

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF)
MOUNTAIN WATER DISTRICT FOR A) CASE NO. 2022-00366
GENERAL ADJUSTMENT OF WATER)
RATES)

ELECTRONIC APPLICATION OF)
MOUNTAIN WATER DISTRICT FOR A) CASE NO. 2022-00367
GENERAL ADJUSTMENT OF SEWER RATES)

POST-HEARING BRIEF OF
MOUNTAIN WATER DISTRICT

Pursuant to the Commission’s Order of August 18, 2023, Mountain Water District (“Mountain District” or “the District”) submits this Post-Hearing Brief.

Background

Mountain District, a water district organized pursuant to KRS Chapter 74, owns and operates facilities that are used to provide retail water to approximately 16,495 customers in Pike County, Kentucky and wholesale water service to Martin County Water District, Elkhorn City, and Mingo County Public Service District.¹ It also owns and operates facilities that provide sewer service to approximately 2,314 customers in Pike County.² Mountain District’s territory includes the unincorporated areas of Pike County, except those unincorporated served by the cities of Pikeville and Elkhorn City. Mountain District was established in 1986 as the result of a merger of four existing water districts.³

¹ *Report of Mountain County Water District to the Public Service Commission of Kentucky for Water Operations for the Calendar Year Ending December 31, 2022* (“2022 Annual Water Report”) at Ref Pages 27 and 30.

² *Report of Mountain County Water District to the Public Service Commission of Kentucky for Sewer Operations for the Calendar Year Ending December 31, 2022* (“2022 Annual Sewer Report”) at Ref Page 25.

³ *Application for Approval of Merger Between Marrowbone Creek Water District, Shelby Valley Water District, Pond Creek Water District, and John’s Creek Water District*, Case No. 9499 (Ky. PSC June 27, 1986).

Prior to this proceeding, Mountain District last applied for a general adjustment of its rates for water service in Case No. 2014-00342.⁴ On October 9, 2015, the Commission adjusted the water district's rates for water and sewer service and directed an increase in those rates in three phases, the last phase of which occurred on October 10, 2017. Mountain District's sewer rates were increased in December 2018 pursuant to KRS 278.023.⁵ Its water rates have increased twice pursuant to 807 KAR 5:068 since the District's last general rate proceeding.⁶

For each calendar year from 2018 through 2021, Mountain District reported a negative net income but a positive cash flow for its water operations. During this period the District's Board of Commissioners closely monitored the District's financial condition and considered a possible rate adjustment but took no action to adjust the District's rates for water and sewer service. The Board's inaction was in large measure due to the COVID-19 pandemic and its effect on the District's operations. Because of restrictions on the District's operations due to the pandemic and the Commission's suspension of the collection of late payments and disconnection of service, the Board believed that the District's operations in calendar years 2020 and 2021 were not representative of normal utility operations and that applications for rate adjustment should be deferred until the pandemic had abated and a test period more representative of normal utility operations existed. It also placed greater emphasis on the existence of positive cash flow as an indicator of the District's financial condition.

In retrospect, the District acknowledges that its delay in seeking rate adjustments for its water and sewer operations has adversely affected its financial condition and presented

⁴ *Application of Mountain Water District for an Adjustment of Water and Sewer Rates*, Case No. 2014-00342 (Ky. Oct. 9, 2015).

⁵ *Application of the Mountain Water District for A Certificate of Public Convenience and Necessity to Construct A Sewer Improvements Project and An Order Authorizing the Issuance of Securities Pursuant to KRS 278.023*, Case No. 2018-00400 (Ky. PSC Dec. 21, 2018).

⁶ *Electronic Purchased Water Adjustment Filing Of Mountain Water District*, Case No. 2020-00068 (Ky. PSC Apr. 2, 2020); *Electronic Purchased Water Adjustment Filing Of Mountain Water District*, Case No. 2022-00423 (Ky. PSC Jan. 12, 2023).

significant challenges. Subsequently recognizing the need for periodic rate reviews and rate adjustment filings with the Commission, the District's Board of Commissioners on March 31, 2022 adopted a resolution requiring such reviews and filings every three years.⁷

On December 13, 2021, in Case No. 2021-00412,⁸ the Commission ordered Mountain District to apply for a rate adjustment in one year.⁹ In its Order, the Commission noted the length of time since the District's last general rate adjustment, its high level of unaccounted-for water loss, and the District's failure to apply for a surcharge to finance water loss control efforts. It also noted that the District had "been consistently operating with negative net income over the last five years" and expressed concern that "Mountain District is using non-cash items such as depreciation and maintaining a heavy reliance on grant money to fund their operations and meet operating costs."¹⁰

On February 17 and 18, 2023, Mountain District filed applications for a general adjustment of its water and sewer rates. In its application to adjust water rates, the District requested general rates that would generate additional revenues of \$2,097,519, an increase of approximately 25.35 percent over test period revenues.¹¹ It further requested authority to assess a Water Infrastructure Improvement Surcharge of \$5.61 on monthly bills for 36 months to finance its water loss reduction efforts. The proposed surcharge was expected to produce revenues of

⁷ Mountain Water District Board of Commissioners Resolution 22-03-012 (adopted Mar. 31, 2022).

⁸ *Electronic Application of Mountain Water District to Issue Securities in the Approximate Principal Amount of \$5,930,000 for the Purpose of Refinancing Certain Outstanding Obligations of the District Pursuant to the Provisions of KRS 278.300 and 807 KAR 5:001,*

⁹ In response to Mountain District's motions to extend the time for filing, the Commission extended the time for the filing of the applications to February 27, 2023.

¹⁰ *Supra* footnote 8 at 5.

¹¹ Case No. 2022-00366, Application at ¶ 16.

\$3,334,178.¹² In its application to adjust sewer rates, the District requested general rates that would generate additional revenues of \$1,042,196, an increase of approximately 49.73 percent.¹³

Due to filing deficiencies, the Commission did not accept the applications for filing until February 23, 2023. On March 9, 2023, the Commission suspended the effective date of proposed rates for five months until August 24, 2023. After Commission Staff conducted discovery in both matters, the Commission held a hearing on the District's applications on August 16, 2023. It heard testimony from Tammy Olson, Mountain District's General Manager; Carrie Hatfield, Mountain District's Chief Financial Officer; Kevin Lowe, Mountain District's Office Manager; Michael Spears, a certified public accountant who advises the District; and Connie L. Allen, a professional engineer. Following the hearing, post-hearing requests for information were issued to the District, which were timely answered.

Argument

- 1. The proposed water infrastructure surcharge is a reasonable means to address Mountain District's high level of unaccounted-for water loss , is supported by a well-designed expenditure plan, and is consistent with prior Commission decisions on such surcharges.**

In its application, Mountain District requests authority to assess a Water Infrastructure Improvement Surcharge of \$5.61 on monthly bills for 36 months to finance certain water loss control measures, including the installation of facilities to enhance its leak detection capability and the replacement of certain facilities contributing to its excessive water loss. It estimates that the proposed surcharge will produce additional revenue of \$3,334,178, which will be solely for these water loss control measures and will be subject to stringent controls and reporting requirements.

¹² *Id.* at ¶ 35.

¹³ Case No. 2022-00367, Application at ¶ 16.

A. The Water Loss Problem

As shown in the table below, since 2010 the District has been unable to account for 27 percent or more of its total produced and purchased water. For several years during this period, it has experienced an unaccounted-for water rate in excess of 35 percent. For every three gallons of water purchased during those years, the District recorded sales of less than two gallons of water. While the District has achieved some success in reducing its unaccounted-water rate in the last three years, the loss rate for the test period (July 1, 2021-June 30, 2022) remained above 27 percent at 27.43 percent. For calendar year 2022, it was 27.81 percent.

Unaccounted-for Water Loss			
Year	Produced/Purchased (Gallons)	Water Loss (Gallons)	Water Loss (%)
2010	1,645,738,000	496,498,000	30.1687
2011	1,653,438,000	525,175,000	31.7626
2012	1,675,145,000	504,799,000	30.1346
2013	1,631,282,000	489,543,000	30.0097
2014	1,669,637,000	584,268,000	29.4334
2015	1,699,378,000	584,268,000	34.3803
2016	1,674,526,000	612,236,000	36.5617
2017	1,571,189,000	507,821,000	32.3208
2018	1,584,856,000	593,519,000	37.4494
2019	1,577,367,000	581,714,000	36.8780
2020	1,473,077,000	448,128,000	30.4212
2021	1,377,742,000	384,413,000	27.90117
2022	1,371,854,000	381,511,000	27.8099

This high rate of unaccounted-for water adversely affects the District’s finances. In the test period, the District expended approximately \$720,933, or approximately seven percent of its operating expenses, to produce or purchase and to transport unaccounted-for water – water that never reaches customer meters.¹⁴

¹⁴ Case No. 2022-00366, Testimony of Roy B. Sawyers (“Sawyers Testimony”), Exhibit RBS-2. Mr. Sawyers formally retired as the District’s General Manager on June 30, 2023. His successor, Tammy Olson, has adopted his testimony as her own testimony.

Under the Commission’s existing regulations, approximately one-eighth of the costs that the District currently incurs to purchase, treat 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.” Unless the Commission establishes an alternative water loss standard for the District, approximately \$326,694 of its test period expenses related to the purchase and production of water cannot be recovered through the District’s rates for water service.¹⁵

Following the District’s last general rate adjustment proceeding, the Commission noted the District’s high unaccounted-for water loss and encouraged the District to take steps to reduce such loss. In Case No. 2016-00356,¹⁶ the Commission noted that the District was experiencing excessive water loss in the amount of \$351,226 and encouraged the District “to pursue reasonable actions to reduce its water loss.” In Case No. 2020-00068,¹⁷ noting that the cost of the District’s excessive water loss had increased to \$692,741, the Commission again encouraged the District to pursue actions to reduce its water loss and warned that failure to make significant progress in reducing unaccounted-for water loss would result in the Commission pursuing additional action against the District. In Case No. 2021-00412, it again expressed concerns over

¹⁵ Sawyers Testimony, Exhibit RBS-2.

¹⁶ *Application of Mountain Water District for The Issuance of a Certificate of Public Convenience and Necessity to Construct and Finance A System Improvements Project Pursuant to The Provisions of KRS 278.020, KRS 278.300 and 807 KAR 5:001*, Case No. 2016-00356 (Ky. PSC Jan. 31, 2017) at 1-2.

¹⁷ *Electronic Purchased Water Adjustment Filing of Mountain Water District*, Case No. 2020-00068 (Ky. PSC Apr. 2, 2020) at 1-2.

the continued high rate of water loss and encouraged the District to “pursue reasonable actions to reduce its unaccounted-for water loss.”¹⁸

B. The District’s Response

The District has acted to address its water loss problem. It has deployed water leak detection teams for several years. It currently has three two-man detection teams whose mission is to locate water leaks.¹⁹ It has installed variable frequency drive controllers in booster pumping stations.²⁰ It was replaced approximately 16,500 residential customer meters, ensuring that the District has reliable and accurately registering meters and removing one likely source for unaccounted-for water.

To better detect water leaks and ensure more prompt repairs, the District has established 41 district meter areas (“DMA”) throughout its distribution system.²¹ DMAs are divided by pressure zones and are capable of being isolated. DMAs utilize “zone” meters to monitor flow entering the area. The flow is then compared to metered sales to determine area loss. The installation of zone meters and establishment of DMAs provide the District with accurate, real-time flow information that can be used to pinpoint areas of loss, focus repair efforts, and prioritize future projects. The District plans to establish additional DMAs as funding becomes available.²²

The District has also installed telemetry on its zone meters, booster pumps and water storage facilities. This telemetry allows the District to remotely monitor its facilities and alerts the District to possible water line breaks and significant leaks. It also allows the District’s

¹⁸ *Electronic Application of Mountain Water District to Issue Securities in the Approximate Principal Amount of \$5,930,000 for the Purpose of Refinancing Certain Outstanding Obligations of the District Pursuant to the Provisions of KRS 278.300 and 807 KAR 5:001*, Case No. 2021-00423 (Ky. PSC Dec. 13, 2021) at 5.

¹⁹ Sawyers Testimony at 7.

²⁰ *Id.*

²¹ *Id.* at 8.

²² *Id.*

facilities to communicate with each other. For example, a water storage tank can report its water level to a servicing booster pump, allowing the pump to stop pumping when the storage tank has reached maximum level and avoiding lost water through a tank overflow. The District proposes to use surcharge proceeds to purchase and install additional telemetry equipment to provide greater system awareness and to more rapidly respond to changing operational conditions.²³

Much of the District's response to its water loss problem results from the comprehensive Capital Improvement Plan ("Plan") that the District developed jointly with Bell Engineering of Lexington, Kentucky and Environmental Design Consultants of Pikeville, Kentucky.²⁴ This plan analyzed the District's current water loss trends and identified potential capital improvements and corrective actions that are expected to reduce its water losses. These included installing zone meters, establishing DMAs, installing advanced metering infrastructure ("AMI"), replacing residential and commercial meters, developing institutional controls, booster pump station replacement and rehabilitation, water storage tank improvements, water treatment plant improvements, telemetry installation, and replacing problematic mains and service lines. The Plan established priorities and a timeline for completion of these actions.

C. The Proposed Water Loss Control Measures

Using the Plan as a guide for its next phase of water loss control measures, the District proposed in its Application in Case No. 2022-00366 the following measures:

- The replacement of 2,250 customer service lines. Three people would be hired to perform service line replacements. Approximately 750 service line replacements each year for three years. The cost of the replacement includes all materials necessary for the replacement and restoration of area after replacement. Based upon the material of which the District's service

²³ *Id.* at 8, 12.

²⁴ *Id.*, Exhibit RBS-3.

lines are composed and how they were originally installed, the District reasonably suspects its service lines are a major contributor to water loss. Since 2020 the District has replaced, rather than repaired, these service lines to ensure the line is composed of high-quality material and properly installed.

- The purchase and installation of 15 water storage tank/booster pump station telemetry systems. These telemetry systems will permit the District to monitor the water levels at 15 storage tanks to prevent tank overflows and allow communication between a storage tank and its servicing booster station to better coordinate pumping and storage activities. The proposal also includes the installation of security fencing for booster pumping stations and water storage tanks and the construction of or maintenance on tank access roads.

- The replacement of two water main segments that are subject to frequent leaks.
- The replacement of three booster pump stations and four pressure-reduced valve stations.

- The purchase of several vehicles and equipment to replace service lines and the perform other construction.

- The addition of one employee to the District's leak detection force.²⁵

The District estimates these measures will cost \$3,334,718 and take three years to perform. A more detailed description of these measures and their cost is set forth in the District's Expenditure Plan, a copy of which is attached to this Brief as Exhibit 1. To acquire the necessary equipment and facilities quickly, the District is prepared to borrow the funds necessary for the listed items, using the revenue stream generated by the surcharge as a guarantee for payment of such loan.²⁶ The District believes that the earlier the equipment is installed and operational, the

²⁵ This employee is included as one of the four employees referred to Exhibit RBS-4, Item 13A.

²⁶ Sawyers Testimony at 13.

more quickly water loss can be reduced and the savings for this reduction can be used to assist the District in other areas.²⁷

D. Proposed Surcharge is Consistent with Past Commission Decisions

The Commission has found on several occasions that the use of a surcharge to fund water infrastructure improvements designed to reduce unaccounted-for water is appropriate and should be encouraged. In its detailed examination of water loss among Commission-regulated water utilities, the Commission found that water utilities suffering significant water loss should be permitted to assess a qualified infrastructure improvement surcharge to fund infrastructure improvement and replacement.²⁸ It has noted that without surcharges to fund water loss control efforts, “the adjustments required to be made to comply with the 15 percent line-loss limitation in 807 KAR 5:066, Section 6(3), could severely restrict cash flow and could impair a water district's ability to make the necessary action to focus on its leak detection and repair.”²⁹ It recently found that “a monthly surcharge is a reasonable means . . . to recover the cost of . . . efforts in water leak detection and repair in order to reduce the increased expense and lost revenue from unaccounted-for water.”³⁰ Since 2019 the Commission has authorized water loss control surcharges for at least 19 water utilities. In most of these cases, the water utility had not presented a capital improvement plan or a detailed discussion of the measures that it intended to

²⁷ *Id.*

²⁸ *Electronic Investigation into Excessive Water Loss by Kentucky's Jurisdictional Water Utilities*, Case No. 2019-00041 (Ky. PSC Nov. 22, 2019), Appendix L at 24-25.

²⁹ *Electronic Application of Union County Water District for an Alternative Rate Adjustment*, Case No. 2022-00160 (Ky. PSC May 5, 2023) at 19.

³⁰ *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 Sep. 13, 2022) at 19.

implement.³¹ In several instances, the Commission had authorized a water utility to assess surcharge for water loss control efforts although the utility had not requested the surcharge.³²

The District has taken the initiative to address its long-standing water loss problem. It has a record of making system improvements designed to reduce unaccounted-for water loss. It has, with the assistance of outside consultants, developed a detailed capital improvement plan setting forth established priorities and a timeline for their completion. It has further presented the Commission with a detailed and realistic plan for the use of surcharge proceeds that is consistent with its capital improvement plan and contains a reasonable explanation for each proposed expenditure.

As the Commission has recognized in other proceedings, measures necessary to reduce water loss require adequate funding. Funding the proposed measures out of the District's general rates is not viable. In light of recent weather-related events in eastern Kentucky and its prior reluctance to apply for rate adjustments, the District has limited financial resources. A significant and immediate injection of funds is necessary to implement the next phase of the District's water loss control program. Such an injection is not readily available through the ratemaking process. The requested funds are generally for future uses. The District's rates are based upon a historical test period. Furthermore, the cost of capital expenditure is generally recovered through depreciation and that recovery generally spans the life of the asset.

The District recognizes and agrees that stringent reporting requirements and strict use limitations should be placed on surcharge proceeds. In its proposed surcharge tariff, the District

³¹ See, e.g., *Electronic Application of McKinney Water District for a Rate Adjustment Pursuant to 807 KAR 5:076*, Case No. 2022-00400 (Ky. PSC Sep. 1, 2023).

³² See, e.g., *Electronic Application of Hyden-Leslie County Water District for a Rate Adjustment Pursuant to 807 KAR 5:076*, Case No. 2020-00400 (Ky. PSC Nov. 6, 2020); *Electronic Application of South Hopkins Water District for an Alternative Rate Adjustment*, Case No. 2022-00122 (Ky. PSC Feb. 14, 2023).

has proposed such controls and reporting requirements that are at least as stringent as those the Commission has ordered in earlier proceedings.³³

Finally, the District's recent successes in reducing water loss should not be considered as a basis for denying the proposed surcharge. While the District has reduced its water loss to 22 percent during the first six months of this year, there is not yet evidence to suggest that these results will continue or be permanent. Given the significant challenges that have contributed to the District's long-standing struggle with unaccounted-for water loss, additional efforts will likely be needed to achieve an acceptable water loss level and then maintain its water loss at an acceptable level. It should not be punished for the success of its recent efforts.

2. Given the unique physical challenges that Mountain District's distribution system faces, a 22 percent unaccounted-for water loss standard for ratemaking purposes is more reasonable than the "one size fits all" standard set forth in 807 KAR 5:066, Section 6(3).

During the test period, Mountain District experienced unaccounted-for water loss of 27.43 percent. 807 KAR 5:066, Section 6(3), provides that "[e]xcept for 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." It requires a disallowance of test period expenses of \$326,694 associated with purchased water, purchased power and chemical expense.³⁴

807 KAR 5:066, Section 6(3), however, allows for the use of an alternative level of reasonable unaccounted-for water loss.³⁵ Ms. Allen, a professional engineer, testified that, based

³³ Sawyers Testimony at 10-11; Case No. 2022-00366, Application, Exhibit 3.

³⁴ Sawyers Testimony, Exhibit RBS-2.

³⁵ "Upon application by a utility in a rate case filing or by separate filing, or upon motion of the commission, an alternative level of reasonable unaccounted-for water loss may be established by the commission. A utility proposing an alternative level shall have the burden of demonstrating that the alternative level is more reasonable than the level prescribed in this section."

upon the unique conditions that the District operates, 22 percent of total water produced and purchased is a more reasonable standard for the District and should be used for ratemaking purposes.³⁶ She noted that the District's service area differs significantly from most other water utilities and its service population is unique.

The District's system covers a significantly large area and is hydraulically complex. It is comprised of over 1,000 miles of water main, approximately 190 miles of service line, approximately 16,500 active meter installations, 41 zone meters, 42 main line pressure regulator stations with incoming pressures ranging from 100 pounds per square inch ("psi") to 220 psi and outgoing pressures ranging from 100 psi to 325 psi, 108 water storage tanks ranging in capacity from 1,500 gallons to 1,000,000 gallons with total storage capacity of approximately 8,500,000 gallons, and 137 booster pumping stations.³⁷ According to Ms. Allen, the District has 3.4 times as many customers as the average Commission regulated water utility, 2.6 times as much line in the ground and an incomparable number of pump stations and tanks.³⁸

The District's system is also located in an area that has an extremely challenging topography. The difference between its lowest elevation point and its highest elevation point is over 2,000 feet.³⁹ Few, if any, water utilities under the Commission's regulation are subject to such variances. The District has multiple pressure zones which require operating at higher water pressures and results in frequent occurrences of water hammer, which tends to weaken water lines and cause frequent leaks and breaks.⁴⁰

While the District serves a large area, much of its territory is sparsely populated. The lower customer density means fewer people in that area who may discover and report water

³⁶ Case No. 2022-00366, Testimony of Connie L. Allen ("Allen Testimony") at 8.

³⁷ Sawyers Testimony at 5.

³⁸ Allen Testimony at 8.

³⁹ Sawyers Testimony at 6.

⁴⁰ *Id.*; Allen Testimony at 8.

leaks. Furthermore, the rough and difficult terrain makes it very difficult to inspect its lines in remote areas and to discover water leaks and main breaks.⁴¹

Further compounding these problems is the lack of adequate records. Several portions of the District's distribution system were constructed in the 1960s by the District's predecessors and are near or at the end of their expected service life. These mains are difficult to locate as the District's predecessors failed to maintain complete or accurate records. The District has also discovered in recent years a large number of older water mains that were not installed in conformance with the best construction practices.⁴²

Ms. Allen suggested in an exhibit to her testimony that applying the same water loss standard to Mountain District as is applied to most other Commission-regulated water utilities, which do not face as rigorous or difficult conditions, is unfair and unreasonable.⁴³ She noted that utilities operating under less demanding conditions are failing to meet the 15 percent standard. Examining Mountain District's water loss data since 2010, she stated that this data suggests that filtering out the causes of water loss over which the District has limited control demonstrates that a more reasonable water loss standard is 22 percent.⁴⁴

Applying a different water loss standard does not eliminate the District's incentive to reduce unaccounted-for water loss or remove the penalty for excessive water loss. If the proposed 22 percent standard is applied in this proceeding, the District will still be subject to a disallowance of approximately \$142,715 in test period expenses associated with purchased water, purchased power and chemical expense.⁴⁵ Furthermore, the savings resulting from

⁴¹ Sawyer Testimony at 6.

⁴² *Id.*

⁴³ Allen Testimony, Exhibit CLA-8 at 2.

⁴⁴ Allen Testimony at 8; Exhibit CLA-8 at 1-2

⁴⁵ Approximately 5.43 percent of Purchased Water Expense, Purchased Power Expense and Chemical Expense will be disallowed.

additional reductions in water loss below the proposed 22 percent standard will continue to encourage the District to implement and practice reasonable water loss control measures.

At a minimum, the Commission should consider establishing the requested alternative standard for purposes of this proceeding and review how that standard has functioned when the District applies for its next general rate adjustment in three years. Such an action would address the unique conditions that Mountain District currently faces and still allow the Commission the flexibility to revisit the issue in the future and to apply a different standard should the existing circumstances warrant.

In summary, the continued application of the 15 percent water loss standard assumes that the Mountain District operates under the same or similar conditions as most other Commission-regulated water utilities. The evidence presented shows otherwise. Mountain District operates under significant constraints over which it has very limited control and that severely limit its ability to meet the existing water loss standard. Applying the 15 percent standard to Mountain District under such circumstances is unfair and discriminatory. The Commission should consider the difficult environment in which the Mountain District operates and apply a 22 percent unaccounted-for water loss standard when establishing the District's rates in this proceeding.

3. Mountain District's use of a 55-year service life for its water distribution and transmission mains is reasonable and is supported by substantial evidence.

In its Application, Mountain District proposed an adjustment of \$129,317 to test period depreciation expense of \$2,568,111 to reflect the use of a 55-year service life for its water distribution and transmission mains.⁴⁶ While the District recorded depreciation expense during the test period using a 62.5-year service life for such mains, it has determined that a 55-year

⁴⁶ Mountain Water District's Amended Response to Commission Staff's First Request for Information, Question 14 (filed Aug. 18, 2023).

service life was more appropriate based upon Ms. Allen’s recommendation. Ms. Allen bases her recommendations on an American Water Works Association (“AWWA”) study and the work of the Ductile Iron Pipe Research Association.⁴⁷

The Commission currently calculates depreciation expense for an asset using the National Association of Regulatory Utility Commissioners’ (“NARUC”) *Depreciation Practices for Small Water Utilities* (“the NARUC Guide”), a guide intended to assist state regulatory commissions in establishing depreciation rates for small water utilities. This guide was published in 1979 and has never been revised or updated. Since 2012 the Commission has extensively relied upon the NARUC Guide to establish the service life for water utility assets.⁴⁸ The NARUC Guide establishes a range of average service lives for water utility assets. “When no evidence exists to support a specific life that is inside or outside of the NARUC Study ranges, the Commission has historically used the midpoint of the NARUC Study depreciation ranges to depreciate water assets.”⁴⁹ For water transmission and distribution mains, this range is between 50 and 75 years,⁵⁰ and the range midpoint is 62.5 years.

As set forth in her testimony, Ms. Allen recommends a 55-year service life based upon the findings of the American Water Works Association (“AWWA”) report entitled “Buried No Longer: Confronting America’s Water Infrastructure Challenge,” which was published in 2012 and contains the results of its research project on water infrastructure replacement.”⁵¹ In that report, AWWA provides average estimated service lives by pipe material. AWWA assigned

⁴⁷ Allen Testimony at 11.

⁴⁸ A review of Commission Orders referencing the NARUC Guide indicates that the Commission began consistently referring to the NARUC Guide as a basis for evaluating a water utility’s assignment of service lives in December 2012. See *Application of Pendleton County Water District For An Adjustment In Rates Pursuant To the Alternative Rate Filing Procedure For Small Utilities*, Case No. 2012-00433 (Ky. PSC Dec. 20 , 2012); *Application of Crittenden-Livingston Water District For An Adjustment In Rates Pursuant To the Alternative Rate Filing Procedure For Small Utilities*, Case No. 2012-00390 (Ky. PSC Dec. 20 , 2012).

⁴⁹ *Electronic Application of Bath County Water District for a Rate Adjustment Pursuant to 807 KAR 5:076*, Case No. 2022-00404 (Ky. PSC Aug. 10, 2023).

⁵⁰ NARUC Guide at 11.

⁵¹ Allen Testimony, Exhibit CLA-13.

polyvinyl chloride (“PVC”) pipe **an average service life of 55 years** regardless of installation conditions.⁵² For medium-sized utilities in the South (as the District is categorized), ductile iron pipe installed in “benign” conditions has a 105-year average service life; installations in “harsh” conditions have **service lives of 55 years**.⁵³

In the technical memorandum that accompanied her written testimony,⁵⁴ Ms. Allen notes that approximately 80 percent of the District’s water lines are PVC pipes. Based upon the AWWA Report’s findings, these lines should have a service life of 55-years.

As to the remaining 20 percent of the District’s water mains, which are ductile iron pipe, Ms. Allen notes in her testimony that “[h]arsh conditions include, among other things, those conditions favorable for galvanic corrosion.”⁵⁵ Citing a 2018 publication of the Ductile Iron Pipe Research Association (“DIPRA”),⁵⁶ she further notes that certain soils may exhibit the resistivity that enables galvanic corrosion. Among the factors which promote harsh conditions in soil are cinders, mine waste, peat bog, landfill, fly ash and coal.

In her testimony, Ms. Allen noted that such soil is common in Mountain District’s territory and how the District’s water lines would be subjected to “harsh conditions”:

[T]he vast majority of the ductile iron pipe in the system was installed as part of a Kentucky Department of Highways utility relocation or an Abandoned Mine Lands project. In the former case, the line would likely be installed just inside, or just outside, the highway right-of-way. The latter case results in trenches cut in soils laden with coal mining waste and cinders. Numerous reports have attributed increases in resistivity of soils to chlorides (salts) applied to roads in icy conditions. Chloride is an ion known to cause corrosion and effects are seen as much as 100 feet away from the application.

⁵² *Id.* at 7.

⁵³ *Id.*

⁵⁴ Allen Testimony, Exhibit CLA-15

⁵⁵ Allen Testimony at 12.

⁵⁶ *Id.*, Exhibit CLA-14. Ductile Iron Pipe Research Association, *The Design Decision Model* (May 2018).

Decades of transporting coal along Pike County roads and highways have left coal cinders covering the shoulders of the roads. The chloride and the cinders, along with the in-situ corrosive soils which make up the majority of water and sewer line trenches, constitute the “harsh conditions” DIPRA contends that reduce the service life of iron pipe.⁵⁷

She thus concludes that a 55-year service life is also appropriate for the District’s ductile iron distribution and transmission mains.

The proposed use of a 55-year service life is supported by substantial evidence. Ms. Allen is a licensed professional engineer in Kentucky and Ohio.⁵⁸ She has performed engineering services for several water utilities in Kentucky and has been involved with the design and construction of water and sewer systems. Given her training and experience, she is competent to render an opinion on the appropriate service life for the District’s water mains. Her opinion relies upon publications that are generally recognized within the water industry and based upon recent research.

Moreover, Ms. Allen’s recommendation falls squarely within the range established by the NARUC Guide. The NARUC Guide provides that the average service life for a water transmission and distribution mains is between 50 and 75 years.⁵⁹ Ms. Allen recommends a service life of 55 years. Moreover, the NARUC Guide expressly provides that its recommended average service “lives are intended as a guide; longer or shorter lives should be used where conditions warrant.”⁶⁰ Obviously, soil conditions must be taken into account as well as the topography and environment of the area in which the mains are situated. Ms. Allen has taken those factors into account in reaching her recommendation. A mechanical application that relies

⁵⁷ Allen Testimony at 12.

⁵⁸ Allen Testimony, Exhibit CLA-1.

⁵⁹ NARUC Guide at 11.

⁶⁰ *Id.*

solely upon the midpoint of the recommended range does not consider those factors and would be contrary to the NARUC Guide's guidance.

Accepting the District's proposed adjustment is consistent with prior Commission decisions. The Commission has applied the midpoint of the NARUC Guide's recommended range **in the absence of evidence supporting a specific life**. In this proceeding, specific evidence in the form of expert testimony, buttressed by recent and credible water industry studies, has been presented to support the use of a 55-year service life.

Accordingly, the Commission should accept the proposed adjustment to increase the water operations' depreciation expense by \$129,319.

4. Mountain District's proposed adjustment to wage and salaries expense and to contractual services expense for authorized employee wage increases to maintain a quality workforce and ensure the provision of adequate, efficient and reasonable service is known and measurable.

Mountain District proposes adjustment to Salaries and Wages – Employees expense and Contractual Services – Manpower expense to reflect authorized wage increases that will be implemented upon the issuance of a final decision in the District's applications.⁶¹ The Commission has questioned whether the proposed adjustments are known and measurable.⁶²

The District has two classes of employees. The wages and salaries of permanent employees are reflected in Salaries and Wages – Employees expense. The District also employs several persons through temporary employment agencies. Using temporary employees allows the District to determine whether a person is a good fit for the District before the District makes an offer of permanent employment as well as allowing the District to avoid many of the human

⁶¹ Case No. 2022-00366, Application, Exhibit 6, References B and H; Case No. 2022-00367, Application, Exhibit 6, Reference C.

⁶² VTR 8/16/2023 10:16:40 – 10:17:10; 14:58:00 – 14:58:42

resource functions involved in recruiting and accessing new employees. The wages for these employees are reflected in Contractual Services – Manpower expense.

To attract and retain good employees, especially in the highly competitive labor market that exists today, the District must pay competitive wages. Mountain District has surveyed the local labor market and determined that its wages are less competitive than other firms. It has experienced several instances in which it has expended funds to train employees in various positions only to have those employees leave the District’s employment for other firms that pay higher wages.⁶³ In 2021 the District was losing an average of 1.33 employees per month. This turnover rate increased to 2.0 employees in 2022.⁶⁴

To improve employee retention and recruitment, the District’s Board of Commissioners on October 17, 2022 adopted a resolution committing the District to increase the wage rates for its permanent employees by 10.86 percent, the salaries of its salaried employees by 4.88 percent, and the wages of its temporary employees by 8.33 percent.⁶⁵ The District estimated the total annual cost of these wage and salary increase to be \$324,062, with \$246,852 directed to employees of the District’s water operations and \$77,210 directed to employees of the District’s sewer operations.⁶⁶ Because the District lacks the financial resources to immediately increase wages and salaries, the resolution provided that these wage and salary increases were to become effective upon the Commission’s approval of new rates for the District’s water and sewer services.

⁶³ Case No. 2022-00366, Mountain District’s Response to Commission Staff’s First Request for Information, Question 31, Attachment 31; VTR 8/16/2023 10:14:30 – 10:15:30

⁶⁴ Case No. 2022-00366, Mountain District’s Response to Commission Staff’s First Request for Information, Question 31, Attachment 31.

⁶⁵ Mountain Water District Board of Commissioners Resolution 22-10-001 (found at Case No. 2022-00366, Mountain District’s Response to Commission Staff’s Second Request for Information, Question 31, Attachment 2-1h, pages 3-4).

⁶⁶ *Id.*

The proposed increases are known and measurable. The District's Board has committed to the wage and salary increase and views its resolution as creating a legal and moral obligation to the District's employees. As a practical matter, the District has no option but to implement the wage and salary increases. Regardless of the outcome of this proceeding, the District's failure to implement the announced wage and salary increases will likely result in additional employee departures, greater difficulty in attracting quality employees, and a decline in service quality. While the District has requested rates that would allow for the implementation of those wage and salary increases, it recognizes and is prepared to take other actions, such as obtaining a loan or filing another rate adjustment application, to implement the increases if rates sufficient to produce the requested revenue requirement are not authorized.

Even if the Commission's "known and measurable" standard requires that the announced wage and salary increases be implemented prior to being eligible for rate recovery, that standard does not prevent the Commission from considering the circumstances in this proceeding and permitting recovery of the costs associated with the announced increases to ensure the District has "fair, just and reasonable rates" as KRS 278.030 requires. In *Kentucky Public Service Commission v. Com. ex rel. Conway*, 324 S.W.3d 373, 382 fn. 23 (Ky. 2010), addressing a similar argument regarding the Commission's policy of prohibiting single issue rate making, the Kentucky Supreme Court stated;

To the extent that the PSC has established its own policy against "single-issue ratemaking," as suggested by the Attorney General's brief, it appears that the PSC would have discretion whether to retain or discard such a policy or determine whether it has been violated under the facts of a particular case given its plenary ratemaking authority circumscribed primarily by its duty to ensure that rates are "fair, just and reasonable" and the lack of clear statutory prohibition against "single issue ratemaking."

KRS Chapter 278 contains no statutory requirement that expenses must be known and measurable.

To allay the Commission's concerns regarding the proposed adjustment, Mountain District will accept conditions on any authorized rates containing the proposed adjustment that: (1) require the District to furnish proof within 60 days of the issuance of a final decision that the announced wage and salary increases have been implemented; (2) require periodic filings with the Commission to demonstrate the announced wage and salary increases remain in effect; and (3) require the reduction of the authorized rates to lower levels reflecting the removal of the proposed adjustment and the refund to customers of the difference between the two rate levels should the District fail to produce adequate proof of implementation or to continue to pay the increase wage and salary rates for at least one year following the issuance of the Commission's decision. Given the Commission's plenary ratemaking authority to establish fair, just and reasonable rates, such conditions would be permissible. These conditions would also ensure the announced wage and salary increases are implemented.

5. When determining Mountain District's revenue requirement, the Commission should use the methodology that will produce the requested revenue requirement.

To determine its revenue requirement, Mountain District has used methodologies that vary from those the Commission has historically used. For example, in Case No. 2022-00366, the District's revenue requirement calculations did not include a three-year average of the District's annual principal payments on long-term debt. In Case No. 2022-00367, the District's revenue calculations include principal payments on long-term debt but did not use a three-year average of principal and interest payments. It determined that the revenue requirement resulting from these methodologies would provide adequate revenues to meet operating expenses, service

existing debt and provide adequate working capital while not imposing an onerous burden on its ratepayers.⁶⁷

KRS 278.030 requires the Commission to establish fair, just, and reasonable rates for regulated utilities but does not require the Commission to accept any particular methodology to determine a utility's revenue requirements. While the District has proposed a methodology that differs from that the Commission has historically used, the District does not oppose or object to the Commission's use of its standard methodology to determine the appropriate revenue requirement if the use of such methodology produces a revenue requirement that is more favorable to the District than the District's proposed methodology but requests that the Commission establish rates that will generate revenues no greater than those requested in District's applications.

Conclusion

The evidence in the record supports the requested level of revenue from water and sewer rates set forth in Mountain District's application for rate adjustment and supports the need and reasonableness of the proposed Water Infrastructure Improvement Surcharge. Accordingly, Mountain District respectfully requests an Order from the Commission that authorizes the collection of the proposed Water Infrastructure Improvement Surcharge and the District's immediate use of the proceeds from such surcharge and that the Commission approve rates for water and sewer service that will generate the requested level of revenue from water and sewer rates sought in its applications. For the reasons previously set forth in its Motions of August 10, 2023, Mountain District further requests that the Commission expedite its review of the record in these proceedings and issue a final decision in each matter **no later than October 2, 2023**.

⁶⁷ The District recognized and acknowledged these differences in its applications and provided a revenue requirements calculation using its own methodology **and** the methodology the Commission has historically used. See Case No. 2022-00366, Application, Exhibit 11; See Case No. 2022-00367, Application, Exhibit 10.

Dated: September 7, 2023

Respectfully submitted,



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Counsel for Mountain Water District

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, and the Public Service Commission's Order of July 22, 2021 in Case No. 2020-00085, I certify that this document was transmitted to the Public Service Commission on September 7, 2023 and that there is currently no party that the Public Service Commission has excused from participation by electronic means in this proceeding.



Gerald E. Wuetcher

EXHIBIT 1

**MOUNTAIN WATER DISTRICT
PROPOSED WATER INFRASTRUCTURE IMPROVEMENT SURCHARGE**

ITEM NO.	ITEM	DESCRIPTION	IN-HOUSE CONST.	CONTRACTOR OR VENDOR	COST ESTIMATE
1 THRU 6	SYSTEM WIDE CUSTOMER SERVICE LINE REPLACEMENT	PROPOSE TO REPLACE APPROX. 750 SERVICE LINES PER YEAR FOR A THREE YEAR PERIOD. A TOTAL OF 2,250 CUSTOMER SERVICE LINE TO ASSIST IN COMBATING WATER LOSS	X		\$285,298.50
7	STONE BACKFILL	STONE UTILIZED IN CUSTOMER SERVICE LINE REPLACEMENT		COST ESTIMATE BASED ON CONTRACTOR PURCHASE OF A SMALL DUMP TRUCK IN-HOUSE WILL ASSIST IN LOWERING THE COST OF THE STONE BACKFILL	\$270,000.00
8	PAVEMENT REPLACEMENT	PAVEMENT REPLACEMENT UTILIZED IN CUSTOMER SERVICE LINE REPLACEMENT		X	\$270,000.00
9	WATER STORAGE TANK TELEMETRY SYSTEM - STANDARDIZING SYSTEM	INSTALL TELEMETRY TO MONITOR TANK LEVELS FOR LEAKS OR LINE BREAKS, CONTROL TANK LEVELS TO AVOID OVERFLOWING, INSTALL 6' BARBED WIRE SECURITY FENCING TO PROTECT EQUIPMENT, PREVENT THEFT, DETER DOMESTIC TERRORISM, HYDROSEEDING, AND PERFORM TANK ACCESS ROAD MAINTENANCE	X		\$284,640.00
10	BOOSTER PUMP STATION TELEMETRY SYSTEM - STANDARDIZING SYSTEM	INSTALL TELEMETRY TO MONITOR TANK LEVELS FOR LEAKS OR LINE BREAKS, CONTROL TANK LEVELS TO AVOID OVERFLOWING	X		\$64,500.00
11	BOOSTER PUMP STATION REPLACEMENT	LONG FORK, GRAVEYARD, FOREST HILLS	X		\$190,000.00
12	PRESSURE REDUCING VALVE STATION REPLACEMENT	WIDOW'S BRANCH, BLACKBERRY #2, LYNNTROUGH, DORTON PITSTOP	X		\$60,000.00
13	STAFF - 4 LABORERS @ \$14.00 PER HOUR, ALL BENEFITS INCLUDING 26.95% RETIREMENT, ALONG WITH A 3% SALARY INCREASE IN THE 2ND AND 3RD YEAR, BASED ON A 40 HOUR WORK WEEK	SYSTEM WIDE	X		\$590,523.04
14	VEHICLES / EQUIP. - 1 3500 SERIES UTILITY TRUCK, 1 MINI-EXCAVATOR, 1 DUMP TRUCK, 1 SMALL DOZER, 4 1500 SERIES TRUCKS, 1 UTV SIDE BY SIDE, 1 TOWABLE AIR COMPRESSOR, 1 2 1/2" HAMMER BORE, 3 PULL BEHIND TRAILERS, MISC. HAND TOOLS & EQUIPMENT	SYSTEM WIDE		X	\$572,500.00
15	WATER MAIN LINE REPLACEMENT - CONTRACTOR	REPETTIVE LEAKS - BURNING FORK		X	\$207,010.00
16	WATER MAIN LINE REPLACEMENT - CONTRACTOR	REPETTIVE LEAKS - US 460 (OASIS PAVN SHOP)		X	\$212,090.00
17	MISCELLANEOUS EASEMENTS / PERMITS	MISCELLANEOUS EASEMENTS / PERMITS		X	\$25,000.00

ESTIMATED COST \$3,031,561.54
10% CONTINGENCY \$303,156.15
TOTAL ESTIMATED COST \$3,334,717.69

**MOUNTAIN WATER DISTRICT
PROPOSED WATER INFRASTRUCTURE IMPROVEMENT SURCHARGE**

ITEM NO.	PROJECT DESCRIPTION	UNIT	QUANTITY	COST PER ITEM	TOTAL COST PER ITEM	COST ESTIMATE
1	150 - 3/4" CUSTOMER SERVICE LINE TOTAL REPLACEMENT FROM MAINLINE TO THE BASE					
A	3/4" X 4" BRASS SERVICE SADDLE	EA	100	\$34.15	\$3,415.00	
B	3/4" X 6" BRASS SERVICE SADDLE	EA	75	\$50.90	\$3,817.50	
C	3/4" X 8" BRASS SERVICE SADDLE	EA	50	\$70.00	\$3,500.00	
D	3/4" X 10" STEEL SERVICE SADDLE	EA	25	\$47.75	\$1,193.75	
E	3/4" COMPRESSION CORPORATION STOP	EA	150	\$34.75	\$5,212.50	\$25,378.25
F	3/4" 250 PSI POLYETHYLENE SERVICE LINE	LF	11,250	\$0.45	\$5,062.50	
G	3/4" SERVICE LINE INSERT	EA	300	\$0.89	\$267.00	
H	3/4" BRASS COUPLING	EA	150	\$19.40	\$2,910.00	
2	200 - REPLACEMENT OF DETERIORATED 3/4" METER BASE W/ REGULATOR & METAL LID					
A	3/4" COMPLETE METER BASE W/ LID	EA	200	\$422.18	\$84,436.00	\$84,436.00
3	1,950 - 3/4" CUSTOMER SERVICE LINE REPLACEMENT					
A	3/4" 250 PSI POLYETHYLENE SERVICE LINE	LF	146,250	\$0.45	\$65,812.50	
B	3/4" SERVICE LINE INSERT	EA	3,900	\$0.89	\$3,471.00	
C	3/4" BRASS COUPLING	EA	1,950	\$19.40	\$37,830.00	\$107,113.50
4	75 - 1" CUSTOMER SERVICE LINE TOTAL REPLACEMENT FROM MAINLINE TO THE BASE					
A	1" X 4" BRASS SERVICE SADDLE	EA	40	\$34.15	\$1,366.00	
B	1" X 6" BRASS SERVICE SADDLE	EA	20	\$50.90	\$1,018.00	
C	1" X 8" BRASS SERVICE SADDLE	EA	10	\$70.00	\$700.00	
D	1" X 10" STEEL SERVICE SADDLE	EA	5	\$47.75	\$238.75	
E	1" COMPRESSION CORPORATION STOP	EA	75	\$52.50	\$3,937.50	\$12,815.50
F	1" 250 PSI POLYETHYLENE SERVICE LINE	LF	7,500	\$0.50	\$3,750.00	
G	1" SERVICE LINE INSERT	EA	150	\$0.96	\$144.00	
H	1" BRASS COUPLING	EA	75	\$22.15	\$1,661.25	
5	75 - 1" CUSTOMER SERVICE LINE REPLACEMENT					
A	1" 250 PSI POLYETHYLENE SERVICE LINE	LF	7,500	\$0.50	\$3,750.00	
B	1" SERVICE LINE INSERT	EA	150	\$0.96	\$144.00	\$5,555.25
C	1" BRASS COUPLING	EA	75	\$22.15	\$1,661.25	
6	2" ENCASMENT FOR CREEK CROSSINGS					
A	2" POLYETHYLENE SERVICE LINE	LF	20,000	\$2.50	\$50,000.00	\$50,000.00
7	STONE BACKFILL					
A	\$55345 FOR STONE BACKFILL IN 2021 FOR 531 WATER LINE REPAIRS AVERAGING \$104.23 PER REPAIR	EA	2,250	\$120.00	\$270,000.00	\$270,000.00
8	PAVEMENT REPLACEMENT					
A	\$55,300 FOR PAVEMENT IN 2021 FOR 531 WATER LINE REPAIRS AVERAGING \$104.14 PER REPAIR	EA	2,250	\$120.00	\$270,000.00	\$270,000.00

**MOUNTAIN WATER DISTRICT
PROPOSED WATER INFRASTRUCTURE IMPROVEMENT SURCHARGE**

ITEM NO.	PROJECT DESCRIPTION	UNIT	QUANTITY	COST PER ITEM	TOTAL COST	COST ESTIMATE	
9 WATER STORAGE TANK TELEMETRY SYSTEM - STANDARDIZING SYSTEM							
A	TELEMTRY W/ LCD INTERFACE & SOLAR PANELS TO MONITOR & CONTROL WATER STORAGE TANKS	EA	15	\$2,776.00	\$41,640.00		
B	MODEM	EA	15	\$600.00	\$9,000.00		
C	BATTERY	EA	15	\$200.00	\$3,000.00		
D	OVERSIZE SOLAR PANELS / LARGER POWER TRANSMITTER	EA	6	\$1,000.00	\$6,000.00		
E	MISCELLANEOUS PARTS	LS	15	\$1,000.00	\$15,000.00	\$284,640.00	
F	6' BARBED WIRE SECURITY FENCING W/ DOUBLE GATE	EA	15	\$11,000.00	\$165,000.00		
G	TANK ACCESS ROAD MAINTENANCE	COST WILL BE COVERED UNDER ITEM NO. 14					
H	HYDROSEEDING	EA	15	\$3,000.00	\$45,000.00		
10 BOOSTER PUMP STATION TELEMETRY SYSTEM - STANDARDIZING SYSTEM							
A	TELEMTRY W/ LCD INTERFACE TO MONITOR & CONTROL BOOSTER PUMP STATIONS	EA	15	\$3,400.00	\$51,000.00		
B	MODEM	EA	15	\$600.00	\$9,000.00	\$64,500.00	
C	MISCELLANEOUS PARTS	LS	15	\$300.00	\$4,500.00		
11 BOOSTER PUMP STATION REPLACEMENT							
A	LONG FORK	LS	1	\$55,000.00	\$55,000.00		
B	GRAVEYARD	LS	1	\$55,000.00	\$55,000.00	\$190,000.00	
C	FOREST HILLS	LS	1	\$80,000.00	\$80,000.00		
12 PRESSURE REDUCING VALVE STATION REPLACEMENT							
A	WIDOW'S BRANCH	LS	1	\$15,000.00	\$15,000.00		
B	BLACKBERRY #2	LS	1	\$15,000.00	\$15,000.00	\$60,000.00	
C	LYNN TROUGH	LS	1	\$15,000.00	\$15,000.00		
D	DORTON PITSTOP	LS	1	\$15,000.00	\$15,000.00		
13 STAFF							
A	STAFF TO PERFORM PROJECTS IN-HOUSE - 4 LABORERS @ \$14.00 PER HOUR, ALL BENEFITS INCLUDING 26.95% RETIREMENT, ALONG WITH A 3% SALARY INCREASE IN THE 2ND AND 3RD YEAR, BASED ON A 40 HOUR WORK WEEK	EA	4	\$147,630.76	\$590,523.04	\$590,523.04	
14 VEHICLES / EQUIPMENT							
A	3500 SERIES UTILITY TRUCK	EA	1	\$75,000.00	\$75,000.00		
B	MINI-EXCAVATOR	EA	1	\$55,000.00	\$55,000.00		
C	PULL BEHIND TRAILER	EA	1	\$6,500.00	\$6,500.00		
D	4500 SERIES DUMP TRUCK	EA	1	\$75,000.00	\$75,000.00		
E	SMALL DOZER	EA	1	\$100,000.00	\$100,000.00		
F	PULL BEHIND TRAILER	EA	1	\$35,000.00	\$35,000.00		
G	1500 SERIES PICKUP	EA	4	\$40,000.00	\$160,000.00	\$572,500.00	
H	UTILITY SIDE BY SIDE	EA	1	\$17,500.00	\$17,500.00		
I	PULL BEHIND TRAILER	EA	1	\$3,000.00	\$3,000.00		
J	TOWABLE AIR COMPRESSOR	EA	1	\$30,000.00	\$30,000.00		
K	2 1/2" HAMMER BORE	EA	1	\$5,500.00	\$5,500.00		
L	MISCELLANEOUS HAND TOOLS & EQUIPMENT	LS	1	\$10,000.00	\$10,000.00		

**MOUNTAIN WATER DISTRICT
PROPOSED WATER INFRASTRUCTURE IMPROVEMENT SURCHARGE**

ITEM NO.	PROJECT DESCRIPTION	UNIT	QUANTITY	COST PER ITEM	TOTAL COST	COST ESTIMATE
15	WATER MAIN LINE REPLACEMENT / REPETITIVE LEAKS - BURNING FORK					
A	4" SDR 17 PVC CL 250 WATERLINE	LF	3,750	\$30.00	\$112,500.00	
B	CONNECT TO EXISTING 4" WATER MAINLINE	EA	2	\$2,750.00	\$5,500.00	
C	4" GATE RESILIENT WEDGE GATE VALVE, MJ, 250 PSI	EA	2	\$2,500.00	\$5,000.00	
D	3/4" CUSTOMER SERVICE LINE RECONNECTS	EA	20	\$2,000.00	\$40,000.00	\$207,010.00
E	ENGINEERING DESIGN	LS	1	\$22,820.00	\$22,820.00	
F	ENGINEERING INSPECTION	LS	1	\$21,190.00	\$21,190.00	
16	WATER MAIN LINE REPLACEMENT / REPETITIVE LEAKS - US 460 (OASIS PAWN SHOP)					
A	8" DUCTILE IRON PIPE CL 350 WATERLINE	LF	2,600	\$50.00	\$130,000.00	
B	CONNECT TO EXISTING 8" WATER MAINLINE	EA	2	\$3,000.00	\$6,000.00	
C	8" GATE RESILIENT WEDGE GATE VALVE, MJ, 250 PSI	EA	2	\$3,000.00	\$6,000.00	
D	JACK & BORE FOR 8" DUCTILE IRON PIPE CL 350 WATERLINE PRICE INCLUDES THE WATERLINE	LF	100	\$250.00	\$25,000.00	\$212,090.00
E	ENGINEERING DESIGN	LS	1	\$23,380.00	\$23,380.00	
F	ENGINEERING INSPECTION	LS	1	\$21,710.00	\$21,710.00	
17	MISCELLANEOUS EASEMENTS / PERMITS	LS	1	\$25,000.00	\$25,000.00	\$25,000.00
<p>NOTE: THIS IS AN ESTIMATE THAT COULD FLUCTUATE UPWARD ANY TIME DUE TO MATERIAL PRICING, EQUIPMENT PRICING, VEHICLE PRICING, CONTRACTOR PRICING, EASEMENTS, ADDITIONAL PROFESSIONAL OR CONTRACTOR SERVICES, ETC.</p>						
					ESTIMATED COST	\$3,031,561.54
					10% CONTINGENCY	\$303,156.15
					TOTAL ESTIMATED COST	\$3,334,717.69
			TOTAL ESTIMATED COST		\$3,334,717.69	
			CURRENT CUSTOMER COUNT	16,520		
			TERM MONTHS	36		
					TOTAL COST PER CUSTOMER	\$201.86
					ANNUAL COST PER CUSTOMER	\$67.29
					MONTHLY COST PER CUSTOMER	\$5.61