

2019 Annual Report to the USEPA Kentucky Capacity Development Program

Federal Fiscal Year 2019
October 2018 – September 2019



**300 Sower Boulevard
Frankfort, Kentucky 40601**

2019 Annual Report to the USEPA Kentucky Capacity Development Program

Kentucky's Drinking Water Capacity Development Program Implementation Report is intended to provide the U.S. Environmental Protection Agency, Region 4, with pertinent updates covering all capacity development activities within the Commonwealth of Kentucky for Federal Fiscal Year (FFY) 2019.

A. New Systems Program Overview

1. *Has the State's legal authority (statutes/regulations) to implement the New Systems Program changed within the previous reporting year?*

Kentucky's legal authority, Kentucky Revised Statutes (KRS) 151.630, to implement the new systems program has not changed.

2. *Have there been any modifications to the State's control points?*

Kentucky uses the control points in the 1999 Capacity Development Report to the EPA which have not changed since that time.

3. *List new systems (PWSID & Name) in the State within the past three years, and indicate whether those systems have been on any of the annual Significant Non-Compliers (SNC) lists.*

There have been no new systems added to the annual Significant Non-Compliers lists in the last three years.

As of September 30, 2019 there are:

- 434 regulated public water systems (PWS):
 - 383 community
 - 17 non-transient non-community
 - 34 transient non-community
- 61 state-regulated water systems:
 - 6 bottled water systems
 - 55 semi-public water systems

| TABLE 1 NEW PUBLIC WATER SYSTEMS ACCORDING TO FEDERAL FISCAL YEAR | | | | |
|--|---|-----------|-------|------------|
| PWSID | Name | Source | Type | Date |
| 2016 Activated | | | | |
| KY0573746 | Misty Artesian | GW | BW | 7/28/2016 |
| 2016 Inactivated | | | | |
| KY0192732 | Nienaber Property Public Water | GW | C | 1/6/2016 |
| KY0980898 | Mosley Properties LLC | GW | C | 2/12/2016 |
| KY0673238 | Kings Creek Senior Citizens Center | GW | NTNC | 3/25/2016 |
| KY0673052 | Oven Fork Senior Citizens Center | GW | NTNC | 3/25/2016 |
| KY0792883 | Southern Komfort Resort | GW | TNC | 3/25/2016 |
| KY0100004 | Overland Development/Lockwood Estates | Purchaser | C | 6/7/2016 |
| KY0082248 | Rivershore Sports Park | GW | TNC | 6/8/2016 |
| KY0603287 | 4 Star Village Apartments | GW | C | 8/1/2016 |
| 2017 Activated | | | | |
| KY0183519 | New Concord Dollar General Store | GW | TNC | 2/22/2017 |
| KY0253535 | Liberty Bible Church | Purchaser | SemiP | 3/28/2017 |
| KY0182822 | Sunset Harbor Hill Campground | GW | TNC | 5/31/2017 |
| KY0730522 | Locust Valley Mobile Est | GW | C | 8/7/2017 |
| 2017 Inactivated | | | | |
| KY0533195 | Nickys Bar-B-Que | GW | TNC | 1/17/2017 |
| KY0050490 | Cave City Water System | Purchaser | C | 2/17/2017 |
| KY0532233 | Harpers Country Ham | GW | NTNC | 2/8/2017 |
| 2018 Activated | | | | |
| KY0753505 | McLean County Regional Water Commission | SW | C | 3/22/2018 |
| KY0183457 | Murray-Calloway Co Fairgrounds | GW | SemiP | 4/10/2018 |
| 2018 Inactivated | | | | |
| KY0593423 | Rosedale Water District LLC | Purchaser | C | 11/30/2017 |
| KY0370607 | Imperial Mobile Home Park | Purchaser | C | 1/22/2018 |
| KY0560639 | Wallace Farm | GW | C | 12/1/2018 |
| 2019 Activated | | | | |
| No water systems were activated in federal fiscal year 2019. | | | | |
| 2019 Inactivated | | | | |
| KY0090322 | North Middletown Water District | Purchaser | C | 4/8/2019 |
| GW – Groundwater | SW – Surface Water | | | |
| C – Community | NTNC – Non-Transient Non-Community | | | |
| SemiP – Semi-Public | TNC – Transient Non-Community | | | |
| | BW – Bottled Water | | | |

B. Existing System Strategy

1. *In referencing the State’s approved existing systems strategy, which programs, tools, and/or activities were used, and how did each assist existing PWSs in acquiring and maintaining TMF capacity? Discuss the target audience these activities have been directed towards.*

Kentucky’s approved existing system strategy is outlined below, followed by a discussion of how each strategy assisted existing systems in acquiring and maintaining technical, managerial, and financial capacity:

- Prioritize systems most in need of improving capacity.
- Identify the factors that encourage or impair the capacity of water systems.
- Use the authority and resources of the Safe Drinking Water Act (SDWA) to enhance technical, managerial and financial (TMF) capacity.
- Establish a baseline and measure the capacity improvements of systems in the state.
- Involve stakeholders in state efforts to improve water system capacity.

Prioritize systems most in need of improving capacity

The Division of Water (“the Division”) retains primacy to regulate a total of 434 community and non-community PWSs in Kentucky. The majority of PWS (77%) serve communities with populations of less than 10,000 (Table 2). Although these PWS serve a small portion of Kentucky’s overall population, historically they have the greatest need for assistance.

| TABLE 2 PUBLIC WATER SYSTEMS BY POPLUATION SERVED | | | |
|--|-------------------------|---------------------------------------|-------------------|
| System Size by Population Served | Number of Water Systems | Percentage (%) of Total Water Systems | Population Served |
| ≤ 10,000 | 336 | 77 | 1,075,770 |
| > 10,000 | 98 | 23 | 3,460,015 |

The sanitary survey is the primary means for assessing PWS capacity to maintain compliance with the SDWA. Field inspectors from the Division, located in each of Kentucky’s ten regional offices, perform the technical portion of the sanitary survey. Capacity development personnel in the Division’s central office perform the managerial and financial portions of the survey. Each portion of the survey is conducted within the same month according to a schedule developed by the Division.

The sanitary survey incorporates critical technical, managerial, and financial (TMF) capacity criteria developed by the Division and its stakeholders. A PWS is deemed to lack capacity if any response to a critical question is unfavorable. The capacity assessment is used in conjunction with the tracking and compliance data of the Enforcement Targeting Tool (ETT) to prioritize and provide assistance to PWS.

Identify the factors that encourage or impair the capacity of water systems

Data from the survey is currently available in a Microsoft Word document or Portable Document Format (“pdf”). The Division utilizes a report extracted from the Safe Drinking Water Information System database which details PWS deficiencies and recommendations based on the eight essential elements (source water, treatment, distribution, finished water storage, pumps and controls, monitoring,

reporting, and data verification, management and operations, and operator compliance) evaluated during the sanitary survey. Unfortunately, this report is nonspecific regarding the type(s) of deficiencies or recommendations identified within each element which requires Division staff to manually verify data within each of the eight elements for every PWS to assess capacity. The process is antiquated, time consuming, and labor intensive. The Division is exploring new applications to utilize and address the issue with data extraction which will improve the Division's ability to prioritize and target assistance to PWS.

The SDWA and Kentucky regulations (401 KAR Chapter 8) require PWS to monitor treated water for contaminants and report results to the Division at regular intervals during the year. A notice of violation is issued to PWS when treatment levels, contaminants, monitoring, or reporting requirements are not in compliance with SDWA. Historically, the greatest numbers of PWS violations have been administrative in nature (Figure 1). Division personnel have worked closely with industry stakeholders and PWS to substantially reduce the number of health-based and monitoring and reporting violations. Health-based violations, primarily associated with the Stage 2 Disinfection By-Product Rule (DBPR), have decreased dramatically from 101 (FFY 2018) to 42 in (FFY 2019). However, monitoring and reporting violations have moderately increased from 244 (FFY 2018) to 270 (FFY 2019).

FIGURE 1
HEALTH-BASED AND MONITORING/REPORTING VIOLATIONS

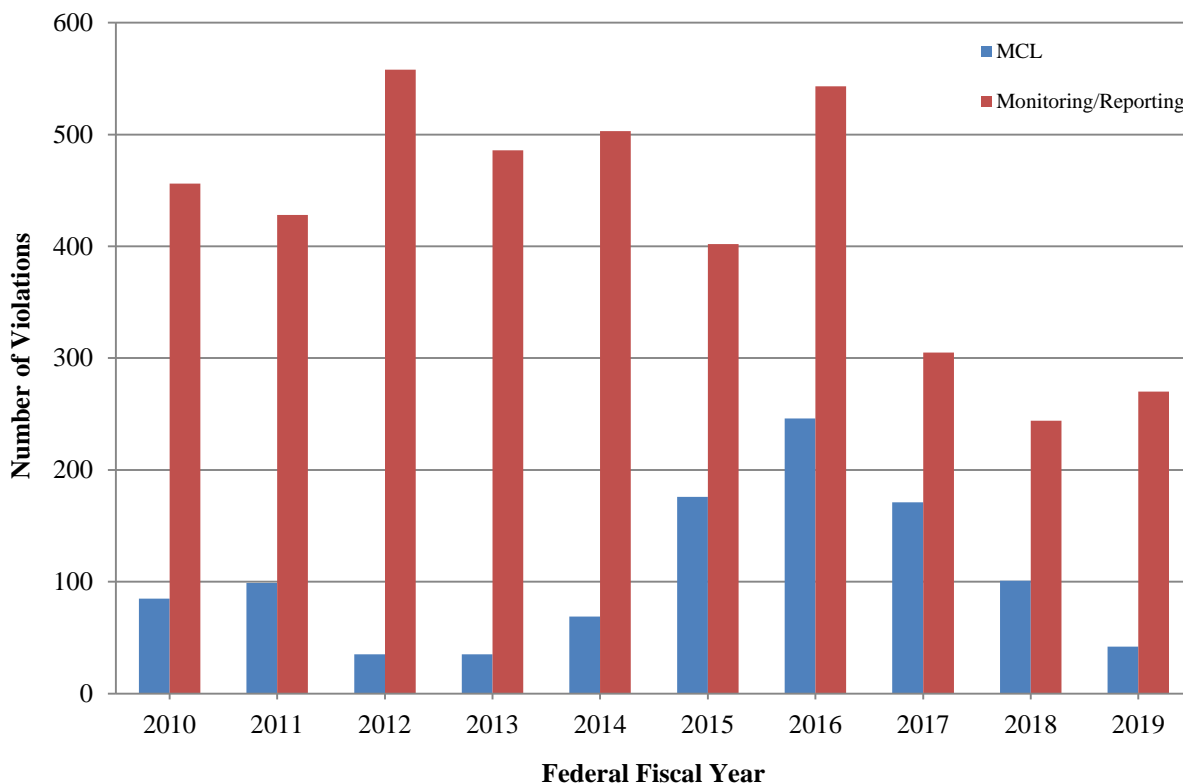
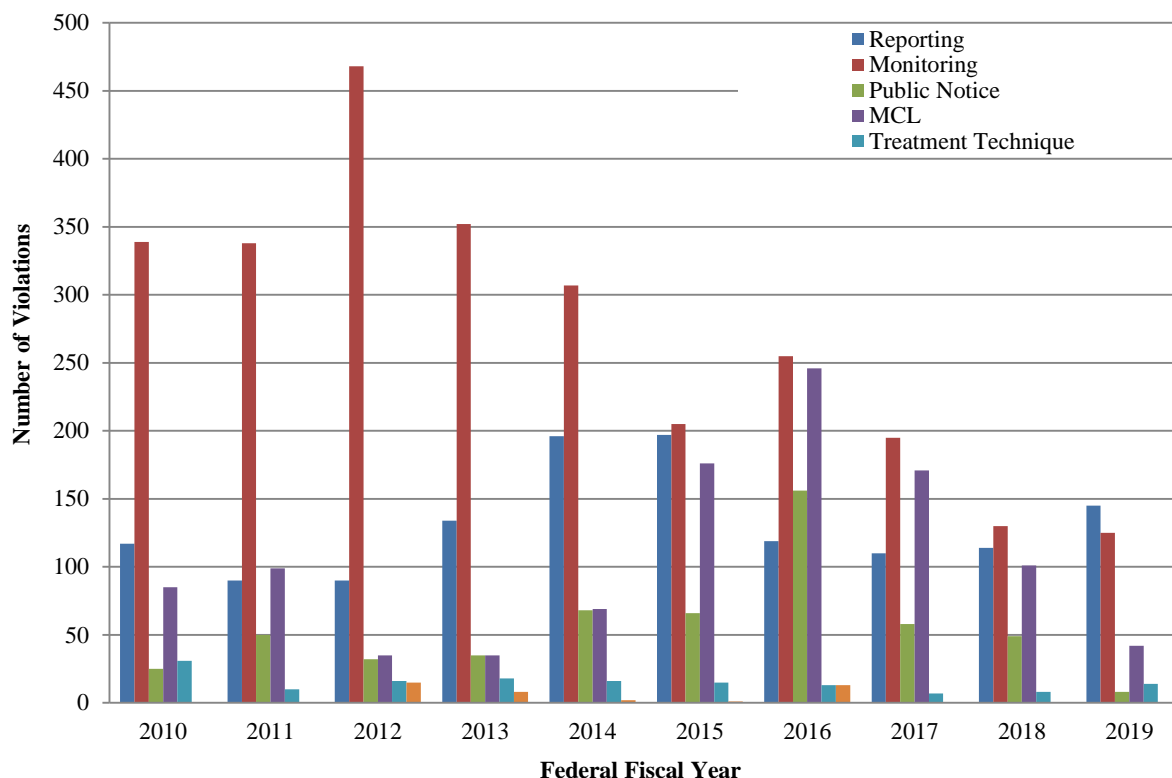


FIGURE 2
PWS VIOLATIONS BY FEDERAL FISCAL YEAR



The Area-Wide Optimization Program (AWOP) continues to be a successful component for technical assistance. Targeted technical assistance, performance based trainings, and comprehensive performance evaluations conducted at PWS have aided in substantially reducing the number of DBP MCL violations since 2016. In calendar year 2018, 55 PWS serving 1,422,265 Kentuckians met microbial AWOP goals and 323 PWS serving 3,838,067 Kentuckians met DBP goals. Systems that actively participate in, and meet the goals of, the AWOP are recognized with certificates of achievement and awards.

Division personnel completed 136 sanitary surveys and 434 instances of on-site assistance and training covering all aspects of TMF capacity. The Division continued to implement and support the Microbiology, Chemistry, and Cryptosporidium Laboratory Certification programs by conducting 12 chemistry and 34 microbiology lab audits. Division personnel conducted two modular Distribution System Optimization trainings in Somerset, Kentucky with seven PWS participating in both trainings. Along with the trainings, Division personnel conducted six presentations and workshops across the state on a wide range of topics, including regulations and compliance, Stage 2 DBPR control strategies, AWOP, and monitoring and reporting compliance. The Division continued its partnership with USEPA's Technical Support Center by participating in activities related to AWOP, DBP, and optimal corrosion control treatment. Working cooperatively with the Rural Community Assistance Partnership, Division personnel presented information on preventive maintenance, asset management planning, and sustainability at four trainings in the cities of Hazard, Maysville, and Somerset.

The Division of Water and the Kentucky Infrastructure Authority jointly administer the Drinking Water State Revolving Fund (DWSRF) program in Kentucky via a Memorandum of Agreement. In 2019, Kentucky made 13 new binding commitments and two commitment increases for a total of \$29,519,154

to provide assistance for construction of drinking water projects. The average interest rate on funds committed during the year was 0.93%. Binding commitments for small systems totaled \$18,355,955 or 62% of total binding commitments. Binding commitments for disadvantaged communities totaled \$29,519,154 or 100% of total binding commitments.

Establish a baseline and measure the capacity improvements of systems in the State

One method of measuring improvements in PWS capacity is evaluating the number of annual violations. Another method is analyzing deficiencies identified in the sanitary survey, which is examined concurrently with the TMF capacity of PWS. A dramatic reduction in the number of Kentucky PWS violations over the last two years demonstrates substantial improvement in PWS capacity.

Beginning in FFY 2016, non-community (NC) water systems transitioned to a five-year sanitary survey cycle, while community water systems (CWS) remained on a three-year cycle. Therefore, a new baseline of data is being established which cannot be easily compared to previous system data which contained both types of systems. This transition allowed the Division to organize new PWS sanitary surveys with current surveys that are conducted in regions across the state, which improved travel efficiency and increased on-site assistance time. Since CWS and NC sanitary surveys are no longer conducted in the same cycle, data from each type of system are analyzed independently from one another.

According to recent data, the percentage of CWS with full TMF capability to produce safe and reliable drinking water has remained relatively the same for the last three federal fiscal years at 35%, 38%, and 37%, respectively (Figure 3, Figure 4, and Figure 5). A similar trend is exhibited in each combination of incomplete capacity except for CWS lacking strictly managerial (M) capacity, which increased to 20%, and CWS lacking managerial and financial (M & F) capacity which decreased to six percent, in FFY 2019. The Division has begun to assist CWSs in areas of management and finances through on-site assistance during the sanitary survey, presenting asset management and the Check-Up Program for Small Systems (CUPSS) asset management tool at trainings across the state, and providing financial means for CWS to rehabilitate or replace aging infrastructure through the DWSRF program.

FIGURE 3
FFY 2017 PERCENTAGES OF CWS
WITH INCOMPLETE CAPACITY

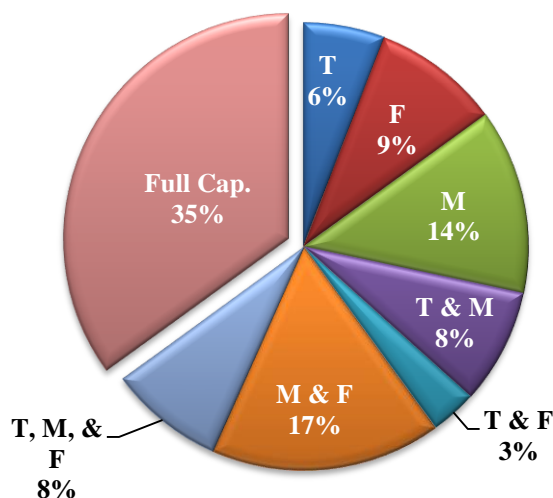
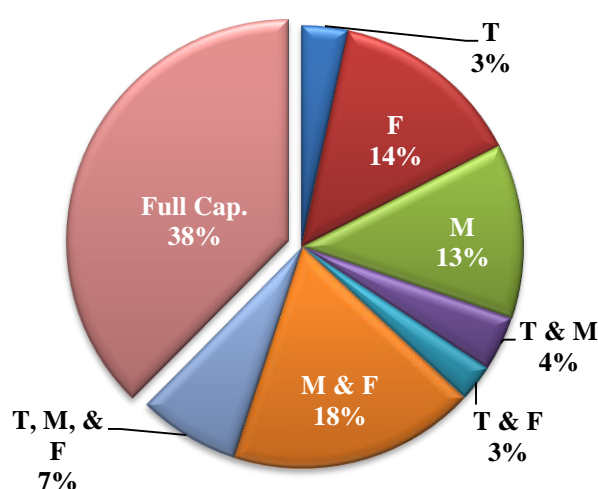
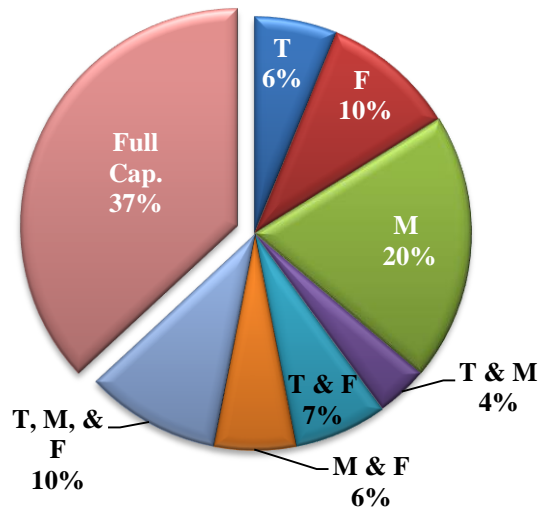


FIGURE 4
FFY 2018 PERCENTAGES OF CWS
WITH INCOMPLETE CAPACITY

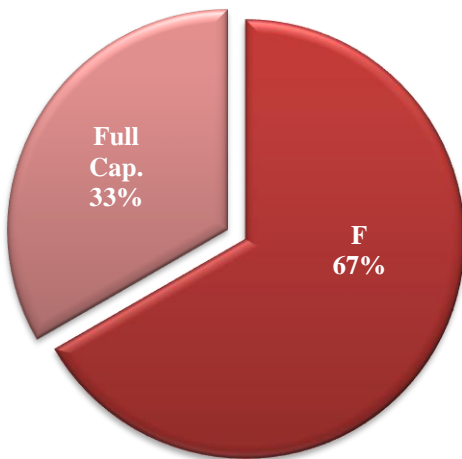


**FIGURE 5
FFY 2019 PERCENTAGES of CWS
WITH INCOMPLETE CAPACITY**

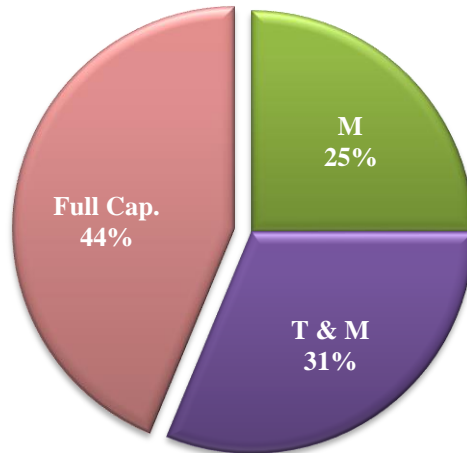


Beginning in FFY 2016, non-transient non-community and transient non-community water system sanitary surveys changed from a three-year to a five-year cycle. A complete analysis of data from all NC water systems cannot be conducted until the completion of sanitary surveys in FFY 2020. These include schools, camps, resorts, and businesses which may not have the same technical, managerial, and/or financial resources as CWS and are ineligible for loans from the DWSRF. Nevertheless, the percentage of NC water systems with full capacity is not substantially different than that of CWS (Figures 6-9). Still, the majority of NC water systems lack full TMF capacity and will remain a priority for targeted assistance and training. These water systems may also be candidates for consolidation or regionalization with CWS.

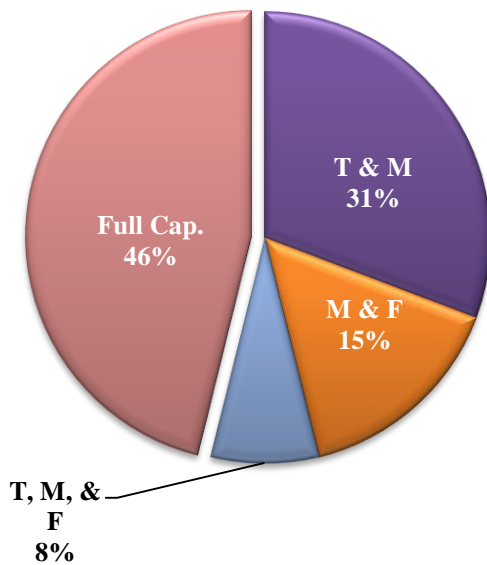
**FIGURE 6
FFY 2016 PERCENTAGES OF NC
WITH INCOMPLETE CAPACITY**



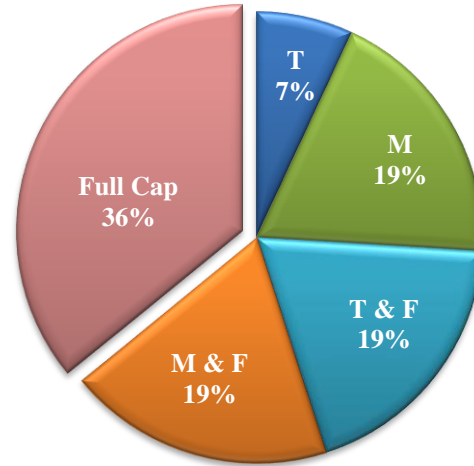
**FIGURE 7
FFY 2017 PERCENTAGES OF NC
WITH INCOMPLETE CAPACITY**



**FIGURE 8
FFY 2018 PERCENTAGES OF NC
WITH INCOMPLETE CAPACITY**



**FIGURE 9
FFY 2019 PERCENTAGE OF NC
WITH INCOMPLETE CAPACITY**



Enforcement Referral Policy/Enforcement Targeting Tool (ETT)

In FFY 2019, five PWS were referred to the Division of Enforcement after they accrued eleven or more points as calculated by the ETT. If a system cannot return to compliance within six months of being identified by the ETT, formal enforcement action is initiated. Table 3 represents a summary of those systems. Kentucky drinking water and enforcement staff continue to participate in e quarterly conference calls with USPEA Region 4 staff for updates and guidance on using the ETT.

**TABLE 3
ENFORCEMENT TARGETING TOOL REFFERALS**

| PWSID | PUBLIC WATER SYSTEM NAME | CAUSE(S) |
|---|---------------------------------|--|
| KY0270003 | ALBANY WATER WORKS | CCR, DBP MCL, OEL, PN, and RTCR Violations |
| KY0170528 | CALDWELL COUNTY WATER DISTRICT | DBP MCL, OEL, and PN Violations |
| KY0140079 | CLOVERPORT WATER & SEWER SYSTEM | CCR, DBP MCL, PN, and RTCR Violations |
| KY0880594 | MORGAN COUNTY WATER DISTRICT | DBP MCL and OEL Violations |
| KY1130433 | UNION COUNTY WATER DISTRICT | DBP MCL and OEL Violations |
| CCR - Consumer Confidence Report | | PN - Public Notice |
| DBP M&R - Disinfection By-Product Monitoring & Reporting | | RTCR - Revised Total Coliform Rule |
| DBP MCL - Disinfection By-Product Maximum Contaminant Level | | SWTR - Surface Water Treatment Rule |
| MOR - Monthly Operating Report | | TCR - Total Coliform Rule |
| OEL - Operational Evaluation Level | | TOC - Total Organic Carbon |

Involve Stake Holders in State Efforts to Improve Water System Capacity

The Division continues to contract with the Kentucky Rural Water Association (KRWA) using DWSRF set-asides. Since 2015, the contract has emphasized Stage 2 DBPR compliance provided to small PWS to achieve TMF capacity. A list of priority PWSs, based on DBP compliance data, is developed annually by Division personnel and submitted to the KRWA. Targeted DBP assistance was provided to approximately 25 small PWS, and additional assistance was provided to multiple systems (83) upon request, in leak detection, water loss, operations and maintenance manuals, and rate studies. The KRWA conducted four trainings in Lexington, Prestonsburg, Calvert City, and Bowling Green that covered corrosion control, DBP mitigation, granular activated carbon, and SDWA monitoring and compliance. The objective of these sessions was to provide useful information to attendees to help them better perform their duties as drinking water professionals and to enhance operations at their facilities.

The Joint Drinking Water/Wastewater Advisory Council (Council) is a stakeholder panel convened by the Division Director several years ago to address issues affecting consumers and the regulated community. It is comprised of government officials and representatives of public and rural water utilities, and holds quarterly public meetings. The council established an ad-hoc workgroup to review modernizing the Capacity Development Strategy, the sanitary survey evaluation, and to include requirements from the American Water Infrastructure Act (AWIA) of 2018. The goal is to enhance the efficiency and efficacy of the program, address current challenges prohibiting PWS from achieving TMF capacity, and encourage PWS to develop asset management plans that include best management practices. A draft of the updated strategy is under review by the workgroup and will be presented to the Council and public for comment prior to implementation.

2. *Based on the existing system strategy, how has the State continued to identify systems in need of capacity development assistance?*

Kentucky continues to use critical TMF criteria from the sanitary survey and the ETT as its primary means for determining and prioritizing PWS in need of assistance. The Division and its stakeholders are currently re-evaluating TMF criteria as part of updating the Capacity Development Strategy. The Division continues to promote and distribute the CUPSS asset management software to small systems to aid in developing asset management programs and maintain financial and managerial capacity. The Division also uses a PWS's rated design capacity, water availability, operator certification, pressure and/or water loss, and regulatory compliance as indicators of capacity.

The Division provides technical data on the drinking water program through sanitary surveys and inspections, and uses this information to provide support to PWSs to maintain compliance with the SDWA. In addition, complaints are tracked and flagged, if necessary, for investigation and resolution.

Kentucky's Capacity Development Program personnel interact with PWS at training venues, during sanitary surveys, and through on-site outreach. During these interactions, personnel often discern issues and trends that the Capacity Development Program should target.

3. *During the reporting period, if statewide PWS capacity concerns or capacity development needs (TMF) have been identified, what was the State's approach in offering and/or providing assistance?*

The Division continues to provide on-site assistance and training to PWS identified as a priority by the ETT, AWOP, and sanitary survey. Additionally, the Division works with its stakeholders to provide TMF training and support through the Kentucky Division of Compliance Assistance, the

Kentucky Public Service Commission, Rural Community Assistance Partnership, Kentucky Rural Water Association, and Kentucky Water & Wastewater Operators Association.

4. *If the State performed a review of implementation of the existing systems strategy during the previous year, discuss the review and how findings have been or may be addressed?*

An ad-hoc workgroup is reviewing the strategy to update the method and criteria used to determine TMF capacity and to include requirements from AWIA 2018, particularly in the areas of asset management and consolidation. A draft of the updated strategy is under review by the workgroup and will be presented to the Council and public for comment prior to implementation.

5. *Did the State make any modifications to the existing system strategy?*

There were no changes implemented to the Capacity Development Strategy in FFY 2019.

C. Looking ahead – Miscellaneous Notes/Challenges

The Kentucky Legislature established a Public Water and Wastewater System Infrastructure Task Force in 2019, consisting of legislators and citizens, to evaluate and develop a legislative strategy and policy options regarding:

- 1) Creating an evaluation process that can identify CWS and wastewater systems that lack TMF capacity and that may be at risk of failure;
- 2) Identifying and assessing the current regulatory and enforcement authority of the oversight agencies and policy and regulatory options to improve the sustainability and the TMF capacity of CWS and wastewater systems;
- 3) Identifying statutes that would need to be amended to implement policy options and any legal impediments to implementing specific policy options;
- 4) Developing a strategy regarding the authority, procedures, and resources necessary to intervene and prevent TMF failure of CWS and wastewater systems; and
- 5) Identifying options for generating state and local funds that may be used to directly fund water infrastructure projects and leverage other public and private funds.

At its latest meeting in November, the Task Force voted on several recommendations which included:

- 1) Continuing the work of the Task Force by reauthorizing the task force to meet during the 2020 interim;
- 2) Establishing a new or recapitalizing an existing water and wastewater infrastructure fund to leverage federal grants and loans, assisting challenged utilities with infrastructure planning and asset management, and making direct loans and grants to water and wastewater utilities;
- 3) Conditioning any state loans or grants to public water or wastewater utilities on certain TMF performance benchmarks as established by the appropriate state entity;
- 4) Requiring the development, by the appropriate state entity of **best management practices for PWSs that could be used as standards for the operation and maintenance of those systems** (emphasis added);;
- 5) Requiring the appropriate state entity to **establish a uniform evaluation process to identify challenged public water and wastewater utilities that lack TMF capacity** (emphasis added);
- 6) **Establishing initial and continuing training requirements for all water and wastewater board members, commissioners, and decision makers** (emphasis added) to be administered and enforced by the appropriate state or state-authorized entity;
- 7) **Requiring annual financial audits and reporting, regular rate reviews** (emphasis added), and establishing regular rate adjustment criteria for all public water and wastewater utilities;

- 8) Studying the adoption of a model that would authorize a **new or existing state entity or entities to have jurisdiction over all of Kentucky's water and wastewater utilities to ensure their financial and operational capacities, and establishing parameters for accountability, including oversight of annual utility financial, operations and water loss audits** (emphasis added); and
- 9) Studying the regionalized pooling of resources and professional services, and hiring and qualification criteria for those services, for challenged water and wastewater utilities to more efficiently manage their facilities and meet auditing and reporting standards.

The Energy and Environment Cabinet will continue to serve on the Task Force if the Legislature determines to continue it in 2020. In any case, the Division has recommended to the new administration that the Cabinet convene a workgroup to work on recommendations of the Public Water and Wastewater System Infrastructure Task Force and related issues.