



# 2023 REPORT TO THE GOVERNOR

**West Virginia Public Water System Capacity Development Program**

**September 30, 2023**



west virginia department of environmental protection

Division of Water and Waste Management  
601 57th Street, SE  
Charleston, WV 25304

**2023**  
**REPORT TO THE GOVERNOR**  
**West Virginia Public Water System Capacity Development Program**  
**September 30, 2023**

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# 2023

# REPORT TO THE GOVERNOR

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### September 30, 2023

West Virginia Department of Environmental Protection

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This report is a requirement from Section 1420(c)(3) of the Safe Drinking Water Act (SDWA), which requires the State Capacity Development Program to submit to the Governor by September 30, 2023. The Report to the Governor shall be made available to the public on the efficacy of the Capacity Development Strategy and progress made toward improving the technical, managerial, and financial capacity of public water systems in the State.

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## EXECUTIVE SUMMARY

The 2023 Report to the Governor on the West Virginia Public Water System Capacity Development Program (CDP) summarizes activities completed, currently underway, and planned by the West Virginia Department of Health and Human Resources (DHHR), Bureau for Public Health (BPH), Office of Environmental Health Services (OEHS) and the West Virginia Department of Environmental Protection (DEP). With the passage of HB 561 during the 2023 legislative session, the CDP was moved to the WV DEP. The West Virginia Public Water System CDP supports public water systems in making improvements to their technical operations (including infrastructure), finances, and management so they can consistently provide drinking water that meets federal and state standards as effectively and efficiently as possible. In addition, this report fulfills the State's obligation under Section 1420(c)(3) of the Federal Safe Drinking Water Act to report the status of the program to the Governor within two years of the program's inception and every three years thereafter, by September 30. Specifically, the report informs the Governor's Office of the program's value and progress made by improving the technical, managerial, and financial (TMF) capabilities of the State's public water systems.

### **Capacity Development Program Implementation**

The foundation of the CDP is the Capacity Development Assessment (CDA). A CDA is a detailed evaluation of a water system's TMF capability. Since the program's inception in 2000, the CDP staff has conducted 345 detailed evaluations at 257 different water systems. Two hundred forty-three of the systems remain in operation. The evaluation effectively confirms adequate capacity of viable systems or identifies the TMF developmental needs of marginal or failing water systems.

Following a water system evaluation, staff offers direct assistance by helping the water system with tools and resources needed to implement the CDP recommendations. This assistance, to those that are receptive, has been effective at improving the system's TMF operations. In addition to assistance from CDP staff, water systems are routinely referred to outside partner agencies/organizations for their expertise.

Recently, staff completed an important program component, an update to the baseline ranking of the State's public water systems. The statewide baseline process identifies water systems' viability status (i.e., viable, marginal or failing) and those needing assistance to improve their TMF capability. In addition, it provides an evaluation for the CDP overall and its ongoing effectiveness.

### **Baseline Ranking Analysis**

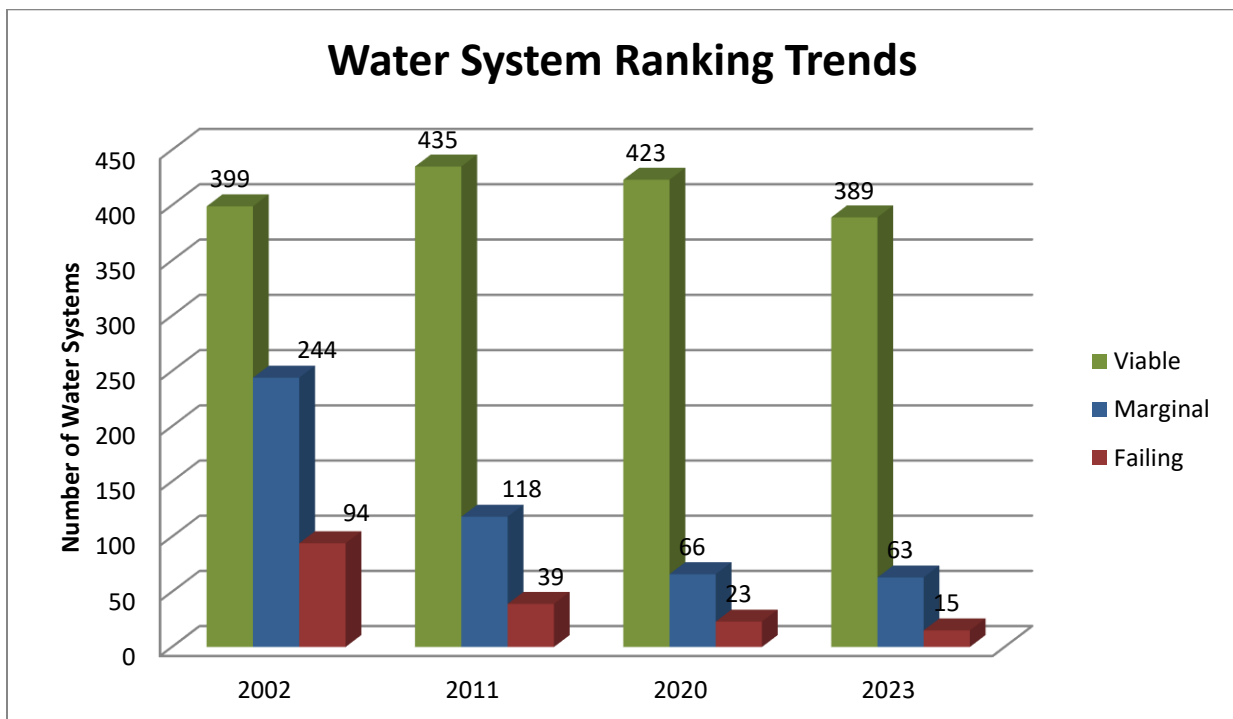
The 2023 baseline ranking data shows 389 (83%) of the 469 community water systems (CWS) and non-transient non-community (NTNC) water systems in West Virginia are viable systems with adequate TMF capacity; 65 (14%) are marginal systems and 15 (3%) are failing systems. (Note: The definition of a CWS and NTNC water system can be found in Appendix B.) Of the population served by CWS and NTNC systems, 1.55 million (96%) people are served by viable systems while failing and marginal systems serve 66,067 (4%) of the population.

Specifically, the 2023 data shows a continuing trend in which populations are shifting to larger, more viable water systems, while populations served by smaller systems that are often marginal or failing, are decreasing. As a result of this trend, there has been an elimination of more than 160 of the smallest water systems (many of which were failing systems) since 2002. This drop in the number of failing and marginal systems can be attributed to systems merging, systems being taken over by larger, more viable systems, systems ceasing operation, and systems that, with the help of the CDP, have become more viable over time.

The 2023 baseline data shows that for systems which have more than 1,000 customers, there is one failing system and 13 marginal systems. West Virginia’s failing and marginal systems pose a constant threat of disruption to their customers’ drinking water supply. Such interruptions threaten the customers’ health and welfare and are an impediment to economic development in areas served by these systems.

While West Virginia has 80 water systems that are marginal or failing, the 2023 baseline data shows that CDP has resulted in steady improvements in water systems’ capacities. Since 2002, although the number of viable systems has decreased from 399 to 389 the number of failing systems is down from 94 to 15 and the number of marginal systems is down from 244 to 65 as shown in Figure 1.

**Figure 1: Water System Ranking Trends in West Virginia**



Over the years, the assistance program has identified the following:

In order for water systems to maintain viability, they must have an adequate customer base as well as effective, proactive management.

For more than 20 years, the CDP staff has been supporting receptive water systems in making advancements by using a proactive, hands-on approach. Water systems are not mandated to utilize assistance from CDP and consequently do so on a voluntary basis.

## **2023 REPORT TO THE GOVERNOR WEST VIRGINIA PUBLIC WATER SYSTEM CAPACITY DEVELOPMENT PROGRAM**

### **Capacity Development Program (CDP) Overview**

Prior to July 1, 2023, the CDP was part of the West Virginia Department of Health and Human Resources, BPH, OEHS, Environmental Engineering Division, Infrastructure and Capacity Development Unit. With the passage of HB 561 during the 2023 legislative session, the CDP was moved to the WV DEP.

In West Virginia, more than 1.55 million people (85% of West Virginia's 1.8 million population) are served by community water systems (CWS) and non-transient non-community (NTNC) water systems. The remaining 250,000 people are served by individual water systems (i.e., well, cistern or spring). The CDP supports the CWS and NTNC public water systems in improving their technical operations (including infrastructure), finances, and management in order to consistently provide drinking water that meets or exceeds federal and state standards as effectively and efficiently as possible.

CDP staff work with the State's CWS and NTNC water systems, helping ensure they acquire and maintain the technical, managerial, and financial (TMF) abilities and resources necessary to meet the requirements of the public drinking water statutes and regulations. CDP staff routinely conducts the following activities:

- Develop and maintain a priority ranking of all water systems (baseline);
- Ensure sustainable infrastructure at all new water systems through monitoring for compliance and adequate TMF capability.
- Ensure Drinking Water Treatment Revolving Fund (DWTRF) loan recipients have adequate TMF capability.
- Assess the present capabilities of existing water systems; and
- Assist existing water systems in achieving and maintaining adequate TMF capability.

### **CDP Report to the Governor**

The 2023 Report to the Governor on the West Virginia Public Water System Capacity Development Program summarizes the effectiveness of activities completed, currently underway, and planned by CDP. The report also fulfills the State's obligation under

Section 1420(c)(3) of the Federal Safe Drinking Water Act that requires the CDP lead agency to report its program status to the Governor within two years of the program's inception and every three years thereafter. Specifically, the report appraises the Governor's Office of the program's value and progress made by improving the TMF capabilities of the State's water systems. OEHS's Infrastructure and Capacity Development work, which is grant funded by the U.S. Environmental Protection Agency (EPA), encompasses the following programs:

- Water system TMF assessments and assistance.
- Water system sanitary surveys (e.g., periodic site visits to evaluate SDWA compliance).
- Technical assistance grant to an independent, non-profit contractor to provide small public water system assistance, primarily teaching water treatment operators continuing education to maintain their licenses.
- Public water system loan DWTRF monies to help water systems meet public health and regulatory compliance standards; and
- West Virginia DWTRF program administration.

## **Capacity Development Program Implementation**

### **Baseline Ranking of Water Systems**

Section 1420(c)(2)(D) of the Federal Safe Drinking Water Act requires all states to develop a baseline ranking of their water systems. The initial baseline conducted in 2002 ranked West Virginia's 737 CWS and NTNC water systems. Compiling the initial 2002 baseline and the updates of 2005, 2008, 2011, 2014, 2017, 2020 and 2023 involved gathering information via a voluntary questionnaire sent to the CWS and NTNC systems in addition to obtaining input from the OEHS Environmental Engineering Division District Engineers (district offices are located in Beckley, Kearneysville, Fairmont, St. Albans, and Wheeling).

The systems are ranked (0% – 100%) and categorized as viable, marginal and failing based on responses to the questionnaire. For the data used in the 2023 baseline, West Virginia water systems submitted their questionnaire responses by either mail, fax, email or online using a Google Form.

Not all of the question responses are scored for each system. For example, some questions are informational data for CDP. However, all similar types of systems are scored by their responses to the same questions. Raw scores and data sets (questions/answers) are provided to the district office engineering staff who generally provide onsite technical assistance to the water systems frequently. The district engineers review the information and provide a score for the system. The raw score and the district engineer's score are averaged. Since submitting the questionnaire is voluntary, the district engineers assign a score used for any system not responding to the questionnaire. In 2023, 70% of CWS responded and 68% of NTNC systems responded. For those systems, the average score becomes the final baseline score for each system.



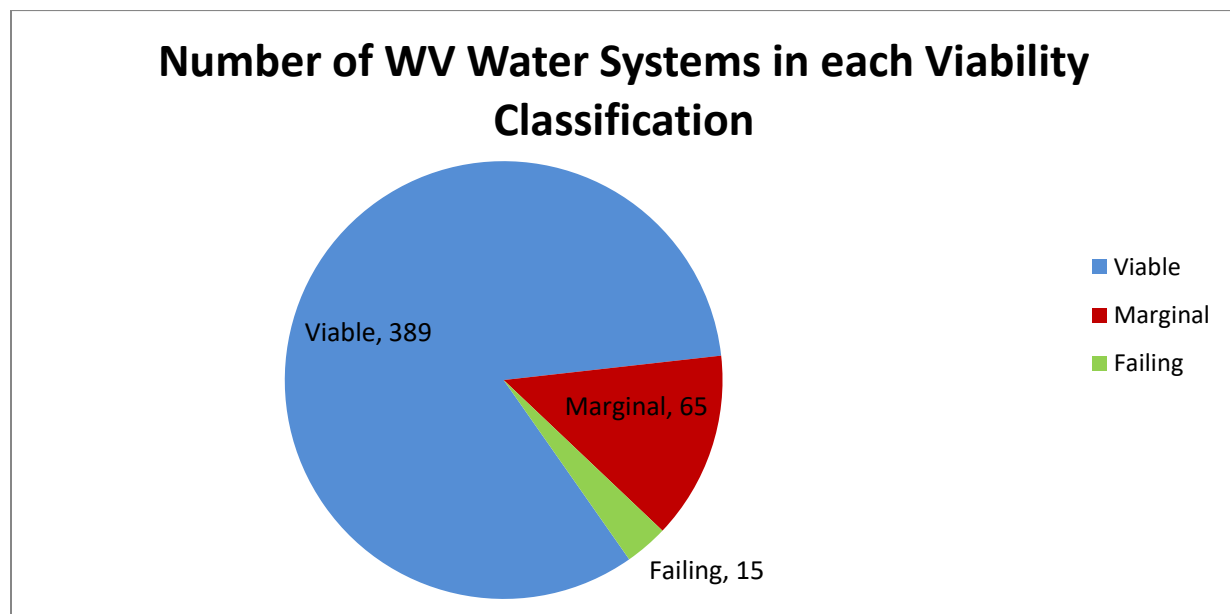
The updated baseline data is being used (in conjunction with other measures) to help evaluate the overall status of West Virginia water systems and the effectiveness of the CDP. Since the 2023 updated baseline scores were compiled in the same manner as previous years, the current score for water systems can be compared with past baselines to measure progress for both the systems and for CDP. The complete 2023 baseline ranking is available on the Capacity Development website at <https://dep.wv.gov/WWE/programs/SRF>. The results of Baseline surveys conducted in 2002-2020 are available at the WV OEHS website at: <http://oehs.wvdhhr.org/eed/infrastructure-capacity-development/water-system-capacity-baseline-assessment/>

A high baseline score indicates a viable water system with adequate TMF capability. Similarly, a low score indicates a failing water system with inadequate TMF capability. Systems whose score was 70% or greater are considered viable; those with a score between 41% and 69% are considered marginal; and those with scores 40% or below are considered failing. The lowest ranking (failing) systems are non-viable and are often under consideration for mergers to get the system to a viable state. The lower marginal systems have a higher priority for the CDP staff to conduct CDAs as these systems need focused assistance efforts to build their viability and are generally receptive to improving their TMF capability.

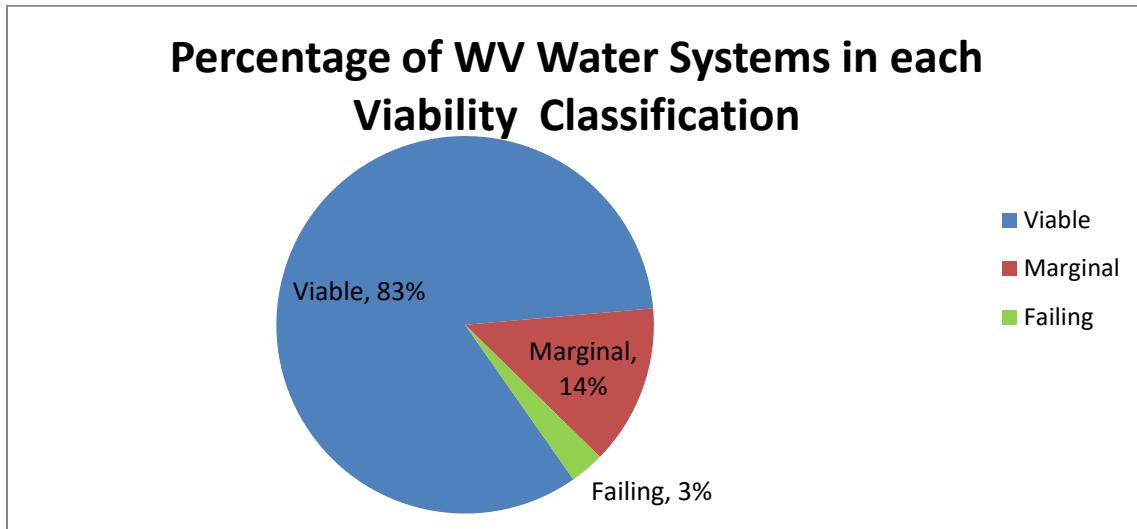
#### Baseline Ranking Analysis

The 2023 baseline ranking data shows 389 (83%) of the 469 community water systems (CWS) and non-transient non-community (NTNC) water systems in West Virginia are viable systems with adequate TMF capacity; 65 (14%) are marginal systems and 15 (3%) are failing systems as shown in Figures 2 and 3.

**Figure 2: Number of West Virginia Water Systems in Each Viability Classification, 2023**

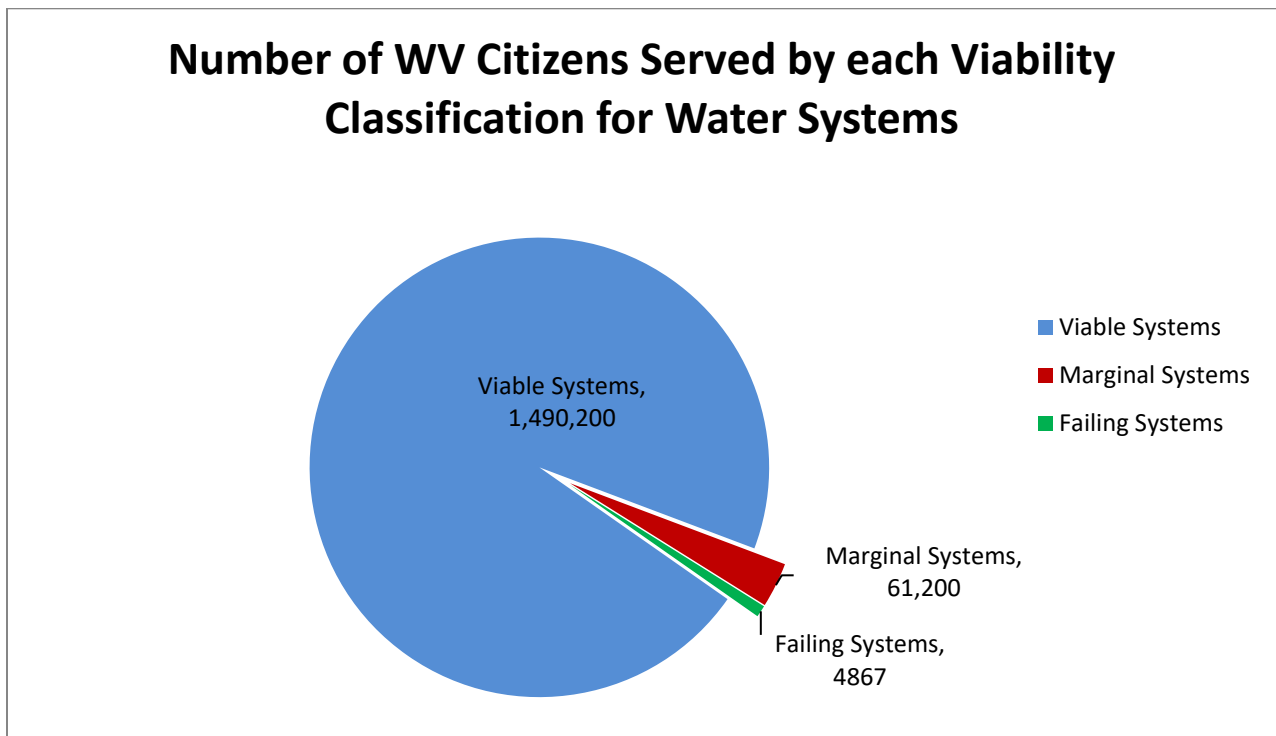


**Figure 3: Percentage of West Virginia Water Systems in Each Viability Classification, 2023**

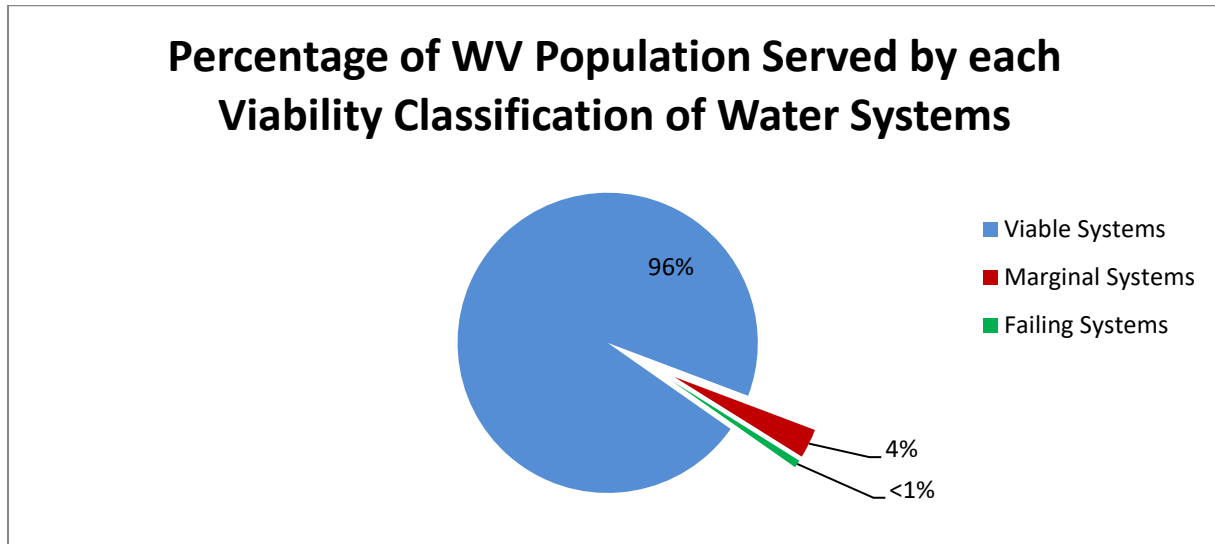


CWS and NTNC systems serve a total of 1.55 million people in the State of WV approximately 1.5 million of those people are served by viable systems while marginal systems serve 61,200 people (4%) and failing systems only serve 4867 people (<1%), as shown in Figures 4 and 5.

**Figure 4: Number of West Virginia Citizens Served by Each Viability Classification for Water Systems, 2023**

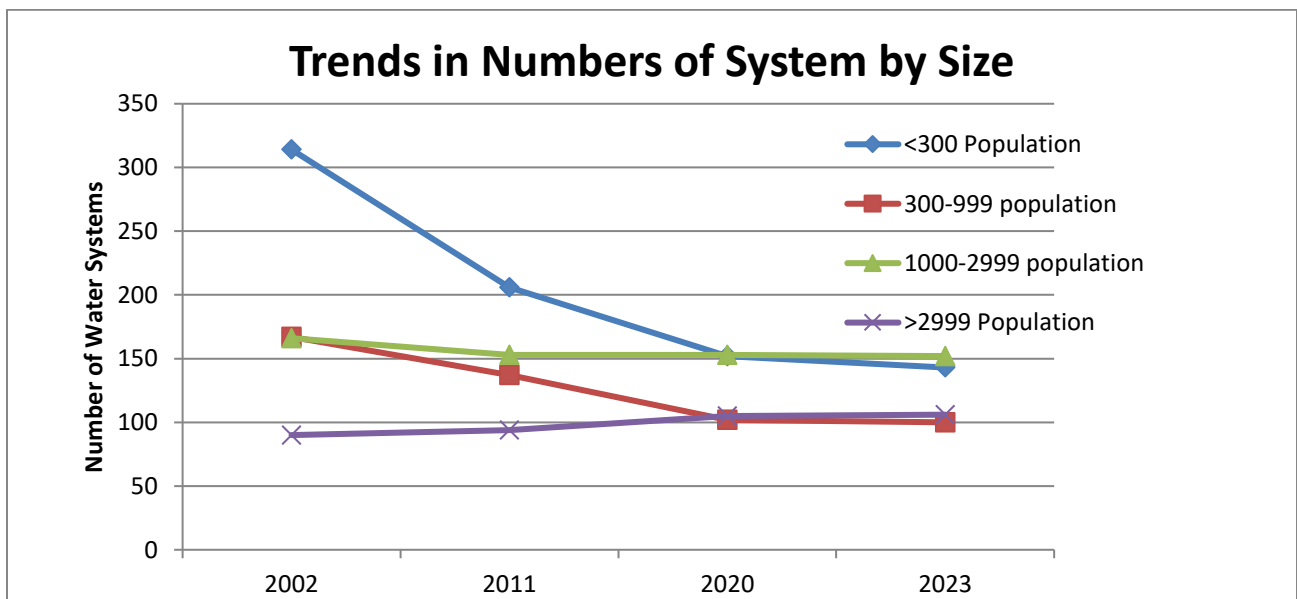


**Figure 5: Percentage of West Virginia Population Served by Each Viability Classification of Water Systems, 2023**

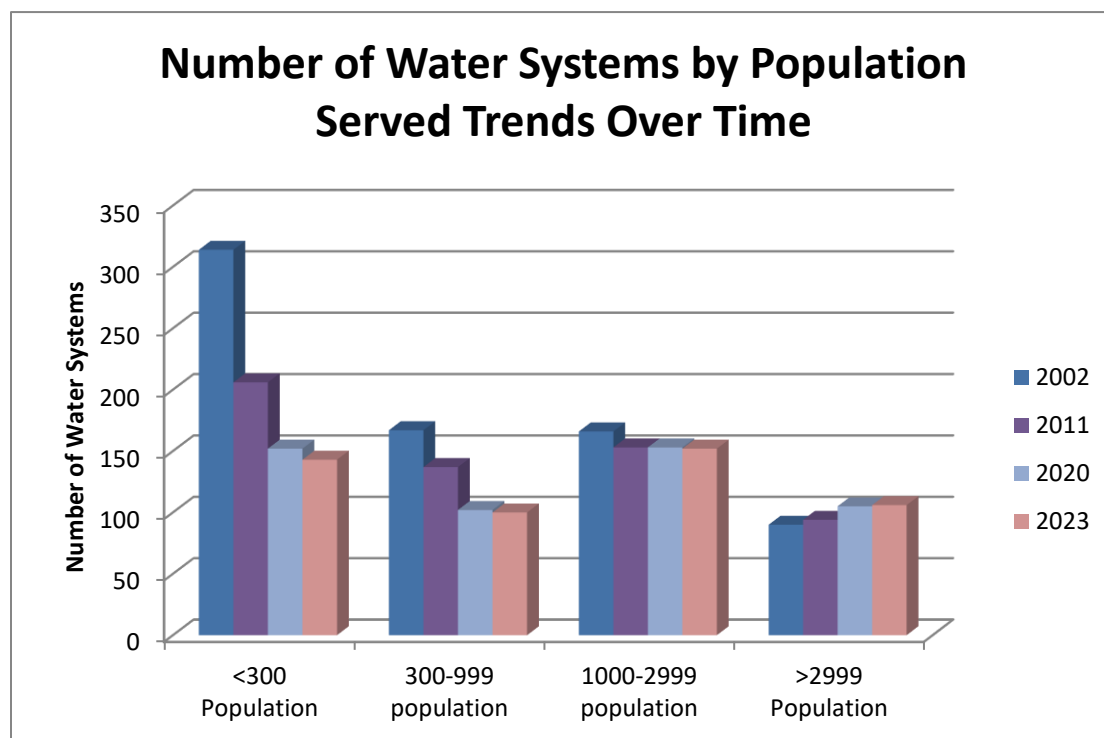


The 2023 data continues to show a trend in which the populations are shifting to larger, more viable water systems, while the population served by smaller systems that are often marginal or failing is decreasing. As a result, there has been a decrease of more than 150 of the smallest water systems (systems serving <300 population) since 2002 as shown in figures 6 and 7.

**Figure 6: Trends in Numbers of West Virginia Water Systems by Population Served**

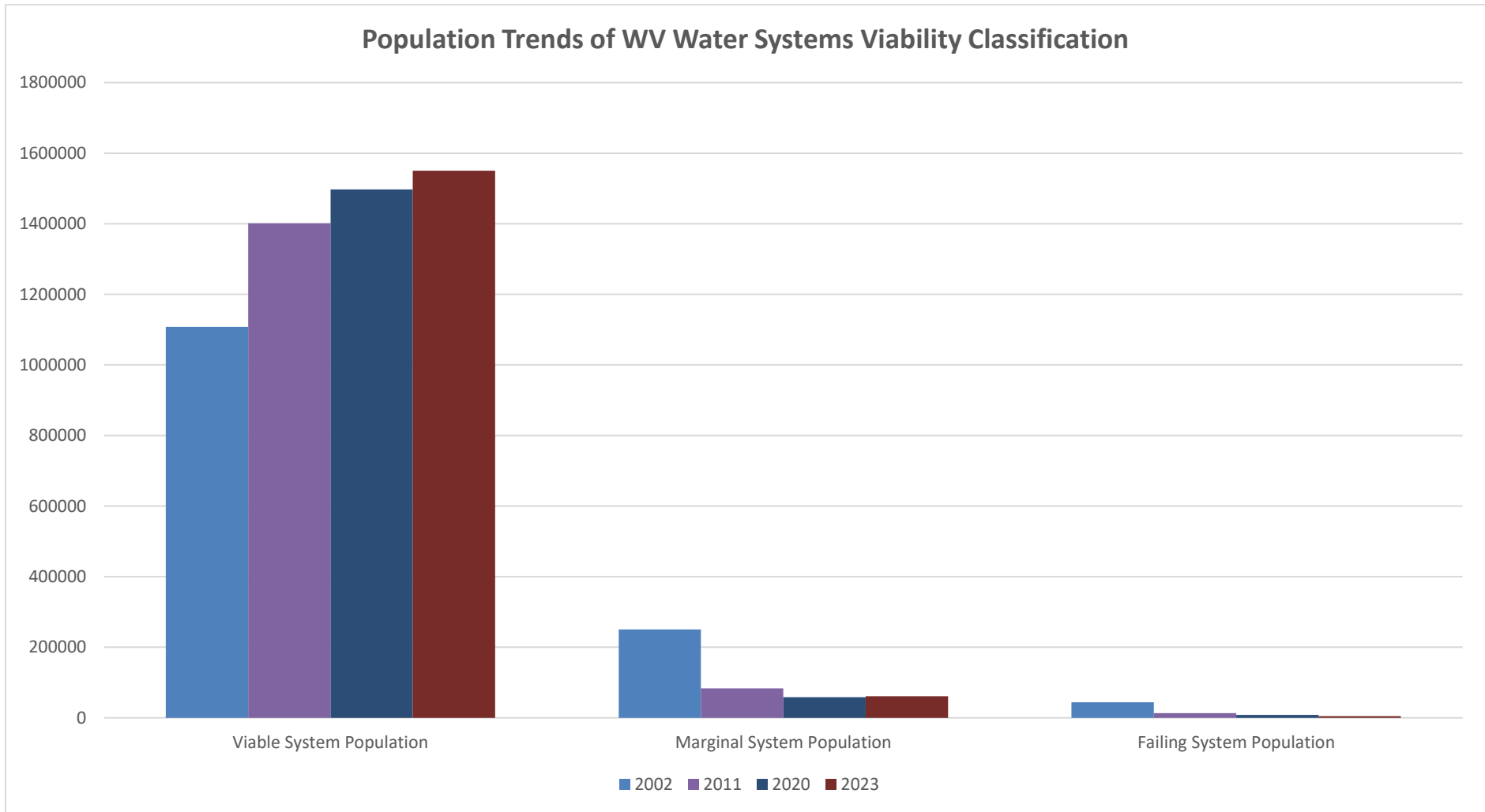


**Figure 7: Number of West Virginia Water Systems by Population Served: Trends Over Time**

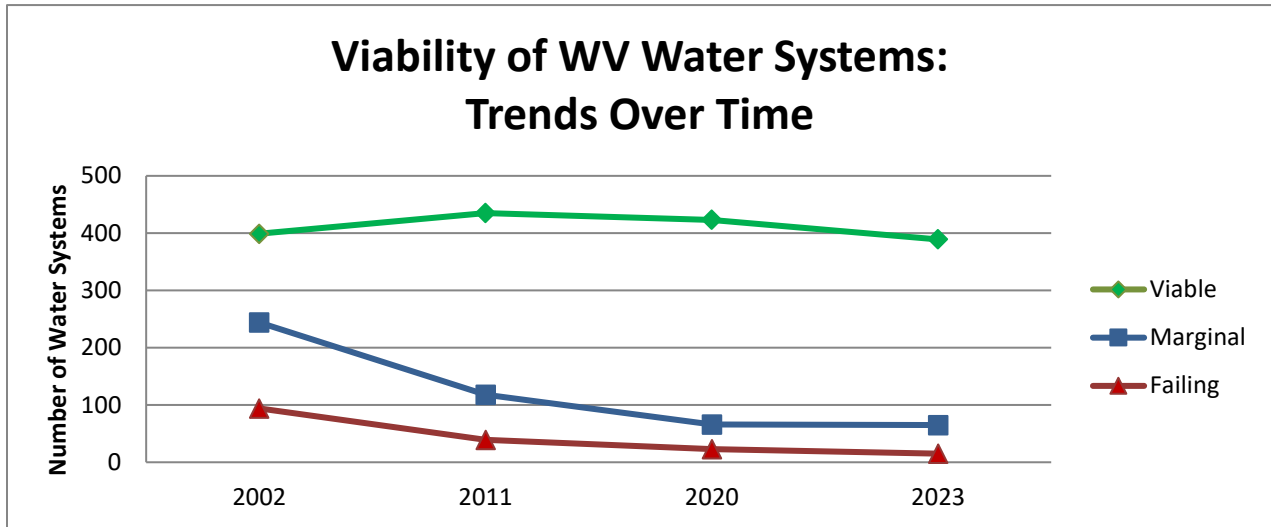


The 2002 data showed viable water systems had 29 times the average customer population of failing systems and more than four times the population of marginal systems. The 2023 data shows viable systems' average population served is more than 122 times that of failing systems and 28 times more than marginal systems. The population shift away from failing systems to viable systems has grown significantly since 2002. While the population is also shifting away from marginal systems to viable systems, the rate is slower. Data related to population and system viability are summarized in Figure 8 and 9.

**Figure 8: Population Trends of West Virginia Water Systems by Viability Classification**

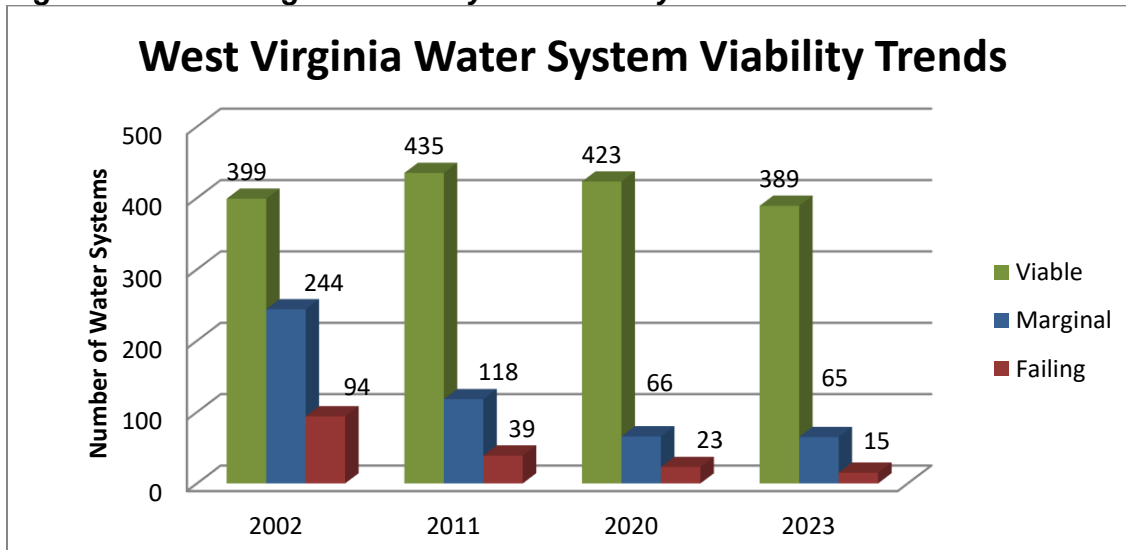


**Figure 9: Viability of West Virginia Water Systems: Trends Over Time**



The failing and marginal systems pose a constant threat of disrupting their customers’ drinking water supply. Such disruptions threaten the customers’ health and welfare and are an impediment to economic development in areas served by these systems. While West Virginia still has 80 marginal or failing water systems, the 2023 baseline data shows steady improvements in water systems’ capacities. Since 2002, the number of viable systems has remained steady from 399 to 389. This number remains steady although the total number of systems has decreased since 2002, indicating an ongoing trend toward system viability since 2002. This trend is also indicated in the change from 2002-2023 in numbers of failing systems from 94 to 15 (-84%) and the number of marginal systems is down from 244 to 60 (-75%), as shown in Figure 10.

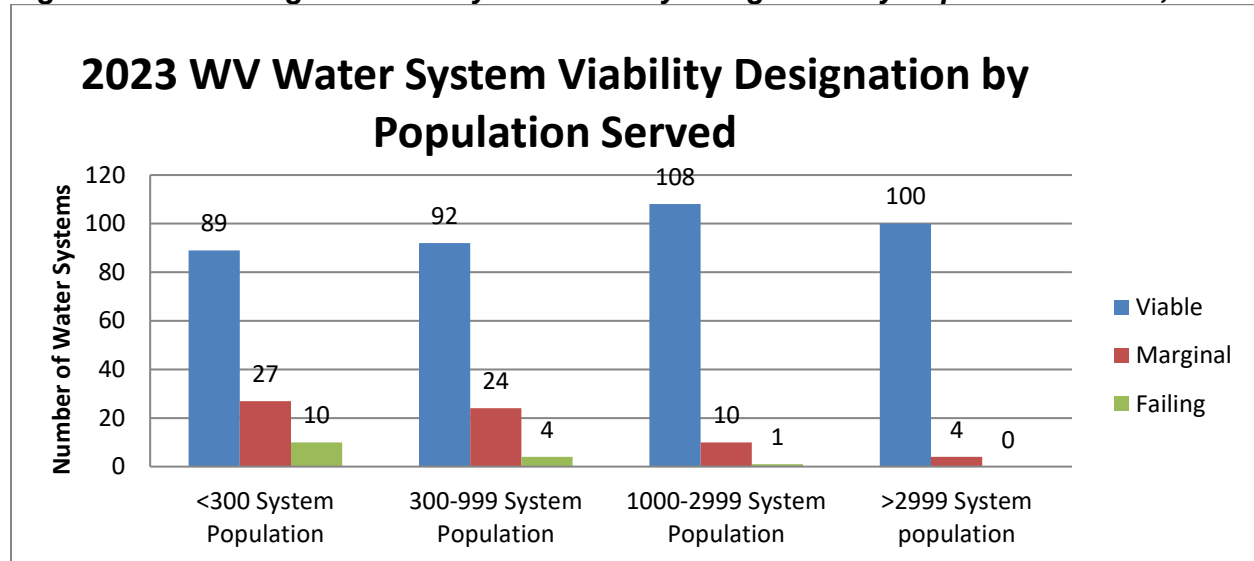
**Figure 10: West Virginia Water System Viability Trends**



This drop in the number of marginal and failing systems can be attributed to systems merging with other systems, failing systems being taken over by more viable systems, systems ceasing operation, and systems becoming more viable over time.

The data in Figure 11 shows there are only 14 marginal systems and 1 failing system which have a population of 1000 or more. This continues to support the conclusions in previous reports in which it was noted that adequate customer base is important in achieving and maintaining water system viability, as shown in Figure 11.

**Figure 11: West Virginia Water System Viability Designation by Population Served, 2023**



The average viability of West Virginia water systems (as seen through the baseline score of 78) from 2020 to 2023 fell by 9 points. Current and previous baseline scores were analyzed to determine the number of systems with significant score changes over time, either improved or declining, in addition to those whose scores show no remarkable change. The scores were then studied to determine:

- Which systems had changed viability classification since 2020.
- Which systems' scores changed by more than 10 points, either up or down, since 2002.
- Which systems' scores did not change by more than 10 points, since 2002.
- Whether or not having had a CDA affected the overall score changes; and
- The overall viability of the systems with/without significant score changes.

The data evaluation of all systems found that since 2023:

- 37 (7.9%) systems raised viability classification by an average of 27 points
- 45 (9.6%) systems dropped viability classification by an average of 24 points
- 387 (82.5%) systems remained in the same viability category.

Looking only at systems that had a CDA, a comparison of scores between 2002 and 2023 revealed:

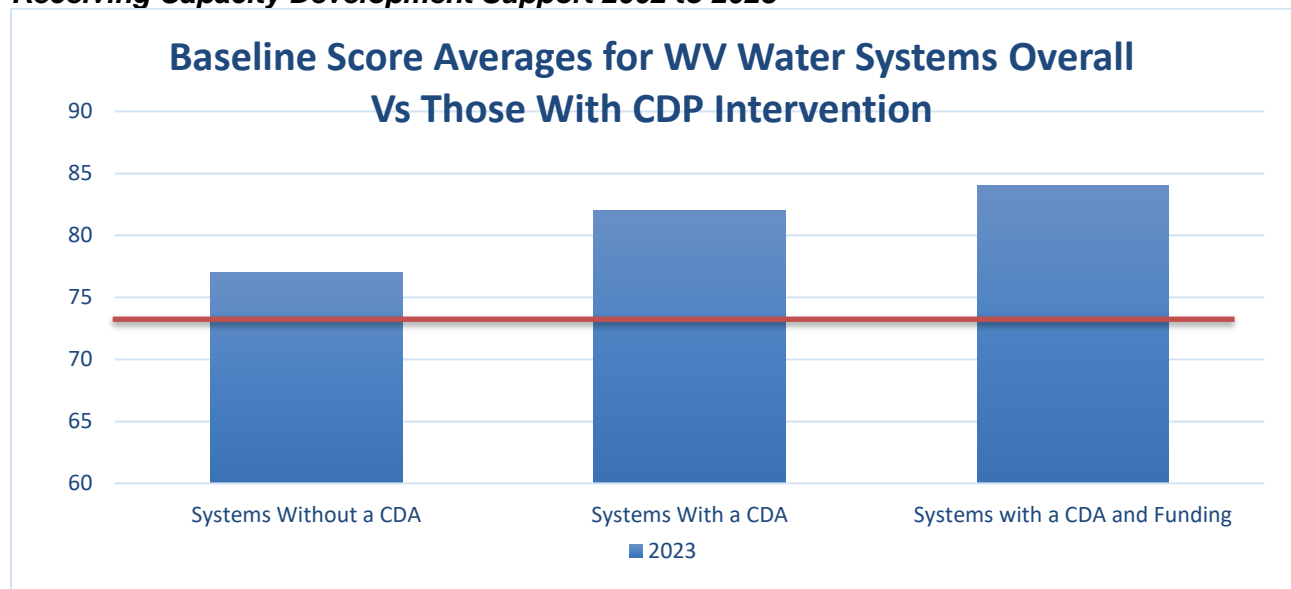
- 20% of systems had increased scores by more than 10 points;
- 31% of systems had scores that declined by more than 10 points; and
- 49% had scores that did not change by +/- 10 points. Those systems were classified as unchanged.

- Of those unchanged systems, 90% are viable, 10% marginal and 0% failing.
- Of those systems that showed a change of 10 points or more, 80% remained viable despite their fall in score.
- Overall, most systems that had a CDA and whose scores changed markedly are making advancements. Only a small number have regressed. Meanwhile, the majority of systems that had a CDA have stable baseline scores (without significant change of  $\pm 10$  points).

The 2020 Governor’s Report showed that systems’ scores between 2002 and 2020 exhibited a plateau between the systems that had received a CDA and those system that had not received a CDA. The average baseline score in 2002 was 70. In 2023, the average score for all was 77, with an average increase of 7 points, while systems that had received a CDA had an increase average score of about 82 points, with an average increase of 12 points.

The 2023 baseline scores show all water systems are making similar improvements in their overall viability with similar gains between those that had a CDA and those that have not with a majority of systems having scores that have not changed classification. Looking at trends in the average score since the first baseline in 2002, a plateau is now achieved. Although this trend does show that Systems not receiving a CDA remain behind the systems which do, indicating CDAs are continuing to have a positive impact although not quite as substantial as in the past. This is to be expected as systems move toward viability and consolidation and regionalization. This positive trend is enhanced when funding is involved. Systems that had both a CDA and DWTRF funding had an average of 84 points as shown in Figure 12.

**Figure 12: Baseline Score Averages for West Virginia Water Systems Overall vs. Those Receiving Capacity Development Support 2002 to 2023**



Note: Red line illustrates 2002 Baseline Average.

This plateau can be attributed to several different factors. First, CDP has made broader efforts to provide tools and resources to all water systems at training and conference



events, so systems can make changes on their own without having staff provide onsite assistance. Second, the majority of CDAs that were performed in the last three years have been primarily on systems that had compliance troubles, which also tend to have viability issues. Lastly, it is likely that having achieved 83% system viability, the improvements in scores and viability are beginning to plateau due to stable, viable systems maintaining their TMF capacity.

#### Drinking Water Treatment Revolving Fund (DWTRF)

Water systems needing funds to make capital improvements to their systems can apply for low or zero interest loans and principal forgiveness from the State. For all systems applying for DWTRF funds, the CDP staff evaluates their TMF capabilities to ensure the system is viable and will be able to repay the loan. Water systems with insufficient TMF capabilities are required to address their deficiencies. Typically, infrastructure and technical deficiencies are addressed as part of the upgrade project. However, any financial and/or managerial deficiencies, such as emergency response plans, asset management plans, capital improvement plans, budget, five-year budget projection, etc., must be addressed as part of the project development.

Since the DWTRF began in 1998, 179 loans totaling in excess of \$315 million have been provided for water system upgrades in West Virginia. To date, these funds have been distributed to a range of system sizes; systems ranging from populations of 58 to more than 56,000 have received funds. It should be noted that the EPA defines in CFR 40 Part 35, Subpart L, a small system as any system with a <10,000 population. More than 90% of systems in West Virginia meet this definition.

DWTRF funds have been distributed to various size systems under 100,000 population. Over the last three years, it is important to note a majority of total funds (70%) have been distributed to systems meeting the EPA's definition (i.e., CFR 40 Part 35, Subpart L) of a small system (<10,000 population). Only 30% of funds went to systems greater than 10,000 population and 0% funds went to systems with more than 100,000 population.

#### WV DEP and WV BPH Assistance to Water Systems

All receptive systems, regardless of size, are provided direct water system assistance by CDP staff. In addition, water system industry organizations and other state and federal agencies also provide assistance. Assistance mechanisms include:

- Direct on-site, hands-on technical assistance;
- Workshops, seminars and training sessions;
- Self-help guidance documents; and
- Templates and tools.

Direct water system assistance is primarily provided through OEHS field staff. This assistance includes conducting training courses, sanitary surveys, site visits and meetings with water system operators and managers. The field staff conducts approximately 250 sanitary surveys every year; contacting water systems regularly, checking for compliance and providing advice or assistance. This ongoing water system assistance using field staff is highly effective with receptive water systems.

As part of the CDA process, the CDP staff reviews baseline data/scores, a TMF capability questionnaire, EPA's enforcement tracking tool (ETT), Public Service Commission annual report submissions, sanitary surveys, etc. The study identifies shortcomings and gaps that are indicative of the system's inability to be sustainable. These deficiencies can be categorized as site-specific or global, as described below.

As systems have made progress to become more viable over the years, many of the deficiencies have moved from global to site-specific as more and more of the systems have addressed issues.

*Site-specific TMF capability deficiencies:*

These deficiencies are unique to a specific water system. In addition, site-specific deficiencies often require on-site, hands-on assistance. Site-specific deficiency examples are:

- Treatment and distribution system leaks and breakdowns.
- Lack of knowledge of critical system components and their condition.
- Inadequate spare parts inventory.
- Failure to follow the sampling schedule.
- Failure to enact adequate rates to sustain system operations.
- Failure to create and enact both long term and short-term budgets; or
- Failure to create/implement standard operating procedures, operations and maintenance tasks, and long-range asset replacement plans.

Staff can assist water systems in addressing site-specific deficiencies through:

- District office staff assistance.
- CDP staff assistance.
- Educational resources such as draft plans/templates and free software, written material and training seminars; and
- Referral to third party resources.

*Global TMF capability deficiencies:*

The following deficiencies are common to numerous water systems. Many of these deficiencies can be addressed through guidance documents or workshops. Examples of global deficiencies are:

- Failure to update/maintain system maps.
- Failure to ensure that system management/board members are adequately trained.
- Failure of operators to obtain proper, adequate training to keep up to date with changing regulations.
- Use of reserve funds for everyday expenses due to inadequate rates to meet operational expenses.
- Failure to monitor the system's financial health (i.e., expenses vs income);
- Failure to include the public in long-term planning; or

- Need to explore energy efficiencies/conduct an energy audit.

Global deficiencies are addressed using tools such as:

- Workshops
- Group training sessions or seminars
- Guidance documents

While there are a number of shortcomings found when systems are reviewed, there are several deficiencies that are noted more often and are seen as key indicators in system viability. Those deficiencies are:

- No long-term repair/replacement planning such as asset management.
- Little or no long-term (and sometimes short-term) financial planning.
- No preventive maintenance procedures or policies.
- No budgeting or poor financial planning and tracking.
- No health and safety procedures or policies.
- No emergency/contingency plans; and
- System management staff not understanding their ultimate responsibility for ensuring the water system's technical capability to provide reliable, safe drinking water and an adequate budget and rates supporting long-term water system viability.

Since the program's inception, the CDP has recognized the need for tools and resources to address deficiencies identified during assessments. These tools have been created or acquired by CDP staff and include operations and maintenance procedures, health and safety procedures, cross-connection/backflow prevention procedures, asset management plans, capital improvement plans and emergency/contingency plans. The documents include guidance, procedures and plan templates. These resources serve as a framework/blueprint for the water system to develop future plans and procedures. These guides help water systems develop and implement the necessary procedures which in turn ensure vital water system operational areas are addressed.

The EPA continues placing increased emphasis on proper water system management. This emphasis has resulted in their Sustainable Infrastructure initiative, Full Cost Pricing focus, asset management and other financial evaluation tool development. The CDP has been actively involved in bringing these EPA initiatives to West Virginia water systems. Often, this is accomplished through training sessions held by the Public Service Commission of West Virginia. BPH, DEP, and Capacity Development Program staff assist in the training for the Public Service Commission's Public Service District Board Member Seminar and Municipal Officials Training. Training topics include sustainable infrastructure, long-term planning and asset management in all of these courses.

All DWTRF loan applicants are required to complete a CDP approved asset management plan (AMP) as a condition of their loan. The CDP staff has created guidance documents, examples, templates, conducted training webinars, and encouraged use of a basic plan by using a series of spreadsheets or an advanced plan by using computer software programs to assist systems in creation of a comprehensive AMP. If the systems request

additional guidance creating an AMP, projects can include funds for systems to utilize in hiring an engineering firm or other third party to assist with AMP development. The CDP AMP work has drawn national attention and has been recognized by the EPA as an example for other states. For all DWTRF recipients, the CDP reviews AMP components during development with suggested potential improvements as well as reviewing the whole AMP when completed. Trainings, tools, and resources are available on the CDP website for use by all water systems. CDP staff is available to provide assistance in development of AMP components and review all plans submitted.

### Other Resources

In addition to assistance from CDP staff, water systems are commonly provided with outside resources or referred to outside partner agencies. Staff includes a list of these partner agencies in every TMF assessment report. The primary partner agencies available for water systems include:

- Public Service Commission of West Virginia
- West Virginia Rural Water Association
- Maryland Center for Environmental Training
- National Environmental Training Center for Small Communities
- Rural Community Assistance Program
- Regional Planning and Development Councils
- West Virginia Environmental Training Center
- Peer assistance from other water systems
- West Virginia Water/Wastewater Agency Response Network (WVWARN)

A complete list of assistance providers is included in Appendix D.

### Future Activities

The CDP will continue to use a proactive, hands-on approach in supporting water systems. The need for a CDA will be determined through the recommendations of district office staff, direct request from a system, request of OEHS's compliance/enforcement staff, and by CDP staff review of baseline scores. All initial assessments are onsite and include resources, tools and guidance needed to improve water systems' TMF.

The CDP monitors the ETT list and continues to work with the OEHS Enforcement Section and other water utility related organizations (e.g., Public Service Commission, Rural Community Assistance Program, Regional Planning and Development Councils, adjacent Public Service Districts, etc.) to aid water systems having long-term compliance problems.

The CDP will follow-up with systems for a full year following an assessment to assist implementation of the CDP recommendations to improve their TMF.

The CDP also monitors newly formed water system's ETT scores for violations related to failure to follow the monitoring and compliance schedules. These systems' scores for the previous four quarters are available in the annual CDP Report located at: [http://www.wvdhhr.org/oehs/eed/i&cd/Capacity\\_Development\\_Annual\\_Reports.asp](http://www.wvdhhr.org/oehs/eed/i&cd/Capacity_Development_Annual_Reports.asp).

In the future, the CDP annual report will be found at:

<https://dep.wv.gov/WWE/programs/SRF>.

The CDP will continue to perform a CDA at all public water systems requesting DWTRF funds for projects. This will be an opportunity to:

- Obtain improvement in TMF for facilities requesting funding; and
- Suggest additions to the projects that can address identified shortcomings in the system.
- Promote the creation and implementation of AMP for all systems

CDP staff will continue to provide training opportunities to water systems including:

- Teaching portions of the water system operator's courses; and
- Teaching Public Service Districts and Municipalities Courses on Capacity Development, TMF, and asset management through the West Virginia Public Service Commission.

The CDP will further programmatic improvements by:

- Continuing the development of asset management plan processes, tools, resources and skills of CDP staff, water system staff, and engineering firm's staff.
- Exploring options for additional onsite, hands-on support to systems for implementation of CDA recommendations for identified shortcomings.
- Exploring and promoting sustainable and green solutions for water systems
- Exploring and promoting cyber security options
- Exploring and promoting emerging contaminant solutions
- Exploring and promoting Lead Service Line replacement options for systems

## **APPENDIX A**

### **Graphs/Figures**

- Figure 1: Water System Ranking Trends in West Virginia (pg. 6)
- Figure 2: Number of West Virginia Water Systems in Each Viability Classification, 2023 (pg. 9)
- Figure 3: Percentage of West Virginia Water Systems in Each Viability Classification, 2023 (pg. 10)
- Figure 4: Number of West Virginia Citizens Served by Each Viability Classification for Water Systems, 2023 (pg. 10)
- Figure 5: Percentage of West Virginia Population Served by Each Viability Classification of Water Systems, 2023 (pg. 11)
- Figure 6: Trends in Numbers of West Virginia Water Systems by Population Served (pg.11)
- Figure 7: Number of West Virginia Water Systems by Population Served Trends Over Time (pg. 12)
- Figure 8: Population Trends of West Virginia Water Systems by Viability Classification (pg. 13)
- Figure 9: Viability of West Virginia Water Systems: Trends Over Time (pg. 14)
- Figure 10: West Virginia Water System Viability Trends (pg. 14)
- Figure 11: West Virginia Water System Viability Designation by Population Served, 2023 (pg. 15)
- Figure 12: Baseline Score Averages for West Virginia Water Systems Overall vs. Those Receiving Capacity Development Support 2002 to 2023 (pg. 16)

## APPENDIX B

### Water System Definitions

#### **Community Water System (CWS)**

A public water system that conveys water for human consumption to year-round residents (e.g., municipality, subdivision, etc.).

#### **Municipal, Town, or City Water System**

A community water system owned and operated by a municipal government.

#### **Non-transient Non-community Water System (NTNC)**

A non-community water system, often privately owned, that serves 25 or more of the same persons over six months per year (e.g., schools, factories, office buildings, etc.).

#### **Public Service District (PSD) Water System**

A community water system owned and operated by a Public Service District created by the County Commission.

#### **Public Water System (PWS)**

A system for the provision of water to the public for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals, 60 or more days out of the year.

## **APPENDIX C**

### **Acronyms**

AMP – Asset Management Plan

BPH – Bureau for Public Health

CDA – Capacity Development Assessment

CDP – Capacity Development Program

CWS – Community Water System

DEP- Department of Environmental Protection

DWTRF – Drinking Water Treatment Revolving Fund or State Revolving Fund

EPA – U.S. Environmental Protection Agency

ETT – Enforcement Tracking Tool

NTNC – Non-transient Non-community Water System

OEHS – Office of Environmental Health Services

TMF – Technical, Managerial and Financial (Water System Capabilities)



## APPENDIX D

### Resources for Small Communities

Name/Address	Phone, Fax, Website	Resource Information
WV Department of Environmental Protection Division of Water and Waste Management 601 57th Street, SE Charleston, WV 25304	Phone: 304-926-0499 Fax: 304-926-0463 Website: <a href="https://dep.wv.gov/WWE/programs/SRF">https://dep.wv.gov/WWE/programs/SRF</a>	The WV Capacity Development Program evaluates water systems' financial, technical, and managerial abilities and provides tools and resources to support water systems in increasing their competence.
WV Department of Health and Human Resources, Bureau for Public Health Office of Environmental Health Services 350 Capitol Street, Room 313 Charleston, WV 25301	Phone: 304-558-2981 Fax: 304-558-0691 Website: <a href="http://www.wvdhhr.org/oehs">www.wvdhhr.org/oehs</a>	The Primacy agency for the SDWA in the State of WV. The OEHS District offices provide onsite assistance as well as performing the required sanitary surveys.
National Environmental Services Center (NESC) West Virginia University P.O. Box 6064 Morgantown, WV 26506	Phone: 1-800-624-8301 or 304-293-4191 Fax: 304-293-3161 Website: <a href="http://www.netc.wvu.edu">www.netc.wvu.edu</a>	National Center for wastewater, drinking water, and solid waste training information at your fingertips.
National Drinking Water Clearing House P.O. Box 6064 Morgantown, WV 26506	Phone: 1-800-624-8301 Website: <a href="http://www.nesc.wvu.edu.ndwc">www.nesc.wvu.edu.ndwc</a>	WV Technical Advisory Program (associated with the National Drinking Water Clearing House) provides training and assistance to small water systems at no cost to the systems.
WV Rural Water Association 100 Young Street Scott Depot, WV 25560	Phone: 1-800-339-4513 or 304-201-1689 Fax: 304-201-1694 Website: <a href="http://www.wvrwa.org">www.wvrwa.org</a>	Non-profit organization of rural and small publicly owned water and wastewater systems. RWA focuses on providing training and technical assistance to the managers and operators of systems. RWA works with other non-profit organizations in representing the interest of public water and wastewater systems.

<b>Name/Address</b>	<b>Phone, Fax, Website</b>	<b>Resource Information</b>
Public Service Commission 201 Brooks Street Charleston, WV 25301	Phone: 304-340-0300 or 1-800-344-5113 Fax: 304-340-0325 Website: <a href="http://www.psc.state.wv.us/div/ww.htm">www.psc.state.wv.us/div/ww.htm</a>	Oversight and review of management of water systems to provide consumer protection in the operation of water systems in West Virginia.
American Water Works Association (AWWA) 6666 Quincy Avenue Denver, CO 80235	Phone: 303-794-7711 or 1-800-926-7337 Fax: 303-347-0804 Website: <a href="http://www.awwa.org">www.awwa.org</a>	Standards for design and operation of water systems.
WV Environmental Training Center (ETC) Cedar Lakes, Ripley, WV	Phone: 304-372-7878 Fax: 304-372-7887	Training center for water and wastewater operations personnel.
WV Water Development Authority (WV WDA) 1009 Bullitt Street Charleston, WV 25301	Phone: 304-414-6501 Fax: 304-414-0866 Website: <a href="http://www.wvwda.org">www.wvwda.org</a>	Administration of financing programs for the State of West Virginia.
WV State Agency for Surplus Property 2700 Charles Avenue Dunbar, WV 25064	Phone: 304-766-2626 or 800-576-7587 Fax: 304-766-2631 Website: <a href="http://www.state.wv.us/admin/purchase/surplus">www.state.wv.us/admin/purchase/surplus</a>	State surplus properties available for purchase from a variety of agencies.
Investment Management Board 500 Virginia Street, East, Suite 200 Charleston, WV 25301	Phone: 304-345-2672 Fax: 304-345-5939 Website: <a href="http://www.wvimb.org">www.wvimb.org</a>	Investment services for eligible entities in the State of West Virginia.
Municipal Bond Commission 8 Capitol Street, Suite 500 Charleston, WV 25301	Phone: 304-558-3971 Fax: 304-558-1280	Collect and track all loan repayments to state funding agencies.
USDA – Rural Development 75 High Street Morgantown, WV 26505	Phone: 304-284-4860 Fax: 304-284-4893 Website: <a href="http://www.rurdev.usda.gov/wv/officestate.htm">www.rurdev.usda.gov/wv/officestate.htm</a>	Financial programs to support essential public facilities and services such as water and sewer systems.
U.S. Environmental Protection Agency (EPA) Region 3 1650 Arch Street Philadelphia, PA 19102	Phone: 215-814-5780 Water protection: 215-814-2300 Drinking water: 215-814-2322 Website: <a href="http://www.epa.gov/region3">www.epa.gov/region3</a>	Overview of small water systems and State Capacity Development programs.
Water Environment Federation 601 Wythe Street Alexandria, VA 22314	Phone: 703-684-2400 or 800-666-0206 Fax: 703-684-2492 Website: <a href="http://www.wef.org">www.wef.org</a>	Not for profit technical and educational organization with members from varied disciplines who work toward preservation and enhancement of the global water environment.

<b>Name/Address</b>	<b>Phone, Fax, Website</b>	<b>Resource Information</b>
WV Rural Community Assistance Program 12 C Sunset View Bridgeport, WV 26330	Phone: 304-842-9287 Fax: 304-842-5727 Website: <a href="http://www.wvcommunity.org/recap.htm">www.wvcommunity.org/recap.htm</a>	Non-profit organization that provides technical assistance to small communities in the areas of water, wastewater, and solid waste.
WEAP – Water Evaluation and Planning	Website: <a href="http://www.WEAP21.org/index">www.WEAP21.org/index</a>	A comprehensive, flexible and user-friendly computer-based framework for planning and policy analysis. It can be a useful addition to water systems' toolbox of models, databases, spreadsheets and other software.
Sustainable Water Infrastructure – Online Course from VA Tech	Phone: 540-231-9420 or 1-866-791-4898 Website: <a href="http://www.cpe.vt.edu/swim/index.html">www.cpe.vt.edu/swim/index.html</a>	Three-course certificate program for practicing drinking water, wastewater, and stormwater professionals. Self-paced online courses include the Fundamentals of Asset Management, Advanced Topics for Asset Management, and Asset Management Plan.
National Rural Water Association 29115 13 <sup>th</sup> Street Duncan, OK 73533	Phone: 580-252-0629 Fax: 580-255-4476 Website: <a href="http://www.nrwa.org">www.nrwa.org</a>	National Rural Water Association, through its state affiliates, is the largest water and wastewater utility membership organization in the nation representing over 31,000 utility system members. While membership includes utilities of all sizes, they primarily service populations of 10,000 or less of the public water systems in America.

Name/Address	Phone, Fax, Website	Resource Information
Water System periodicals: <ul style="list-style-type: none"> <li>• Water Sense</li> <li>• Water World</li> <li>• Water and Waste Digest</li> <li>• Mountain State Water Line by WV Rural Water Association</li> <li>• On tap – by NESCA</li> <li>• Journal of Water Resources Planning and Management by American Society of Civil Engineers</li> </ul>		