it became apparent that the cost for the service line work would be significantly higher than originally planned. As a result, SERCAP committed an additional $42,000.00 toward service line installations, bringing that total to $70,000.00 and the overall commitment to the project to $165,000.00. SERCAP signed the contract for service line installations on January 25, 2019. SERCAP obtained the required property access forms during several community meetings held over six months. Work began the last full week of August 2019. Over the course of the next month, the contractors connected 19 homes, a church, and a community center to public water service with the City of Suffolk, Virginia. The city did not require five families to connect to public water and each of those families chose to remain with the Hobson Artesian Well Association

(HAWA). On October 4, 2019, a representative of the VDH-ODW met with representatives of the community, SERCAP and the City of Suffolk. During this meeting the parties involved certified that the number of connections still served by the HAWA was below the regulatory definition of a community waterworks ("…a system that serves piped water for human consumption to at least 15 connections or 25 or more individuals for at least 60 days out of the year"). Upon certification, the VDH-ODW made the HAWA system "inactive," removing its designation as a community water system and its obligation to comply with state and federal waterworks regulations.

Although the five families still served by the HAWA were aware of the system's poor water quality and operational issues and had the same opportunity to connect to City water as the rest of the community, they all chose to remain on the HAWA well. Regarding the rest of the community, however, there have been successes upon successes. The families that were once plagued by poor water quality and an unreliable water supply now enjoy improved health, peace of mind and quality of life as water customers of the City of Suffolk. In October of 2019, ODW inactivated the Hobson waterworks, ending years of poor water service of inadequate quality for the affected homeowners. The system came off the EPA's Enforcement Targeting Tool (ETT) list of significant non-compliant water systems in Virginia.

Newton Mobile Home Park (now called Buffalo Creek Estates)*, *Mecklenburg County
Newton Mobile Home Park is a small community waterworks in Mecklenburg County. The system serves 92 residences that are home to approximately 250 people, most of whose incomes are well below the median household income for Mecklenburg County. Prior owners installed the infrastructure for the waterworks before 1979. It is badly in need of maintenance to extend its useful life and meet regulatory requirements. Due to source water and distribution capacity issues, residents routinely experience low - or even no - water pressure, particularly during periods of peak demand. Specifically, the system has minimal hydro-pneumatic storage and insufficient source water; additional storage and source water are required to maintain adequate system pressure and to meet customer demand.

The ODW field office referred the waterworks for engineering assistance through the Small Project Engineering program administered by the Capacity Development program. A contract engineer designed plans to address all of the capacity issues affecting the system: upgrade of an existing, unused well; conversion of the 5,000-gallon hydro-pneumatic tank to an atmospheric tank to provide adequate storage; installation of two water booster pumps to maintain system pressure and other miscellaneous improvements, all of which will bring this waterworks into compliance.

The cost to make the necessary improvements is approximately $40,000.00, and is beyond the system owners' ability to pay. SERCAP was able to secure a grant to provide the funding necessary to carry out system upgrades that will provide residents with a reliable water supply and bring the system into compliance. ODW is reviewing final designs. Construction will begin in early 2021.

Town of Phenix, Charlotte County

Appendix D

EPA Grant Projects

Southeast Rural Community Assistance Project (SERCAP)

The Town of Phenix in Charlotte County recently experienced high levels of radiological contaminants in its existing wells and is seeking funding from the state SRF program to develop a new well. There have been a number of outstanding capacity development issues preventing the Town from receiving the funding and moving forward with the project, chief of which has been the development of a Waterworks Business Operations Plan (WBOP). Implementation of the WBOP will improve the Technical, Managerial and Financial (TMF) capacity of the waterworks and enable it to function in a sustainable manner. In addition to providing guidance throughout the well development process, SERCAP has been instrumental in assisting the Town with the completion of the WBOP.

Appendix D

EPA Grant Projects
Virginia Rural Water Association

Training provided through "EPA Training & Technical Assistance for Small Public Water Systems"

Virginia Rural Water Association Training October 1, 2019, through September 30, 2020			
Date	**Course Name**	**Course Location**	**Attendees**
12/17/2019	ABC Water & WW Exam Prep	Warrenton	13
5/28/2020	American Water Infrastructure Act (AWIA) Review	Webinar-virtual	20
6/11/2020		Webinar-virtual	7
6/25/2020		Webinar-virtual	11
6/10/2020	AMI Advance Metering Infrastructure	Webinar-virtual	12
5/6/2020	Asset Management & Emergency Preparedness-Webinar	Webinar-virtual	30
7/15/2020	Communicating Water Quality Concerns to the Press and the Public	Webinar-virtual	10
9/24/2020	Discussion on a Variety of Distribution Valves	Webinar-virtual	14
7/8/2020	Handling Wastewater Crisis Communications in the Instant Information Age	Webinar-virtual	3
2/12/2020	Hands-on BNR Control for WWTP	Capron	11
9/23/2020	How to Conduct and Certify Your Risk and Resilience Assessment	Webinar-virtual	28
6/2/2020	Hydrant and Valve O&M Webinar	Webinar-virtual	20
6/3/2020		Webinar-virtual	12
7/22/2020	Making the Big Ask: How to Use Today's Media Landscape to Gain Funding Support	Webinar-virtual	4
11/13/2019	Management of Water & WW Facilities in the Real World	Wise	11
5/28/2020	Metering Asset Management	Webinar-virtual	13
8/18/2020	Modifiable Build on Site Vault/Chamber	Webinar-virtual	11
11/7/2019	Overview of Critical Parameters	Luray	15
10/1/2019	Pump Operating & Maintenance	Pound	22
10/2/2019		Pound	23
9/10/2020	R&R - CIP	Webinar-virtual	5
8/26/2020	Ready, Set, Pump	Webinar-virtual	13
9/23/2020		Webinar-virtual	7
4/29/2020	Reducing THM's Across Your Water System	Webinar-virtual	6
5/12/2020	Selecting & Upgrading a Successful SCADA System-Webinar	Webinar-virtual	27
9/15/2020	Selecting and Specifying Meter Boxes	Webinar-virtual	3
4/16/2020	Spray in Place Pipe Rehabilitation	Webinar-virtual	13

Appendix D

EPA Grant Projects

Virginia Rural Water Association

5/21/2020	Sustainable Management of Rural & Small Systems Workshop	Stephens City	5
9/3/2020	Utility Locate/ Trench Safety	Webinar-virtual	14
2/26/2020	Utility Management for Water/WW Operations	Richlands	18
3/12/2020		Abingdon	20
11/12/2019	Utility Management Workshop in a Box	South Hill	24
11/19/2019	Water & Wastewater Exam Prep	Cape Charles	4
11/21/2019		Courtland	4
1/23/2020		Rocky Mount	20
5/26/2020	Water Loss & Line Locating	Webinar-virtual	13
6/9/2020		Webinar-virtual	19
2/4/2020	Water Security & Safety	Duffield	6
6/25/2020	Water Tank Operation and Maintenance	Bridgewater	10
2/4/2020	Water/WW Certification Study Session	Honaker	6
2/19/2020	Workshop in a Box-Sustainability	Tappahannock	25
6/16/2020		Lee Co.	8

Appendix D

EPA Grant Projects
Environmental Finance Center Network

For the period of October 1, 2019 through September 30, 2020, the Environmental Finance Center Network provided the following services to small systems in Virginia:

- Small Group Workshop: Financial Planning for Small Water Systems on 10/24/19 in Franklin, VA. Twelve people attended.
- Small Group Workshop: Financial Planning for Small Water Systems on 10/22/19 in Danville, VA. Ten people attended.
- In-depth technical assistance provided to Port Royal, Monterey, and Hillsville, VA.
- 21 national webinars on water system finance and management topics

A variety of blog posts on financial and managerial topics, which are available at:
https://efc.sog.unc.edu/resource/virginia-water-and-wastewater-rates-dashboard-0

The 2019 Water and Wastewater Rates Dashboard was deployed on February 28, 2020 and can be accessed here:
https://efc.sog.unc.edu/resource/virginia-water-and-wastewater-rates-dashboard-0

Appendix D

EPA Grant Projects
Virginia Section American Waterworks Association

The Virginia Section of the American Water Works Association has conducted training throughout Virginia this year (see table below) between October 1, 2019 to September 30, 2020. Due to the COVID pandemic, VA-AWWA postponed and/or canceled many training classes during this reporting period.

Event: 41st Annual Customer Service Workshop	**Event**: Optimizing Performance & Accessing Funding to Improve Small Systems (USDA Grant)
Date: October 16 – 18, 2019	**Date**: November 13, 2019
Location: Virginia Beach, VA	**Location**: Culpeper, VA
Registered Attendees: 85	**Registered Attendees**: 34
Event: 2019 Fall Distribution Systems Seminar	**Event**: Hidden Hazards: Things You May Not Be Able to See Can Still Hurt You
Date: October 23, 2019	**Date**: November 14, 2019
Location: Henrico, VA	**Location**: Woodbridge, VA
Registered Attendees: 38	**Registered Attendees: 34**
Event: 2019 Fall Plant Operations Seminar (formerly Senior Ops Forum)	**Event**: Leadership Academy – Emotional Intelligence
Date: October 29, 2018	**Date:** January 30, 2020
Location: Lynchburg, VA	**Location:** Henrico, VA
Registered Attendees: 31	**Registered Attendees: 30**
Event: Cross Connection Control Training (16-hour course)	**Event**: Webinar: Get the Lead Out
Date: October 30 – November 1, 2019	**Date**: February 13, 2020
Location: Salem, VA	**Location**: Webinar
Registered Attendees: 17	**Registered Attendees**: 94 attendees plus 14 groups (number of viewers unknown)
Event: Webinar: Innovations in the Water Industry	**Event**: Summer Camp: The Wonders of Water Webinar
Date: November 12, 2019	**Date**: June 18, 2020
Location: Webinar	**Location**: Webinar
Registered Attendees: 50 attendees plus 4 groups (number of viewers unknown)	**Registered Attendees**: 20 attendees, 21 views of recording
Event: Leadership Academy – Ethics Discussions with Large Utility Leaders	**Event:** Virtual WaterJAM 2020
Date: July 29, 2020	**Date:** September 13 – October 2, 2020
Location: Webinar	**Location:** Online
Registered Attendees: 30	**Registered Attendees:** 728
Event: COVID-19/WARN Weekly Webinar	**Sessions:** 190
Date: weekly (see dates and attendees below)	**Workshops: 5**
Location: Webinar	**Continuing Education Hour Credits issued:** 4,677.5
Registered Attendees:	
• April 1, 2020 – 233 attendees, 466 views of recording	**Event:** Leadership Academy – Ethics Discussions with Small Utility Leaders
• April 8, 2020 – 139 attendees, 98 views of recording	**Date:** September 30, 2020
• April 15, 2020 – 163 attendees, 117 views of recording	**Location:** Webinar
• April 22, 2020 – 150 attendees, 67 views of recording	**Registered Attendees**: 30
• April 29, 2020 – 170 attendees, 66 views of recording	
• May 6, 2020 – 167 attendees, 53 views of recording	**Event**: Drinking Water Quality and Research Webinar Series
• May 13, 2020 – 184 attendees, 50 views of recording	**Date**: weekly (see dates and attendees below)
• May 20, 2020 – 162 attendees, 30 views of recording	**Location**: Webinar
• June 3, 2020 – 134 attendees, 71 views of recording	**Registered Attendees:**
• June 17, 2020 – 120 attendees, 42 views of recording	• July 7, 2020 – 60 attendees, 13 views of recording
• July 1, 2020 – 109 attendees	• July 14, 2020 – 49 attendees, 5 views of recording
	• July 21, 2020 – 52 attendees, 6 views of recording
	• July 28, 2020 – 46 attendees, 5 views of recording

Appendix E

2020 Triennial Capacity Assessment Questions

Technical	Is the waterworks score on the 2019 ETT ≤ 10?	Does the waterworks have sufficient operator coverage for sick leave and vacation?	Has the waterworks either not received significant deficiencies, or completed timely correction of all significant deficiencies?	Did the waterworks address recommendations from recent sanitary surveys?	Does the waterworks have a written policy for responding to customer complaints?	Are all plans and reports up to date and implemented (e.g. BSSP, LCR Plan, CCCP, CCR, WBOP, Sampling, etc.)?
Managerial	Did the waterworks consistently operate within 80% of its permitted capacity in the last 3 years?	Does the system meet Waterworks Regulations design and construction standards?	Are the waterworks facilities and appurtenances in good operating condition?	Are all service connections metered and is there a water accountability program in place?	Does the waterworks meet all established National Primary Drinking Water Standards?	Have all operators attended a technical training seminar or conference each year covered by this survey?
Financial	Did the waterworks pay the technical assistance fee?	Does the waterworks have at least 45 days cash on-hand to cover expenses?	Is the waterworks budget independent from subsidization by general funds, sewer funds or other funding sources?	Does the waterworks have a written Capital Improvement Plan?	Have the waterworks' rates been adjusted in the past three years?	Does the waterworks have an Asset Management Plan?