COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF:

APPLICATION OF KENTUCKY-	**)**	
AMERICAN WATER COMPANY TO	**)**	**CASE NO. 2021-00090**
AMEND TARIFF TO	**)**	
REVISE QUALIFIED INFRASTRUCTURE	**)**	
PROGRAM CHARGE		

DIRECT TESTIMONY OF KURT A. STAFFORD

Filed: March 26, 2021

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I. INTRODUCTION

Q. Please state your name, position, and business address.

A. My name is Kurt A. Stafford. I am the Director of Engineering for American Water Works Company, Inc.'s Southeast Division which includes Kentucky-American Water Company, Inc. ("KAW" or "the Company"). My business address is 2300 Richmond Road, Lexington, Kentucky 40502.

Q. Have you previously filed testimony at the Kentucky Public Service Commission ("Commission")?

A. Yes. I filed testimony before the Kentucky Public Service Commission in Case No 2020-00027. I have also filed testimony in multiple proceedings before the Tennessee Public Utility Commission ("TPUC").

Q. Please state your educational and professional background.

A. I received a B.S. degree in Civil Engineering from the University of Tennessee in Knoxville, Tennessee in 2000. I have also completed a Masters of Urban and Regional Planning from the University of Tennessee in 2004 as well as a Masters of Business Administration from Tennessee Tech University in Cookeville, Tennessee in 2012. I am a registered Professional Engineer in the State of Tennessee and the Commonwealth of Virginia.

I have been employed in my current role since September 2019. Prior to that, I served as Engineering Manager for Tennessee-American Water Company from April 2016 to September 2019. I began my career as a Consulting Engineer in the utility and environmental remediation fields working for engineering firms in Knoxville, Tennessee and Lexington, Kentucky. In June 2004, I accepted a role as a Staff Engineer at the Virginia Department of Environmental Quality in Richmond, Virginia. In January 2007, I began

working for the Knoxville Utilities Board ("KUB") as a Project Engineer managing wastewater construction projects related to KUB's $650 million Wastewater Consent Decree Program. In 2010, I was promoted to Team Leader at KUB where I managed an engineering team working on construction projects for KUB's Wastewater Consent Decree Program. In 2012, I was assigned as Team Leader for an engineering team who managed construction and planning projects for KUB's water distribution system. Additionally, I served as a certified Level II Erosion Control Inspector responsible for managing erosion control inspections and ensuring construction projects for all four of KUB's utilities (gas, water, wastewater and electric) conformed to local, state and federal requirements. I also served as the main point of contact for both Water and Wastewater Engineering for new service requests and projects. I am an active member of the American Water Works Association ("AWWA").

Q. What is the purpose of your direct testimony?

A. The purpose of my testimony is to describe the planned investment for the Qualified Infrastructure Program Rider ("QIP Rider") approved by this Commission in KAW's last rate case (Case No. 2018-00358). I will describe the projects KAW plans to complete that are eligible for recovery under the QIP Rider. This is the second QIP filing so it is for QIP Year 2. Projects for QIP Rider Year 1 were described in Case No. 2020-00027.

II. QIP ELIGIBLE UTILITY PLANT

Q. Please define the categories for QIP Eligible Utility Plant.

A. QIP eligible utility plant includes Distribution Infrastructure and Water Treatment Infrastructure. They are both defined terms in KAW's tariff on file with the Commission at Sheet No. 48 of the tariff.

Q. Please describe eligible Distribution Infrastructure.

A. Eligible distribution infrastructure includes distribution and transmission system structures and improvements, mains and valves installed as replacements for existing facilities; hydrants, distribution tanks; services, meters and meter installations; power generation and pumping equipment installed as replacements for existing facilities; and unreimbursed funds related to capital projects to relocate facilities required by governmental infrastructure projects.

Q. Please describe eligible Water Treatment Infrastructure.

A. Eligible water treatment infrastructure includes source of supply and water treatment structures, pipe and equipment including sampling equipment, SCADA equipment, and power generation and pumping equipment installed as replacements for existing facilities.

Q. Are projects encompassing all of the categories of QIP eligible Utility Plant included in this filing?

A. No.

Q. Why are certain projects not included?

A. The Public Service Commission's Order in Case No. 2020-00027 states that only projects that "are reasonably related or incidental to replacing aging mains" should be included in QIP Rider filings. Therefore, this filing follows those recommendations.

Q. Can you elaborate on what KAW projects were proposed in Case No. 2020-00027 or QIP Year 1 and what was approved?

A. Yes. In Case No. 2020-00027 or QIP Rider Year 1, KAW submitted projects that matched the sample Strategic Capital Expenditures Plan ("SCEP") for the QIP Rider. This sample QIP Rider SCEP was provided during discovery in KAW's last rate case (Case No. 2018-00358). This was provided as a response to AG 1-59 (see attached Exhibit 1). The sample

SCEP in Exhibit 1 is based on calendar year spend whereas the QIP Rider year runs from July 1st to June 30th. So in the sample QIP Rider SCEP, KAW proposed to spend approximately $14.3 million during QIP Rider Year 1. This total includes the $5.3 million proposed to be spent in 2020 (after the end of the forecasted test period in the rate case which was June 30, 2020) and half of the proposed 2021 spend or approximately $9 million which would occur between January 1st and June 30th of 2021. In Case No. 2020-00027, KAW submitted for approximately $13.2 million in additions in the QIP Rider SCEP (see Exhibit 2).

The Public Service Commission's Order in Case No. 2020-00027 approved Budget Lines B and C from Exhibit 2 which totaled $8.3 million in additions.

Q. How have these recommendations impacted the selection of projects included in this filing?

A. Based on the Discussions and Findings from the Order in Case No. 2020-00027 and feedback received from the Commission at the May 12, 2020 Formal Hearing, KAW is placing a stronger emphasis on the replacement of aging mains in this filing. As presented in the Direct Testimony of Mr. Brent O'Neill, P.E. in Case No. 2018-00358, KAW initially chose a 25-year replacement cycle for galvanized and cast iron mains. This replacement cycle was chosen as a component of a broader program to replacing aging water infrastructure as described in Case No 2018-00358. However, given the Commission's emphasis on the replacement of aging mains, KAW has decided to shift from a 25 to a 20-year replacement cycle.

III. CAPITAL INVESTMENT PLAN

Q. Please describe KAW's Capital Investment Plan.

A. The Company's Capital Investment Plan includes four categories of Recurring Projects ("RP"). These projects are referred to as recurring because they include a defined type of work which occurs every year. A copy of the QIP Rider Year 2 SCEP is attached to my testimony as Exhibit 3.

Q. How is the Capital Investment Plan developed?

A. Capital planning needs are addressed in both the short term (one year) and longer term (five years). Projects are prioritized using objective criteria that validate the need for a project and assess the risk of not performing the project. A key component of this planning technique is that it is flexible and can be adjusted when required to address new needs, such as unplanned equipment failures, large or sudden growth of a service area, or new regulatory requirements. KAW's Engineering Department develops a proposed capital budget with input from Operations Supervisors and Project Managers and then shares the plan with the KAW President and the KAW Vice President of Operations for their review and approval. This process is the basis for the capital expenditures reflected in the Company's Investment Plan.

Q. Please describe the Recurring Projects that are included within the Company's Capital Investment Plan as it relates to the QIP.

A. The Recurring Projects that are included within the Company's Capital Investment Plan and for which KAW seeks inclusion in the QIP Rider are pipe replacement projects for replacement of mains, unscheduled mains, hydrants, valves and service lines.

Q. Please describe the factors used in the preparation of the Recurring Projects that are included within the Company's Capital Investment Plan.

A. KAW uses engineering criteria based on accepted engineering standards and practices to determine the amount of work needed on the distribution system or the treatment facilities that provide adequate capacity and appropriate levels of reliability. The identified work will enable KAW to provide safe, adequate and reliable service to its Customers to meet their domestic, commercial and industrial needs; provide flows adequate for fire protection; and satisfy all regulatory and safety requirements. The criteria for evaluating the need for the recurring projects are engineering requirements; consideration of national, state and local trends; environmental impact evaluations; and water resource management. The criteria are developed from regulations, professional standards and KAW engineering policies and procedures.

KAW utilizes historical and forecasted data to develop the program costs based on the determined level of work for each RP line.

Q. In developing its Capital Investment Plan, does the Company consider customer impact in addition to customer benefit?

A. Yes. The Capital Investment Plan considers historical spending as well as proposed improvements as documented through the Comprehensive Planning Study ("CPS") and knowledge of other current system needs. During the planning process, projects are strategically staggered over a five-year period to balance spending and ensure KAW continues to provide safe, adequate and reliable service to its Customers. Projects are chosen and scheduled in a prudent manner in order to balance the critical need for replacing aging infrastructure with system safety and reliability as well as Customer impact.

Q. Can you describe how the Capital Investment Plan is monitored during the year?

A. Since 2003, the entire American Water system has used a process for the development and review of capital expenditures that has incorporated industry best practices. KAW, like its sister companies, has benefitted from that process. The process includes a regional Capital Investment Management Committee ("CIMC") to ensure capital investment plans meet the strategic intent of the business. In turn, this ensures that capital investment plans are integrated with operating expense plans and provides more effective controls on budgets and individual capital projects.

The CIMC includes the KAW President, Vice President of Operations, Engineering Project Managers, Engineering Director, Chief Financial Officer, and Capital Coordinator. The CIMC meets monthly. The CIMC receives capital expenditure plans from project managers and approves them as required by the process. Once budgets are approved, the CIMC meets monthly to review capital expenditures compared to budgeted levels. Discussions are held on variances to budgets that include the reason for the variance and suggestions to bring the budget lines back in line with the approved budget.

If changes in the budgets are required due to changes in priorities or unexpected expenditures, then the CIMC reviews the request for changes and approves the movement of available capital from other budget lines to offset the changes in the capital spend. All projects, including normal recurring items, have an identified project manager responsible for processing the stages of the project. The focus of the CIMC, along with the monthly meetings, has allowed KAW to be more flexible with changes that inevitably occur during the course of implementation of projects while providing oversight on capital expenditures.

IV. QUALIFIED INFRASTRUCTURE PROGRAM

Q. What are the budget lines that are included under Recurring Projects within the Qualified Infrastructure Program?

A. The budget lines that will be included under Recurring Projects in the QIP Year 2 will be:

1) Line B – QIP Mains Replaced/Restored
2) Line C - Mains Unscheduled
3) Line F – Hydrants and Valves Replaced
4) Line H – Services Replaced

These budget lines represent investment to replace aging infrastructure that is non-revenue producing. This means infrastructure that does not produce additional revenue (no new customers). Examples of infrastructure that would produce additional revenue are main extensions for new development and new services or new meters for new customers.

Q. What work is associated with Budget Line B - QIP Mains Replaced/Restored?

A. This investment plan line includes the scheduled replacement, renewal or improvement of existing water mains, including valves and other appurtenances that are necessary to perform the work. Work under this line is the planned and scheduled proactive replacement of water main that has been determined to reach its useful life or is causing service problems to the adjacent area serviced by the main. Water main replaced under this line item will result in a stronger and more reliable water distribution system. By replacing aging water main infrastructure on an accelerated basis and on a proactive rather than reactive basis, the distribution system will provide direct Customer benefits in the form of improved and sustained water quality, improved fire protection, fewer service disruptions and lower operating and maintenance costs over time.

KAW plans to spend approximately $19,700,000 to replace various size water mains as part of twenty projects during the QIP forecast period. KAW will replace approximately 78,800 feet or 14.9 miles of main during the period. These projects are not

only important in addressing the aging infrastructure needs of the community, but also allow the Company to take a leadership role in reducing its carbon footprint. By replacing infrastructure that is leaking or has a high potential for failure, the Company is able to reduce the amount of water that is produced and reduce the amount of electricity that we use. The overall result is a reduction in the amount of fossil fuel generation required for the Company's facilities.

Q. What are the proposed projects that are included with Budget Line B - QIP Mains Replaced/Restored?

A. KAW currently has included the following twenty projects as part of the scheduled work associated with Budget Line B in the Lexington, Kentucky area:

1. Fairway – Phase 1

Replace approximately 3,100 LF of 2 and 6-inch cast iron with 4 and 8-inch ductile iron pipe on Clayton Avenue, Courtney Avenue and Appletree Lane (see Map A attached to the Application).

2. Wyatt Avenue

Replace 6,150 LF of 2, 6 and 8-inch cast iron with 8-inch ductile iron on Wyatt Parkway, Lindy Lane, Appletree Lane (see Map B attached to the Application).

3. Bluegrass/Highlawn

Replace approximately 2,500 LF of 2, 4 and 6-inch cast iron with 8-inch ductile iron pipe on Bluegrass Avenue and Highlawn Avenue (see Map C attached to the Application).

4. Codell Drive

Replace approximately 5,250 LF of 2, 6, and 8-inch cast iron and asbestos cement with 4 and 8-inch ductile iron on Codell Drive, Mirahill Drive and Mulberry Drive (see Map D attached to the Application).

5. N Ashland/Aurora

Replace approximately 4,000 LF of 4 and 6-inch cast iron with 4 and 8-inch ductile iron pipe on Aurora Avenue, North Ashland Avenue and Memory (see Map E attached to the Application).

6. National

Replace approximately of 3,500 LF of 2 and 6-inch cast iron with 8-inch ductile iron on National Avenue, Richmond Avenue and Given Avenue (see Map F attached to the Application).

7. Whitney/Ash

Replace 6,600 LF of 2, 6, and 8-inch cast iron with 8-inch ductile iron on Whitney Avenue, Michigan Street, Ash Street and Oak Street (see Map G attached to the Application).

8. Clay's Mill Road – Phase 2

Replace approximately 6,300 LF of 2 and 6-inch cast iron with 8-inch ductile iron pipe on Clay's Mill Road, Blue Ash Drive and McCubbing Drive (see Map H attached to the Application).

9. Montclair Drive

Replace approximately 2,200 LF of 6-inch cast iron with 8-inch ductile iron on Montclair Drive (see Map I attached to the Application).

10. Summit/Kastle

Replace 2,900 LF of 6-inch cast iron with 8-inch ductile iron on Summit Drive, Eldemere Road and Scoville Road (see Map J attached to the Application).

11. Valley Farm

Replace approximately 5,400 LF of 2, 6 and 8-inch cast iron with 4 and 8-inch ductile iron pipe on Valley Farm Drive, Chris Drive and Costigan Drive (see Map K attached to the Application).

12. Colchester/Barksdale

Replace approximately 3,700 LF of 2, 6 and 8-inch cast iron with 4 and 8-inch ductile iron on Barksdale Drive and Colchester Drive (see Map L attached to the Application).

13. Campbell Lane

Replace 1,100 LF of 2-inch cast iron with 8-inch ductile iron on Campbell Lane (see Map M attached to the Application).

14. Westgate/Hamilton Park

Replace approximately 3,600 LF of 2, 4 and 6-inch cast iron with 8-inch ductile iron pipe on Westgate Drive, Hamilton Park and Leisure Lane (see Map N attached to the Application).

15. Lancelot

Replace approximately 2,500 LF of 2, 6 and 8-inch cast iron with 4 and 8-inch ductile iron on Lancelot Lane, King Arthur Drive and King Arthur Court (see Map O attached to the Application).

16. Kilrush/Caywood

Replace 6,250 LF of 2 and 8-inch cast iron with 4 and 8-inch ductile iron on Kelsey Drive, Kilrush Drive and Caywood Drive (see Map P attached to the Application).

17. Merrimac/Fogo/Crewe

Replace approximately 3,450 LF of 2 and 8-inch cast iron with 4 and 8-inch ductile iron pipe on Merrimac Drive, Fogo Court and Crewe Court (see Map Q attached to the Application).

18. Tisdale/Fraserdale

Replace approximately 5,300 LF of 2, 6 and 8-inch cast iron with 4 and 8-inch ductile iron on Tisdale Drive and Fraserdale Drive (see Map R attached to the Application).

19. Montavesta Road

Replace 4,350 LF of 2, 6 and 8-inch cast iron with 4 and 8-inch ductile iron on Montavesta Road and Old Crow Court (see Map S attached to the Application).

20. Various Shortline Cast Iron Main Replacements

Replace 650 LF of cast iron with 4 and 8-inch ductile iron through various small projects performed by KAW crews (there is no map for this item).

Q. Why is the majority of the main being replaced cast iron and galvanized?

A. The Company analyzed main break history from January 2012 to December 2016. During this period, the Company experienced 837 main breaks, averaging about 167 breaks per year. Review of the reported breaks from January 2012 to December 2016 indicated that main breaks on cast iron main represented 60% of all breaks. Since cast iron main (lined

and unlined) material only represents 15.9% of the total inventory of mains in the ground, the break rate on this type of material is significantly higher than the other material in the system. The break rate per mile of main shows that cast iron main had a break rate of 1.1 breaks per mile of main compared to ductile iron, which only saw a break rate of 0.04 breaks per mile of main from January 2012 to December 2016.

Q. What impacts are expected from additional Line B spending in the forecast period?

A. It is anticipated that removing cast iron and galvanized mains from the distribution system will help to reduce the number of water main breaks. Given the disproportionate amount of breaks caused by these two pipe materials, removing galvanized and cast irons mains will have the biggest impact on the number of main breaks and help ensure the reliability of water service to KAW Customers.

Q. What work is associated with Budget Line C - Mains Unscheduled?

A. This investment plan item includes the unscheduled replacement or restoration of existing water mains, including valves and other appurtenances that are necessary to perform the work. The work associated with the Line C is similar to that of Mains Replaced under Line B and addresses water mains that have started to experience chronic issues. However, unlike the Mains Replaced through Line B, the work associated in Line C is a result of an unexpected failure of the main or valve that causes impact to the Customer and requires immediate work to correct the failure. By the nature of the work being a reaction to an unexpected event, the work associate in Line C cannot be planned and scheduled, thus KAW considers this work as unscheduled. The majority of work associated with Line C is water mains that have experienced an unscheduled break or failure and the Company has determined that the replacement of a section of the main will allow the service life of the

main to be extended rather than just repairing the failure with a temporary clamp and replacing the main through Lines B.

KAW estimates spending approximately $981,000 to replace various size water mains during unscheduled events. As the Company replaces sections of main, the existing main will be more stable and the life of the main will be extended, which will allow for a more concentrated effort for main replacements on mains that have a larger history of breaks.

Q. What work is associated with Budget Line F – Hydrants and Valves Replaced?

A. This line item includes the replacement of leaking, failed or obsolete hydrants, including hydrant assemblies and valves that are Company funded. Through the replacement of hydrants and valves that have been determined to not function properly through ongoing inspections allows KAW to maintain public safety and ensure the distribution system is able to provide adequate and reliable service to Customers.

KAW plans to spend approximately $800,000 to replace hydrants and valves. Of this amount, KAW plans to spend a majority on replacing 37 damaged, leaking or broken valves that have been identified during valve inspections. The estimate to replace these valves is $674,000. Within this line, KAW also expects to replace 23 hydrants that have been found during inspections to be damaged, leaking or in need of extensive repair. The estimate to replace these hydrants is $126,000.

Q. How is work related to Budget Line F – Hydrants and Valves associated with the replacement of aging mains?

A. Hydrants and valves replaced through Line F have reached the end of their useful life. These valves and hydrants are typically located on aging mains, primarily cast iron,

galvanized and asbestos cement. When these valves and hydrants are replaced, sections of aging mains are removed as part of the replacement work. For example, when a leaking or broke valve is replaced, sections of main on both side of the valve are also replaced with new main and reconnected to existing pipe. This process not only provides a new valve which can control flow and improved reliability, but it also replaces aging water main. This is similar to what would occur during the replacement of on a leaking valve under Budget Line C – Unscheduled Mains. However, valve replacement under Budget Line F would occur on a scheduled basis rather than reactive or unscheduled basis like it would occur under Budget Line C.

Q. What work is associated with Budget Line H – Services Lines Replaced?

A. This investment plan item includes the replacement of water services or the small diameter pipe that connects the Customer to the Company's distribution main. The work includes the replacement of the water services between the Company's distribution main and the Customer's property line, including the replacement of corporation stops, or shut-off valves. The replacement of services that are leaking, causing a reduction in water service or concerns with water quality are included in the work performed within this spending line. By replacing these services, the Company provides better service to Customers.

KAW plans to spend approximately $530,000 to replace services and laterals in the forecast period. KAW will replace approximately 242 services.

Q. **How is work related to Line H – Services Replaced associated with the replacement of aging mains?**

A. Services which are being replaced under Budget Line H are typically attached to aging main such as cast iron, galvanized and asbestos cement. The age of the service line

typically corresponds to the water main installation date. By replacing these aging services with new pipe, the potential for leakage, failure and further customer service interruptions are greatly reduced. Both aging mains and service lines are exposed to the same modes of failure. As they reach the end of their service life, the likelihood of failure increase as does the probability of leakage which contributes to unaccounted-for water.

IV. CALCULATION OF QIP PERCENTAGE

Q. What witness is responsible for the calculation of the QIP Rider amount that results from these infrastructure improvements?

A. KAW witness Elaine Chambers covers the calculation of the requested QIP Rider amount in her direct testimony.

V. CONCLUSION

Q. What is your recommendation for the Commission?

A. I recommend that the Commission approve this petition for a QIP Rider amount as filed.

Q. Does this conclude your testimony?

A. Yes, it does.

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF FAYETTE)

The undersigned, Kurt A. Stafford, being duly sworn, deposes and says that he is the Director of Engineering for Kentucky-American Water Company, that he has personal knowledge of the matters set forth in the foregoing testimony and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

Kurt Stafford
Kurt A. Stafford

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 26 day of March, 2021.

Christina DeCapio Dean
Notary Public

My Commission Expires:

8/6/2022

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
ATTORNEY GENERAL'S FIRST REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

59. Provide all projects that KAWC will include in its proposed QIP over the next 5 years. Include the cost of each project and the purpose of each project, i.e., pipe replacement, pumping station replacement, treatment plant replacement, etc.

Response:

Please see attached.

QIP STRATEGIC CAPITAL EXPENDITURE PLAN - 5 YEAR PROGRAM UPDATED

Business Unit Kentucky
Description KY QIP BP 2020-2024 SCEP
First Year of Plan 2020*

*2020 QIP Spending occurs following Future Test Year ending June 2020

Business Unit	Project ID	Project Title	Project Purpose	5-Year Total		2020* Total	2021 Total	2022 Total 2022	2023 Total 2023	2024 Total 2024
		RECURRING PROJECTS								
Kentucky	B	Mains - Replaced / Restored	Main Replacements other than Cast Iron/ Galvanized Main	**8,750,000**		750,000	2,000,000	2,000,000	2,000,000	2,000,000
Kentucky	B2	QIP - Mains - Replaced / Restored	Replacement of Cast Iron/ Galvanized Main	**46,250,000**		2,250,000	8,000,000	12,000,000	12,000,000	12,000,000
Kentucky	C	Mains - Unscheduled	Main Replacements	**4,050,000**		450,000	900,000	900,000	900,000	900,000
Kentucky	D	Mains - Relocated	Main Replacement caused by relocations	**1,825,025**		200,025	387,500	387,500	400,000	450,000
Kentucky	F	Hydrants, Valves, and Manholes - Replaced	Hydrant, Valves Replacement	**2,272,320**		249,480	501,960	504,960	507,960	507,960
Kentucky	H	Services and Laterals - Replaced	Service Line Replacements	**2,396,250**		266,250	532,500	532,500	532,500	532,500
Kentucky	J	Meters - Replaced	Meter Replacements	**5,008,475**		571,350	1,220,475	1,010,150	1,106,500	1,100,000
Kentucky	L	SCADA Equipment and Systems	Control System Replacements/ Redundancies	**1,746,500**		166,500	320,000	360,000	450,000	450,000
Kentucky	M	Security Equipment and Systems	Security System Redundancies/ Replacements	**607,000**		65,000	167,000	125,000	125,000	125,000
Kentucky	Q	Process Plant Facilities and Equipment	Water Treatment Equipment Replacements	**3,375,000**		375,000	750,000	750,000	750,000	750,000
		Total Recuring Projects				**5,343,605**	**14,779,435**	**18,570,110**	**18,771,960**	**18,815,460**

Business Unit	Project ID	Project Title	Project Purpose	5-Year Total	Anticipated In Service Date	2020* Total 2020	2021 Total 2021	2022 Total 2022	2023 Total 2023	2024 Total 2024
		INVESTMENT PROJECTS								
Kentucky	I12-020080	KRS1 Pump 10 and 11 Replacements	High Service Pump Replacement	**2,250,270**	9/30/2021	-	2,250,270	-	-	-
Kentucky	I12-020081	KRS1 Pump 14 Replacement	High Service Pump Replacement	**1,500,000**	6/30/2022	-	-	1,500,000	-	-
Kentucky	I12-020095	Mercer Road Booster Station	Pump Station Replacement	**1,000,000**	5/30/2021	-	1,000,000	-	-	-
Kentucky	I12-020096	Mt Horeb Booster Station	Pump Station Replacement	**750,000**	5/30/2023	-	-	-	750,000	-
Kentucky	I12-020097	Hall Booster Station	Pump Station Replacement	**750,000**	5/30/2022	-	-	750,000	-	-
		Total Investment Projects				**-**	**3,250,270**	**2,250,000**	**750,000**	**-**
		TOTAL QIP INVESTMENT				**5,343,605**	**18,029,705**	**20,820,110**	**19,521,960**	**18,815,460**

Cost of Removal

Business Unit	Business Unit No.	Project Title				Total 2020	Total 2021	Total 2022	Total 2023	Total 2024	Total
Kentucky	B	Mains - Replaced / Restored				300,000	600,000	769,995	769,995	769,995	3,209,985
Kentucky	C	Mains - Unscheduled				99,000	198,000	198,000	198,000	198,000	891,000
Kentucky	D	Mains - Relocated				20,003	38,750	38,750	40,000	40,000	177,503
Kentucky	F	Hydrants, Valves, and Manholes - Replaced				77,339	155,608	156,538	157,468	157,468	704,419
Kentucky	H	Services and Laterals - Replaced				82,538	165,075	165,075	165,075	165,075	742,838
Kentucky	J	Meters - Replaced				74,276	158,662	131,320	143,845	143,845	651,947

Exhibit 1
Strategic Capital Expenditures Plan (SCEP)

		2020						2021						
Reccuring Project (RP)	In-service Date	July	August	September	October	November	December	January	February	March	April	May	June	Totals
B - Mains - Replaced/Restored		$400,000	$400,000	$400,000	$600,000	$600,000	$800,000	$800,000	$800,000	$800,000	$700,000	$600,000	$500,000	$7,400,000
C - Mains - Unscheduled		$70,000	$70,000	$70,000	$70,000	$80,000	$80,000	$85,000	$85,000	$80,000	$70,000	$70,000	$70,000	$900,000
D -Mains - Relocated		$38,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$500,000
F - Valves, Hydrants and Manholes - Replaced		$38,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$42,000	$500,000
H - Services and Laterals - Replaced		$40,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$45,000	$40,000	$530,000
J - Meters - Replaced		$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$1,200,000
L - SCADA Equipment and Systems		$27,000	$27,000	$27,000	$27,000	$27,000	$28,000	$27,000	$27,000	$27,000	$27,000	$27,000	$27,000	$325,000
M - Security Equipment and Systems		$10,800	$10,800	$10,800	$10,800	$10,800	$11,200	$10,800	$10,800	$10,800	$10,800	$10,800	$10,800	$130,000
Q - Process Plant Facilities and Equipment		$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$62,500	$750,000
RP Totals		*$786,300*	*$799,300*	*$799,300*	*$999,300*	*$1,009,300*	*$1,210,700*	*$1,214,300*	*$1,214,300*	*$1,209,300*	*$1,099,300*	*$999,300*	*$894,300*	*$12,235,000*
Investment Project (IP)														
Cox Street Booster Pump Station	5/31/2021	$20,000	$25,000	$0	$0	$0	$0	$0	$0	$350,000	$350,000	$200,000	$55,000	$1,000,000
IP Totals		*$20,000*	*$25,000*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$350,000*	*$350,000*	*$200,000*	*$55,000*	*$1,000,000*
Total Additions		$806,300	$824,300	$799,300	$999,300	$1,009,300	$1,210,700	$1,214,300	$1,214,300	$1,559,300	$1,449,300	$1,199,300	$949,300	$13,235,000

		2020						2021						
Removals		July	August	September	October	November	December	January	February	March	April	May	June	Totals
B - Mains - Replaced/Restored		$20,000	$20,000	$20,000	$30,000	$30,000	$40,000	$40,000	$40,000	$40,000	$35,000	$30,000	$25,000	$370,000
C - Mains - Unscheduled		$15,400	$15,400	$15,400	$15,400	$17,600	$17,600	$18,700	$18,700	$17,600	$15,400	$15,400	$15,400	$198,000
D -Mains - Relocated		$3,800	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200	$4,200	$50,000
F - Valves, Hydrants and Manholes - Replaced		$11,780	$13,020	$13,020	$13,020	$13,020	$13,020	$13,020	$13,020	$13,020	$13,020	$13,020	$13,020	$155,000
H - Services and Laterals - Replaced		$12,400	$13,950	$13,950	$13,950	$13,950	$13,950	$13,950	$13,950	$13,950	$13,950	$13,950	$12,400	$164,300
J - Meters - Replaced		$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$13,000	$156,000
L - SCADA Equipment and Systems														
M - Security Equipment and Systems														
Q - Process Plant Facilities and Equipment		$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$6,250	$75,000
Cox Street Booster Pump Station												$75,000		$75,000
Total Removals		*$82,630*	*$85,820*	*$85,820*	*$95,820*	*$98,020*	*$108,020*	*$109,120*	*$109,120*	*$108,020*	*$100,820*	*$170,820*	*$89,270*	*$1,243,300*

Exhibit 3
Strategic Capital Expenditures Plan (SCEP)

		2021						2022						
Reccuring Project (RP)	In-service Date	July	August	September	October	November	December	January	February	March	April	May	June	Totals
B - Mains - Replaced/Restored		$1,410,000	$1,910,000	$1,910,000	$1,910,000	$1,960,000	$1,960,000	$1,960,000	$1,960,000	$1,960,000	$2,010,000	$400,000	$350,000	$19,700,000
C - Mains - Unscheduled		$75,000	$75,000	$75,000	$75,000	$85,000	$95,000	$96,000	$95,000	$85,000	$75,000	$75,000	$75,000	$981,000
F - Valves, Hydrants - Replaced		$40,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$60,000	$800,000
H - Services - Replaced		$44,163	$44,167	$44,167	$44,167	$44,167	$44,167	$44,167	$44,167	$44,167	$44,167	$44,167	$44,167	$530,000
Total Additions		*$1,569,163*	*$2,099,167*	*$2,099,167*	*$2,099,167*	*$2,159,167*	*$2,169,167*	*$2,170,167*	*$2,169,167*	*$2,159,167*	*$2,199,167*	*$589,167*	*$529,167*	*$22,011,000*

		2021						2022						
Removals		July	August	September	October	November	December	January	February	March	April	May	June	Totals
B - Mains - Replaced/Restored		$141,000	$191,000	$191,000	$191,000	$196,000	$196,000	$196,000	$196,000	$196,000	$201,000	$40,000	$35,000	$1,970,000
C - Mains - Unscheduled		$16,500	$16,500	$16,500	$16,500	$18,700	$20,900	$21,120	$20,900	$18,700	$16,500	$16,500	$16,500	$215,820
F - Valves, Hydrants - Replaced		$12,400	$21,700	$21,700	$21,700	$21,700	$21,700	$21,700	$21,700	$21,700	$21,700	$21,700	$18,600	$248,000
H - Services - Replaced		$13,691	$13,692	$13,692	$13,692	$13,692	$13,692	$13,692	$13,692	$13,692	$13,692	$13,692	$13,692	$164,300
Total Removals		*$183,591*	*$242,892*	*$242,892*	*$242,892*	*$250,092*	*$252,292*	*$252,512*	*$252,292*	*$250,092*	*$252,892*	*$91,892*	*$83,792*	*$2,598,120*

Removal Rates	
B	0.10
C	0.22
H	0.31
F	0.31