

b. Because of problems with its aging vehicle fleet, it could not further delay its purchase of a truck and has proceeded to purchase a truck from general funds.

c. After failing to procure grant funds to cover the total costs of repairs to a resolve a significant water leak, the District determined that a portion of the Water Loss Reduction Surcharge proceeds should be budgeted for the parts and outside labor required to address such leaks. It has amended its Infrastructure Improvement Plan to provide for a reserve fund to address such repairs.

d. The District proposes to use a portion of the reserve fund to address the unfunded costs associated with repairs of the water leak previously referenced. The repairs in question were performed after the Public Service Commission authorized the Water Loss Reduction Surcharge.

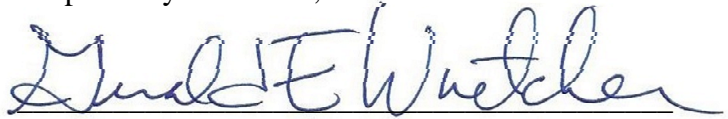
e. In its amended Infrastructure Improvement Plan, the District has sought to provide a more comprehensive plan for the use of surcharge proceeds over the period in which the proceeds are collected.

4. The Amended Infrastructure Improvement Plan will better assist the District and the Commission in determining the most appropriate and productive uses of the Water Loss Reduction Surcharge proceeds

WHEREFORE, Big Sandy Water District respectfully requests leave to amend its original Infrastructure Improvement Plan with the attached Amended Infrastructure Improvement Plan.

Dated: February 10, 2023

Respectfully submitted,

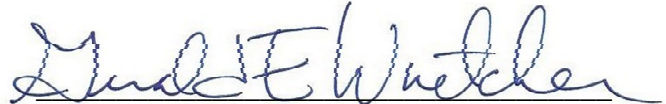


Gerald E. Wuetcher
Stoll Keenon Ogden PLLC
300 West Vine St. Suite 2100
Lexington, Kentucky 40507-1801
Telephone: (859) 231-3017
Fax: (859) 259-3517
gerald.wuetcher@skofirm.com

Counsel for Big Sandy Water District

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, and the Commission's Order of July 22, 2021 in Case No. 2020-00085, I certify that this document was submitted electronically to the Public Service Commission on February 10, 2023, and that there are currently no parties that the Public Service Commission has excused from participation by electronic means in this proceeding



Gerald E. Wuetcher

INFRASTRUCTURE IMPROVEMENT PLAN (AMENDED)

Background. Big Sandy Water District (“the District”) purchases its total water requirements from neighboring water suppliers. As shown in the table below, in each year since 2010 it has been unable to account for 23 percent or more of its total purchased water. During that period, it has experienced an average annual unaccounted water loss rate of 33.4 percent. Simply put, for every two gallons of water it has sold since 2010, the District has lost one gallon of water. In 2021 it lost more than four of every ten gallons of water that it purchased for resale.

Year	Purchased (Gallons)	Water Loss (Gallons)	Water Loss (%)
2010	378,902,000	88,960,000	23.48
2011	375,060,000	120,386,000	32.10
2012	374,610,000	118,358,000	31.59
2013	333,317,000	92,728,000	27.82
2014	359,009,000	111,684,000	31.11
2015	380,610,000	124,737,000	32.77
2016	377,589,000	128,461,000	34.02
2017	353,039,000	105,920,000	30.00
2018	409,693,000	167,013,000	40.77
2019	359,009,000	111,684,000	31.11
2020	413,582,000	183,368,000	44.34
2021	385,288,890	160,485,361	41.65

This high rate of unaccounted-for water adversely affects the District’s finances. In 2021, the District expended approximately \$501,927.80, or approximately 16.61 percent of its operating expenses, to purchase and to transport unaccounted-for water – water that never reaches customer meters. For the same year, it reported an operating loss of \$332,241. For four of the last six years in which the District has filed an annual report with the Public Service Commission, it has reported operating losses.

Approximately 26.65 percent of the cost that the District incurred in 2021 to purchase and transport this unaccounted-for water cannot be recovered through rates for water service. 807 KAR 5:066, Section 6(3) provides that “[e]xcept purchased water rate adjustments for water districts and water associations, and rate adjustments pursuant to KRS 278.023(4), for rate making purposes a utility’s unaccounted-for water loss shall not exceed fifteen (15) percent of total water produced and purchased, excluding water used by a utility in its own operations.” 807 KAR 5:066, Section 6(3) requires the disallowance of approximately \$442,086.81 of purchased power and purchased power costs due to the District’s high level of water loss.

In Case No. 2019-00041,¹ the Public Service Commission investigated the District’s high level of water loss. In its final order, the Commission recommended several actions. These included the implementation of a plan to comply with the meter testing requirements of 807 KAR 5:066, Section 16; the development of a zone metering system; the performance of annual water audits, and the

¹ *Electronic Investigation Into Excessive Water Loss by Kentucky’s Jurisdictional Water Utilities*, Case No. 2019-00041 (Ky. PSC Nov. 22, 2019).

hiring of additional personnel to perform leak detection and water loss prevention activities changes.

The District has acted to reduce its high level of water unaccounted-for water. It has established eleven (11) district meter areas and plans to establish four additional ones before the end of 2023, a series of district meter areas. The District monitors water usage within each of these meter areas. Unusual water usage in a meter area is an indicator of a possible leak or water main break. Once unusual water usage is identified in an area, the District deploys resources to that meter area to pinpoint and repair the leak or break.

The District has also sought to reduce the number of meters currently in service that have not been tested for accuracy within ten (10) years. Inaccurately registering meters are believed to be a major contributor to the District's high water loss. 807 KAR 5:066, Section 16, requires a water utility to periodically test all 5.8-inch water meters so that no meter remains in service longer than ten years between tests. In July 2019, the District advised the Public Service Commission that approximately 2,100 meters were in service for 10 years or longer since last being tested for accuracy. This backlog resulted from the District's limited testing facilities and its lack of personnel. To alleviate the problem and to replace aging meters – the District's last major meter replacement occurred in 2000 - the District purchased 1,100 new meters at a cost of \$216,000. The District financed this purchase in part through the withdrawal of \$100,000 from its depreciation reserve account. As the District's bond covenants required the maintenance of the depreciation reserve account, the District was required the approval of Rural Development ("RD") - the holder of the District's bonded debt. RD authorized the withdrawal of funds on the condition that the District replenish the account as soon as possible. At this time, approximately \$81,665 remains to be redeposited into the depreciation reserve account. At this time, the District has 1,308 meters in service that have been in service for 10 or more years since last being tested for accuracy.

The District has been conducting annual water audits. The first water audit, conducted with the assistance of the University of Kentucky Water Resources Research Institute ("WRRI") and using the methodology set forth in the American Water Works Association M36 Manual, was completed and filed with the Public Service Commission in January 2021. A second audit, also prepared with the WRRI's assistance, was completed in December 2021. The District has committed to conducting a water audit annually.

The District has lacked the funds to hire additional personnel to conduct additional leak detection and water loss prevention activities. It currently has two unfilled full-time positions unrelated to enhanced leak detection and water loss prevention efforts.

Surcharge Proposal. A lack of funding has stymied the District's water loss control efforts. To improve these efforts and obtain a meaningful reduction in water loss, the District applied to the Public Service Commission in Case No. 2022-00044² to assess a surcharge of \$6.15 on each customer's monthly bill for a period of 60 months. Assuming a customer base of 4,800 customers, the proposed surcharge will produce additional annual revenue of \$354,240. The amount of the surcharge is based upon the sum of purchased water expense and purchased power expense that

² *Electronic Application of Big Sandy Water District for an Adjustment of Its Water Rates Pursuant to 807 KAR 5:076, Case No. 2022-00044 (Ky. PSC filed Mar. 25, 2022).*

807 KAR 5:066, Section 3 requires to be disallowed from rate recovery due to excessive unaccounted-for water.

To ensure full transparency and the appropriate use of surcharge proceeds, the District further proposed that following controls be placed on the proposed surcharge:

a. The surcharge will be billed as a separate line item and identified as “Water Loss Detection and Control Program Surcharge.”

b. All surcharge proceeds will be maintained in a separate, interest-bearing account.

c. The District must obtain prior Public Service Commission approval for the use of surcharge proceeds for any expenditure.

d. For each month in which the surcharge is in effect and until all surcharge proceeds are expended, the District must submit to the Public Service Commission monthly activity reports that include a statement of monthly surcharge billings and collections; a monthly surcharge bank statement; a list of each payment from the account, its payee and a description of its purpose; and invoices supporting each payment.

e. The District must submit to the Public Service Commission monthly water loss reports for each month in which the surcharge is in effect and until all surcharge proceeds are expended.

f. With the exception of deposits to District’s depreciation reserve fund to replenish the remaining balance (\$81,665) withdrawn for the purchase of metering equipment in 2020, the District may not use surcharge proceeds for expenses incurred prior to surcharge’s effective date .

g. Each year following the effective date of the surcharge, the District must submit to the Public Service Commission a schedule of the estimated and actual progress of its Water Loss Detection and Repair Program and the estimated and actual surcharge expenditures. These reports will permit the Public Service Commission to annually review the progress of the District’s efforts and determine if changes are required or if the surcharge is no longer required.

h. Should the District fail to reduce its unaccounted-for water loss level to fifteen (15) percent or less of total water produced and purchased, excluding water used by the District in its own operations within 60 months of the effective date, the District may request an extension of the period in which the surcharge may be assessed and collected.

i. Failure to comply with any control placed on the assessment of the surcharge is sufficient basis to terminate the surcharge and to require the refund of all surcharge proceeds in the District’s possession or control and of all proceeds disbursed for expenses or projects not approved by the Public Service Commission.

The proposed surcharge was similar to and consistent with the surcharge that the Commission authorized in Cases No. 2011-00217³ and No. 2018-00376⁴ for Cannonsburg Water District and in Case No. 2019-00119⁵ for Estill County Water District to fund water loss control efforts. The proposal was also consistent with the Water Loss Demonstration Project that the Commission previously conducted in its effort to assist water utilities in their efforts to reduce water loss.⁶

On September 13, 2022, the Public Service Commission issued its decision in Case No. 2022-00044, in which it, among other things, authorized the District to assess a monthly surcharge of \$6.42 on each active meter for a period of 60 months. It found the surcharge was “a reasonable means for Big Sandy District to recover the cost of its efforts in water leak detection and repair in order to reduce the increased expense and lost revenue from unaccounted-for water loss.”⁷ Assuming a customer base of 4,800 customers, the proposed surcharge will produce additional annual revenue of \$369,792, or approximately \$1,848,960 over the period that surcharge is assessed. The Public Service Commission further directed the District to file a Qualified Infrastructure Improvement Plan that provides a detailed spending plan for surcharge proceeds. On November 13, 2022, the District filed with the Public Service Commission tariff sheets reflecting the rules governing the surcharge. On December 16, 2022, the District submitted its Infrastructure Improvement Plan.

Upon further review of its initial Infrastructure Improvement Plan, the District has determined that revisions are required and has submitted this revised plan.

Proposed Initial Expenditures. The District proposes to use surcharge proceeds to make the following expenditures:

³ *Application of Cannonsburg Water District for (1) Approval of Emergency Rate Relief and (2) Approval of the Increase in Nonrecurring Charges*, Case No. 2011-00217 (Ky. PSC Jun 4, 2012).

⁴ *Application of Cannonsburg Water District for A Rate Adjustment for Small Utilities Pursuant to 807 KAR 5:076*, Case No. 2018-00376 (Ky. PSC May 13, 2019).

⁵ *Electronic Application of Estill County Water District No. 1 for a Surcharge to Finance Water Loss Control Efforts*, Case No. 2019-00119 (Ky. PSC Mar. 24, 2020).

⁶ *See, e.g., Adjustment of Rates of North Logan Water District*, Case No. 97-399 (Ky. PSC May 22, 1998); *An Investigation Into the Operations and Management of Mountain Water District*, Case No. 96-126 (Ky. PSC Aug. 11, 1997); *The Notice of Lake Village Water Association, Inc., of a Tariff Amendment Adjusting Rates and Imposing Construction Surcharge*, Case No. 89-075 (Ky. PSC Jan. 29, 1990); *The Application of the Muhlenberg County Water District, A Water District Organized Pursuant to Chapter 74 of the Kentucky Revised Statutes for a General Adjustment of Rates and Revision of Rates*, Case No. 9262 (Ky. PSC Oct. 9, 1985); *The Notice By Lake Village Water Association, Inc. of A Tariff Amendment Adjusting Rates; Notice of Tariff Amendment Imposing A Temporary Special Rule To Limit The Availability of Water Service Connections; Application For A Certificate of Public Convenience and Necessity; Application For Authority To Issue A Promissory Note and Mortgage To the Farmers Home Administration; and Application and Request That It Be Included In the Demonstration Project to Define Excessive Water Loss*, Case No. 9290 (Ky. PSC Dec. 30, 1985)

⁷ Case No. 2022-00044, Order of Sept. 13, 2022 at 19.

Expenditure	Amount
Replenish Depreciation Reserve Fund (1/2020 Withdrawal for Meter Purchase)	\$ 81,665.00
Additional 1,000 Meters	\$216,000.00
Water Listening Device	\$ 5,156.00
Leak Loggers	\$ 13,582.00
Pumps	\$168,000.00
Generator	\$ 89,668.00
Meter Testing Building	\$180,000.00
Meter Testing Bench	\$ 27,815.00
One Truck	\$ 65,000.00
Full-Time Employees (Leak Detection Team) (Annual Wage & Overhead)	\$204,360.00
Repair Reserve Fund	\$400,000.00
	\$1,451,246.00

Replenish Depreciation Reserve Fund. As a condition to RD’s approval of the withdrawal of \$100,000 from the District’s depreciation reserve fund for the purpose of purchasing metering equipment in February 2020, the District must, in addition to the monthly deposits required under its bond ordinances, must redeposit withdrawn funds. Approximately \$81,665 remains to be returned to the fund. The District proposes to refund this amount over a period of five years.

Additional 1,000 Meters. The District proposes to purchase an additional 1,000 meters to replace existing meters and to return the District to compliance with the meter testing requirements of 807 KAR 5:066, Section 16. The District presently plans to purchase these meters over two-year period.

Water Listening Devices and Leak Loggers. The District’s leak detection equipment was purchased in 2005 and has limited capabilities. The District proposes to obtain a more sensitive and accurate acoustical listening device. It also proposes to purchase water loggers to located in meter zones experiencing higher than normal water usage to acoustically detect leaks. This equipment is expected to be purchased within the surcharge’s first year.

Pumps and Generator. The District proposes to purchase ten pumps and one portable generator to ensure system resiliency and continuity of service and to prevent potential water loss due to pumping and power failures. This equipment will be purchased over a three-year period

Meter Bench and Meter Building. The District’s current meter building is poor condition and its meter test bench can test only four meters at one setting. These conditions have contributed to the failure to meet meter testing requirements. The District proposes to either construct a new meter facility or renovate existing facility and to acquire a new test bench capable of testing twelve meters concurrently.

Trucks. The District proposes to purchase one truck for use in leak detection and repair work. The estimated cost for the truck includes a contingency to account for potential increases due to supply chain problems. The District’s current vehicle fleet is old and has significant mileage. The purchase of this vehicles is expected to occur within the first 18 months that the surcharge is in effect.

Additional Employees. The District proposes to hire as soon as possible one full time employee whose sole assignment will be leak detection and repair. The employee is expected to work approximately 40 hours per week at a starting hourly wage of \$15.00. Estimated annual cost of \$40,872, includes federal payroll taxes and employer pension contributions.

Repair Reserve Fund. Once leaks are located, they must be repaired. The District assumes that labor of the repair of leaks will be funded through the District's general fund. However, it currently plans to reserve approximately \$400,000 to cover the cost of materials and outside labor and other services necessary for such repairs. Where feasible, the District will seek other sources of funding, for example, government grants, to address these expenses. The District intends to use funds from the Repair Reserve Fund to cover the materials and outside labor and service costs of a water main stream crossing replacement completed on September 26, 2022. This replacement, whose total cost approximately \$136,989, was necessary to correct a significant leak in a 6-inch main. The District would seek reimbursement for the expenses associated with this stream crossing replacement are not financed from other sources, such as grant funds.

Retaining A Water Loss Specialist. The District may use remaining surcharge funds to contract with a firm specializing in water loss reduction. It has been in discussions with one such firm, Integrity Water and Energy, LLC, to assist its water loss efforts. The contacting firm would assist in designing and implementing the District's water loss reduction program. It would provide training on leak detection techniques and equipment to District employees, assist in the purchase and deployment of GIS software and equipment, and the identification of the geographic coordinates of meters, valves, hydrants, and existing taps. It would also provide guidance and assistance in the expansion of the District's zone meter system.

Depending upon the results achieved and other circumstances, the District may modify its list of proposed expenditures. As previously noted, all expenditures must receive prior Public Service Commission approval. Any potential changes to its current list of expenditures would be address in the District's annual report on the surcharge.