

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

1. Refer to the responses to Commission Staff's First Request for Information (Staff's First Request), Item 14.a.
 - a. Provide revised budget project schedules for the calendar years 2008 through 2017, eliminating the actual and budgeted construction costs of Kentucky River Station II (KRS II) in pool 3 of the Kentucky River.
 - b. Provide a schedule listing the actual and budgeted annual construction costs of KRS II that are being eliminated in the response to Item 1.a above.
 - c. Provide copies of all schedules, supporting calculations, and documentation requested in Items 1.a and 1.b in Excel spreadsheet format, with formulas intact and unprotected, and all rows and columns fully accessible.

Response:

- a. Please see the attachment that revises the response to Commission Staff's First Request for Information Schedule 14a, eliminating the actual and budgeted construction costs of Kentucky River Station II (KRS II) in pool 3 of the Kentucky River.
- b. Please see the attachment that lists the actual and budgeted annual construction costs of KRS II that are being eliminated in the response to Item 1.a above.
- c. Please see the attachments.

KENTUCKY-AMERICAN WATER COMPANY
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2. Refer to the responses to Staff's First Request, Items 14.a and 14.b.
 - a. Using the data provided in the response to 1.a above, provide a schedule, similar to the schedule provided in the response to 14.b, that calculates the ten- year average slippage factor for the budget projects for the calendar years 2008 through 2017.
 - b. Using the data provided in the response to 14.a of Staff's First Request for the recurring capital projects A-S expenditures, provide a schedule that, similar to the schedule provided in the response to 14.b, calculates the ten-year average slippage factor for the calendar years 2008 through 2017.
 - c. Provide copies of all schedules, supporting calculations, and documentation requested in Items 2.a and 2.b in Excel spreadsheet format, with formulas intact and unprotected, and all rows and columns fully accessible.

Response:

- a. Please see the attachment that calculates the Slippage Factor as requested in PSC Staff's Second Request schedule 1.a.
- b. Please see the attachment that calculates the Slippage Factor for the recurring capital projects A-S using data from schedule 14.a of the PSC Staff's First Request.
- c. Please see attachments.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

**Witness: Brent E. O'Neill, Melissa L. Schwarzell, Scott W. Rungren,
Constance E. Heppenstall**

3. Refer to Kentucky-American's responses to Staff's First Request, Item 13.b and the responses to Items 2.a and 2.b above.
- a. Assuming all other factors are unchanged, recalculate Kentucky-American's forecasted revenue requirement, rate base, capital structure and cost-of-service study to take into account both of the following changes:
- (1) Use the slippage factor calculated in the response to Item 2.a for all monthly forecasted budget projects expenditures beginning September 1, 2018, through the end of the forecasted period, June 30, 2020.
- (2) Use the slippage factor calculated in the response to Item 2.b for all monthly forecasted projects for the recurring capital projects A-S expenditures beginning September 1, 2018, through the end of the forecasted period, June 30, 2020.
- b. Provide copies of all workpapers, state all assumptions, and show all calculations used to determine the effect of the slippage factors to each forecasted element of revenue requirement, rate base, and cost-of-service study.
- c. Provide copies of all schedules, supporting calculations, and documentation requested in Item 3.b in Excel spreadsheet format, with formulas intact and unprotected, and all rows and columns fully accessible.

Response:

Please see the attachment and Excel files. In addition, the workpapers and calculations in Excel format have been provided on a USB flash drive so that all links will be intact. These files are updates from the files provided in the response to Item 1 of the Commission Staff's first request for information, as well as the workpapers and calculations for the cost-of-service study provided in the attachment.

Please see the summary below. Please note that there is a slight change in Rate of Return. In the initial filing, Short-Term Debt was calculated incorrectly. The amount of Short-Term Debt was filed as \$6,780,612, but should have been \$6,721,960. The difference caused the Rate of Return of 8.25% to increase to 8.26%. The Company will provide corrected copies of any impacted exhibits or testimony in late January or early February.

	Original Filing	PSC Slippage
Rate Base	\$441,122,362	\$441,111,572
Rate of Return	8.25%	8.26%
Return	36,392,595	36,435,816
Utility Operating Income	21,650,009	21,591,811
Deficiency Before Gross Up	14,742,586	14,844,005
Gross Up	1.347457	1.347457
Revenue Increase	\$19,865,003	\$20,001,661
AFUDC	\$554,026	\$551,340
Property Taxes	7,032,232	7,039,679
Depreciation & Cost of Removal	18,316,098	18,383,403
Income Tax	7,545,222	7,559,697

KENTUCKY AMERICAN WATER COMPANY
Lexington, Kentucky

COST OF SERVICE
ALLOCATION STUDY
AS OF JUNE 30, 2020

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Harrisburg, Pennsylvania

KENTUCKY AMERICAN WATER COMPANY

COMPARISON OF COST OF SERVICE WITH REVENUES UNDER PRESENT AND PROPOSED RATES
FOR THE TEST YEAR ENDED JUNE 30, 2020

Customer Classification (1)	Cost of Service		Revenues, Present Rates		Revenues, Proposed Rates		Proposed Increase	
	Amount (Schedule B) (2)	Percent (3)	Amount (4)	Percent (5)	Amount (6)	Percent (7)	Amount (8)	Percent Increase (9)
	Residential	\$ 58,287,638	55.2%	\$ 47,551,194	55.7%	\$ 58,459,635	55.4%	\$ 10,908,441
Commercial	27,143,182	25.7%	21,724,229 (a)	25.4%	27,128,329 (a)	25.8%	5,404,100	24.9%
Industrial	3,093,699	2.9%	2,515,892	2.9%	3,095,858	2.9%	579,966	23.1%
Public Authority	7,125,472	6.8%	5,703,375	6.7%	7,123,901	6.8%	1,420,526	24.9%
Sales for Resale	2,075,171	2.0%	1,711,090	2.0%	2,078,311	2.0%	367,221	21.5%
Private Fire Service	2,910,387	2.8%	2,664,721	3.1%	3,011,136	2.9%	346,415	13.0%
Public Fire Service	4,847,722	4.6%	3,611,110	4.2%	4,449,177	4.2%	838,067	23.2%
Total Sales	105,483,271	<u>100.0%</u>	85,481,611	<u>100.0%</u>	105,346,347	<u>100.0%</u>	19,864,736	23.2%
Other Revenues and AFUDC	3,034,555		3,034,555		3,034,555		-	0.0%
Total	<u>\$ 108,517,826</u>		<u>\$ 88,516,166</u>		<u>\$ 108,380,902</u>		<u>\$ 19,864,736</u>	22.4%

(a) Includes Miscellaneous Water Sales.

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Public Authorities	Sales for Resale	Fire Protection		
								Private	Public	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
OPERATION AND MAINTENANCE EXPENSES										
SOURCE OF SUPPLY EXPENSES										
-OPERATION-										
610.1	Purchased Water	1	\$ 252,496	\$ 121,400	\$ 81,884	\$ 13,307	\$ 25,123	\$ 9,191	\$ 783	\$ 808
615.1	Purchased Power	1	69,240	33,291	22,455	3,649	6,889	2,520	215	222
616.1	Fuel for Power Production	2	-	-	-	-	-	-	-	-
675.1	Contracted Services	2	17,691	8,867	5,711	840	1,629	580	32	32
675.1	Grounds Keeping	2	9,283	4,653	2,997	441	855	304	17	17
675.1	Security	2	27,305	13,685	8,814	1,297	2,515	896	49	49
675.1	Miscellaneous Expenses	2	74,315	37,247	23,989	3,530	6,844	2,438	134	134
675.1	Water & WW SS	2	52,137	26,131	16,830	2,477	4,802	1,710	94	94
Total Source of Supply			502,467	245,273	162,679	25,540	48,658	17,639	1,323	1,355
POWER AND PUMPING EXPENSES										
615.1	Purchased Power	1	542,831	260,993	176,040	28,607	54,012	19,759	1,683	1,737
	Misc. Expenses	1	(2,529)	(1,216)	(820)	(133)	(252)	(92)	(8)	(8)
Total Power and Pumping			540,302	259,777	175,220	28,474	53,760	19,667	1,675	1,729
WATER TREATMENT										
-OPERATION-										
601.3	Supervision and Engineering	2	193,212	96,838	62,369	9,178	17,795	6,337	348	348
601.3	Labor Expense	2	3,656,185	1,832,480	1,180,217	173,669	336,735	119,923	6,581	6,581
618.3	Chemicals	1	2,887,866	1,388,486	936,535	152,191	287,343	105,118	8,952	9,241
615.3	Purchased Power	1	3,616,725	1,738,921	1,172,904	190,601	359,864	131,649	11,212	11,574
620.3	M&S Operation	2	-	-	-	-	-	-	-	-
636.3	Contracted Services	2	81,473	40,834	26,299	3,870	7,504	2,672	147	147
635.3	Contracted Services - Lab Testing	2	8,049	4,034	2,598	382	741	264	14	14
675.3	Misc Operating Expense	2	108,139	54,200	34,907	5,137	9,960	3,547	195	195
675.3	Lab Supplies	2	122,996	61,646	39,703	5,842	11,328	4,034	221	221
675.3	Waste Disposal	1	407,483	195,918	132,147	21,474	40,545	14,832	1,263	1,304
675.3	Overnight Shipping	2	22,177	11,115	7,159	1,053	2,043	727	40	40
675.3	Office Supplies and Uniforms	2	51,342	25,733	16,573	2,439	4,729	1,684	92	92
675.3	Electricity WT	2	6,985	3,501	2,255	332	643	229	13	13
675.3	Janitorial WT	2	2,923	1,465	944	139	269	96	5	5
675.3	Trash Removal WT	2	7,884	3,951	2,545	374	726	259	14	14
675.3	Rents WT	2	8,702	4,361	2,809	413	801	285	16	16

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account	Factor Ref.	Cost of Service	Residential	Commercial	Industrial	Public Authorities	Sales for Resale	Fire Protection	
								Private	Public
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
675.3 Telephone WT	2	27,775	13,921	8,966	1,319	2,558	911	50	50
675.3 Cell Phone WT	2	6,032	3,023	1,947	287	556	198	11	11
675.3 Water & WW WT	2	10,901	5,464	3,519	518	1,004	358	20	20
Total Operation		11,226,850	5,485,891	3,634,395	569,218	1,085,142	393,124	29,194	29,885
-MAINTENANCE-									
601.4 Supervision and Engineering	2	-	-	-	-	-	-	-	-
601.4 Labor	2	383,288	192,104	123,725	18,206	35,301	12,572	690	690
620.4 Misc Maint	2	193,204	96,834	62,366	9,177	17,794	6,337	348	348
675.4 M&S Maint WT	2	152,244	76,305	49,144	7,232	14,022	4,994	274	274
675.4 Amort Def Maint WT	2	-	-	-	-	-	-	-	-
Total Maintenance		728,736	365,242	235,236	34,615	67,117	23,903	1,312	1,312
Total Water Treatment Expenses		11,955,586	5,851,133	3,869,631	603,833	1,152,259	417,027	30,506	31,197
TRANSMISSION AND DISTRIBUTION EXPENSES									
-OPERATION-									
601.5 Supervision and Engineering	11	92,967	74,346	13,341	428	2,650	205	1,515	483
601.5 Labor Expense	11	372,981	298,273	53,523	1,716	10,630	821	6,080	1,940
615.5 Purchased Power	11	18,063	14,445	2,592	83	515	40	294	94
601.5 Labor - Lines	7	131,474	62,792	40,823	1,604	10,018	881	7,428	7,928
601.5 Labor - Meters	9	1,380,084	1,145,746	176,099	5,382	33,122	2,484	17,251	-
601.5 Labor - Services	10	-	-	-	-	-	-	-	-
620.5 M&S Operation	11	126,937	101,512	18,215	584	3,618	279	2,069	660
636.5 Contracted Services	11	137,548	109,997	19,738	633	3,920	303	2,242	715
650.5 Transportation	11	165	132	24	1	5	0	3	1
675.5 Office Supplies, Uniforms and Shipping	11	38,788	31,019	5,566	178	1,105	85	632	202
675.5 Misc. Operating Expense	11	154,077	123,215	22,110	709	4,391	339	2,511	801
675.5 Electricity TD	11	76,593	61,251	10,991	352	2,183	169	1,248	398
675.5 Heating Oil/Gas TD	11	-	-	-	-	-	-	-	-
675.5 Trash Removal TD	11	6,365	5,090	913	29	181	14	104	33
675.5 Cell Phone TD	11	3,241	2,592	465	15	92	7	53	17
641.5 Rents	11	10,837	8,666	1,555	50	309	24	177	56
Total Operation		2,550,120	2,039,076	365,955	11,764	72,739	5,650	41,608	13,328
-MAINTENANCE-									
601.6 Labor	12	1,141,909	550,743	260,926	28,205	58,808	17,243	101,059	124,925
601.6 Labor - Structures and Improvements	12	-	-	-	-	-	-	-	-
601.6 Labor - Reservoirs and Standpipes	5	-	-	-	-	-	-	-	-
601.6 Labor - Mains	7	99,146	47,352	30,785	1,210	7,555	664	5,602	5,979
601.6 Labor - Services	10	240,816	198,505	26,418	265	3,347	96	12,185	-
601.6 Labor - Meters	9	69,155	57,412	8,824	270	1,660	124	864	-
601.6 Labor - Hydrants	8	36,622	-	-	-	-	-	-	36,622
620.6 M&S Maint.	12	295,382	142,463	67,495	7,296	15,212	4,460	26,141	32,315

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection		
								Private (9)	Public (10)	
675.6 Misc Maint TD	12	128,048	61,758	29,259	3,163	6,594	1,934	11,332	14,008	
675.6 Amort Def Maint TD	5	1,091,902	438,399	285,751	36,142	66,715	22,275	117,270	125,350	
675.6 Misc Main Pvg/Bckfill	7	(4,570)	(2,183)	(1,419)	(56)	(348)	(31)	(258)	(276)	
Total Maintenance		3,098,410	1,494,449	708,038	76,494	159,544	46,766	274,196	338,923	
Total Transmission and Distribution		5,648,530	3,533,524	1,073,993	88,258	232,283	52,416	315,804	352,251	
CUSTOMER ACCOUNTS										
601.7 Labor - Meter Reading	14	504,584	459,273	35,018	202	3,028	50	7,014	-	
636.7 Contracted Services	13	(1,589)	(1,432)	(109)	(1)	(10)	(0)	(37)	(0)	
601.7 Labor - Customer Accounts	13	419,534	378,168	28,864	168	2,517	42	9,649	126	
670.7 Uncollectible Accounts	20	986,932	871,066	90,600	-	99	-	25,167	-	
650.7 Transportation	14	-	-	-	-	-	-	-	-	
675.7 Telephone CA	13	62,603	56,430	4,307	25	376	6	1,440	19	
675.7 Bank Svc Charges-CA	13	144,373	130,138	9,933	58	866	14	3,321	43	
675.7 Cust Edu-Bill Insert	13	10,270	9,257	707	4	62	1	236	3	
675.7 Office Supplies	13	-	-	-	-	-	-	-	-	
675.7 Collection Agencies	13	460,850	415,410	31,706	184	2,765	46	10,600	138	
675.7 Forms CA	13	139,496	125,742	9,597	56	837	14	3,208	42	
675.7 Postage	13	585,592	527,853	40,289	234	3,514	59	13,469	176	
675.7 Cell Phone CA	13	29,208	26,328	2,010	12	175	3	672	9	
675.7 Misc. Operatiing	13	2,653	2,391	183	1	16	0	61	1	
Total Customers' Accounting and Collecting Expenses		3,344,506	3,000,624	253,104	943	14,244	236	74,799	556	
ADMINISTRATIVE AND GENERAL EXPENSES										
-OPERATION-										
601.8 Administrative & General Salaries	15	(919,509)	(591,888)	(194,936)	(21,792)	(47,079)	(14,528)	(25,838)	(23,447)	
615.8 Purchased Power	15	224,011	144,196	47,490	5,309	11,469	3,539	6,295	5,712	
620.8 M&S Operation	15	51,671	33,261	10,954	1,225	2,646	816	1,452	1,318	
Support Services										
Customer Related	13	1,901,341	1,713,868	130,812	761	11,408	190	43,731	570	
Employee Relatec	16	789,759	486,097	186,857	22,113	48,175	14,847	15,242	16,427	
Water Quality	1	99,674	47,923	32,324	5,253	9,918	3,628	309	319	

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection	
								Private (9)	Public (10)
Other	15	6,928,246	4,459,712	1,468,788	164,199	354,726	109,466	194,684	176,670
632.8 Contracted Services	15	769,295	495,195	163,091	18,232	39,388	12,155	21,617	19,617
642.8 Rents	15	3,006	1,935	637	71	154	47	84	77
650.8 Transportation	15	421,787	271,504	89,419	9,996	21,595	6,664	11,852	10,756
656.8 Insurance - Liability, Vehicle and Othe	15	700,915	451,179	148,594	16,612	35,887	11,074	19,696	17,873
658.8 Workers Compensation	16	66,173	40,729	15,657	1,853	4,037	1,244	1,277	1,376
604.8 Employee Pensions and Benefits	16	2,838,987	1,747,397	671,704	79,492	173,178	53,373	54,792	59,051
666.8 Regulatory Expenses	19	410,186	228,556	104,556	11,813	27,359	7,917	11,362	18,622
675.8 Electricity AG	15	69,659	44,839	14,768	1,651	3,567	1,101	1,957	1,776
675.8 Heating Oil/Gas AG	15	4,468	2,876	947	106	229	71	126	114
675.8 Janitorial AG	15	61,891	39,839	13,121	1,467	3,169	978	1,739	1,578
675.8 Add'l Security Costs	15	59,487	38,292	12,611	1,410	3,046	940	1,672	1,517
675.8 Water & WW AG	15	16,777	10,799	3,557	398	859	265	471	428
675.8 Telephone AG	15	15,230	9,804	3,229	361	780	241	428	388
675.8 Cell Phone AG	15	105,562	67,950	22,379	2,502	5,405	1,668	2,966	2,692
675.8 Shipping, Postage and Printing	15	9,102	5,859	1,930	216	466	144	256	232
675.8 Low Income Pay Program	DA	11,764	11,764	-	-	-	-	-	-
675.8 Miscellaneous General Expense	15	363,757	234,150	77,116	8,621	18,624	5,747	10,222	9,276
675.8 Community Relations	15	154,444	99,416	32,742	3,660	7,908	2,440	4,340	3,938
675.8 Injuries and Damages	16	-	-	-	-	-	-	-	-
675.8 Employee Related Expense	16	199,691	122,910	47,247	5,591	12,181	3,754	3,854	4,154
675.8 Software Licenses	15	165,127	106,292	35,007	3,914	8,455	2,609	4,640	4,211
675.8 Office Supplies and Services	15	88,772	57,143	18,820	2,104	4,545	1,403	2,494	2,264
675.8 Trash Removal AG	15	11,956	7,696	2,535	283	612	189	336	305
675.8 Misc Maint AG	15	374,071	240,790	79,303	8,865	19,152	5,910	10,511	9,539
Total Administrative and General Expenses		15,997,299	10,630,083	3,241,259	356,285	781,858	237,893	402,568	347,353
Total Operation and Maintenance Expenses		\$ 37,988,690	\$ 23,520,414	\$ 8,775,887	\$ 1,103,333	\$ 2,283,062	\$ 744,878	\$ 826,675	\$ 734,441

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection	
								Private (9)	Public (10)
503 DEPRECIATION EXPENSE									
Other P/E Intangibles	17	\$ 100,040	\$ 50,610	\$ 27,591	\$ 2,911	\$ 7,273	\$ 1,941	\$ 3,271	\$ 6,443
Land and Land Rights	2	-	-	-	-	-	-	-	-
Source of Supply Struct & Improv	2	455,774	228,434	147,124	21,649	41,977	14,949	820	820
Collecting & Impounding Reservoirs	1	13,413	6,449	4,350	707	1,335	488	42	43
Lake, River and Other Intakes	2	41,712	20,906	13,465	1,981	3,842	1,368	75	75
SOS and Pumping Equipmen	2	474,059	237,598	153,026	22,518	43,661	15,549	853	853
Water Treatment Pumping Equipmen	2	18,288	9,166	5,903	869	1,684	600	33	33
Supply Mains	2	283,972	142,327	91,666	13,489	26,154	9,314	511	511
Pumping Structures & Improvements	6	250,276	121,108	78,261	8,660	21,273	5,856	7,308	7,809
Power Generation Equipment	6	219,812	106,367	68,735	7,606	18,684	5,144	6,419	6,858
Other Power Production Equipment	6	-	-	-	-	-	-	-	-
Electric Pumping Equipment	6	664,200	321,406	207,695	22,981	56,457	15,542	19,395	20,723
Diesel Pumping Equipment	6	13,954	6,753	4,364	483	1,186	327	407	435
Hydraulic Pumping Equipment	6	315	153	99	11	27	7	9	10
Other Pumping Equipment	6	-	-	-	-	-	-	-	-
Water Treat Structures & Improv	2	1,249,304	626,151	403,275	59,342	115,061	40,977	2,249	2,249
Water Treat Equipment	2	1,739,754	871,965	561,593	82,638	160,231	57,064	3,132	3,132
Water Treat Filter Media	2	20,741	10,396	6,695	985	1,910	680	37	37
T & D Structures & Improvements	7	20,852	9,959	6,475	254	1,589	140	1,178	1,257
T & D Pumping Equipmen	7	49,403	23,595	15,340	603	3,765	331	2,791	2,979
Distrib. Reservoirs & Standpipes	5	371,650	149,217	97,261	12,302	22,708	7,582	39,915	42,665
Transmission & Distribution Mains									
Not Classified - Distribution	4	31,670	15,255	9,954	101	2,337	-	1,945	2,078
Not Classified - Transmission	3	35,945	16,614	10,694	1,574	3,048	1,089	1,413	1,513
4 inch or less	4	225,935	108,833	71,011	723	16,674	-	13,872	14,821
6 inch to 8 inch	4	1,312,315	632,142	412,461	4,199	96,849	-	80,576	86,088
10 inch to 16 inch	3	748,487	345,951	222,675	32,784	63,472	22,679	29,416	31,511
18 inch or Greater	3	1,587,542	733,762	472,294	69,534	134,624	48,103	62,390	66,836
Services	10	792,949	653,628	86,987	872	11,022	317	40,123	-
Meters	9	961,242	798,023	122,655	3,749	23,070	1,730	12,016	-
Meter Installations	9	862,784	716,283	110,091	3,365	20,707	1,553	10,785	-
Hydrants	8	455,146	-	-	-	-	-	-	455,146
General Structures & Improvements	15	282,163	181,629	59,819	6,687	14,447	4,458	7,929	7,195
Office Structures	15	177,132	114,020	37,552	4,198	9,069	2,799	4,977	4,517
Stores Shop and Gar. Structures	15	35,141	22,620	7,450	833	1,799	555	987	896
Miscellaneous Structures & Improv	15	84,953	54,684	18,010	2,013	4,350	1,342	2,387	2,166
Office Furniture and Equipment	15	129,150	83,134	27,380	3,061	6,612	2,041	3,629	3,293
Computers & Peripheral Equipment	15	63,519	40,887	13,466	1,505	3,252	1,004	1,785	1,620
Personal Comp and Periph	15	65,505	42,165	13,887	1,552	3,354	1,035	1,841	1,670
Computers and Periph Other	15	297,684	191,619	63,109	7,055	15,241	4,703	8,365	7,591
Computer Mainframe Software	15	1,190,312	766,204	252,346	28,210	60,944	18,807	33,448	30,353
Computer Mainframe Software BT	15	1,086,155	699,158	230,265	25,742	55,611	17,161	30,521	27,697

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection	
								Private (9)	Public (10)
Computer Software - Personal	15	(10,078)	(6,487)	(2,137)	(239)	(516)	(159)	(283)	(257)
Computer Software - Special Customized	15	199,469	128,398	42,287	4,727	10,213	3,152	5,605	5,086
Computer Software - Special Customized - CIS	13	102,996	92,841	7,086	41	618	10	2,369	31
Other Software	15	39,250	25,265	8,321	930	2,010	620	1,103	1,001
Other Office Equipment	15	(129)	(83)	(27)	(3)	(7)	(2)	(4)	(3)
Transportation Equip-Light Trucks	15	298,181	191,939	63,214	7,067	15,267	4,711	8,379	7,604
Transportation Equip-Heavy Trucks	15	221,642	142,671	46,988	5,253	11,348	3,502	6,228	5,652
Transportation Equip-Cars	15	19,077	12,280	4,044	452	977	301	536	486
Transportation Equip-Other	15	144,778	93,194	30,693	3,431	7,413	2,287	4,068	3,692
Stores Equipment	15	2,784	1,792	590	66	143	44	78	71
Tools, Shop & Garage Equipment	15	161,024	103,651	34,137	3,816	8,244	2,544	4,525	4,106
Laboratory Equipment	2	108,275	54,268	34,951	5,143	9,972	3,551	195	195
Power Operated Equipment	15	36,595	23,556	7,758	867	1,874	578	1,028	933
Communication Equipment - Non-Telephone	15	27,056	17,416	5,736	641	1,385	427	760	690
Remote Control and Instrument	15	270,028	173,817	57,246	6,400	13,825	4,266	7,588	6,886
Communication Equipment - Telephone	15	14,863	9,568	3,151	352	761	235	418	379
Miscellaneous Equipment	15	272,326	175,296	57,733	6,454	13,943	4,303	7,652	6,944
Other Tangible Property	15	9,669	6,224	2,050	229	495	153	272	247
Aquisitions	17	52,348	26,483	14,437	1,523	3,806	1,016	1,712	3,371
Total Depreciation Expense		\$ 18,383,403	\$ 10,431,259	\$ 4,553,281	\$ 504,900	\$ 1,177,068	\$ 338,777	\$ 489,079	889,038
AMORTIZATION EXPENSE									
Amortization of UPAA	18	24,567	12,455	6,763	715	1,784	477	801	1,572
Amortization Expense	18	263,438	133,563	72,524	7,666	19,126	5,111	8,588	16,860
Total Amortizations		288,004	146,018	79,288	8,381	20,909	5,587	9,389	18,432

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection	
								Private (9)	Public (10)
TAXES, OTHER THAN INCOME									
408.1		596,010	366,844	141,016	16,688	36,357	11,205	11,503	12,397
408.1		7,039,679	3,569,117	1,938,024	204,855	511,081	136,570	229,494	450,539
408.1		10,594	5,371	2,917	308	769	206	345	678
408.1		215,933	120,318	55,041	6,219	14,403	4,168	5,981	9,803
412.0		(78,492)	(39,795)	(21,609)	(2,284)	(5,699)	(1,523)	(2,559)	(5,023)
Total Taxes, Other Than Income		7,783,724	4,021,855	2,115,389	225,786	556,911	150,625	244,764	468,394
INCOME TAXES		7,638,189	3,872,562	2,102,794	222,271	554,533	148,181	249,005	488,844
Utility Operating Income Available for Return		36,435,816	18,472,959	10,030,780	1,060,282	2,645,240	706,855	1,187,808	2,331,892
Total Cost of Service		\$ 108,517,826	\$ 60,465,067	\$ 27,657,418	\$ 3,124,954	\$ 7,237,723	\$ 2,094,902	\$ 3,006,720	\$ 4,931,042
Less: Misc. Service									
	19	-	-	-	-	-	-	-	-
	19	96,878	53,980	24,694	2,790	6,462	1,870	2,684	4,398
	19	154,930	86,327	39,492	4,462	10,334	2,990	4,292	7,034
	13	30,840	27,799	2,122	12	185	3	709	9
	13	784,484	707,134	53,972	314	4,707	78	18,043	235
	7	598,864	286,017	185,947	7,306	45,633	4,012	33,836	36,111
	13	765,681	690,185	52,679	306	4,594	77	17,611	230
	13	51,538	46,456	3,546	21	309	5	1,185	15
	18	551,340	279,529	151,784	16,044	40,027	10,696	17,974	35,286
Total Other Water Revenues		3,034,555	2,177,429	514,236	31,255	112,252	19,732	96,333	83,319
Total Cost of Service Related to Sales of Water		\$ 105,483,271	\$ 58,287,638	\$ 27,143,182	\$ 3,093,699	\$ 7,125,472	\$ 2,075,171	\$ 2,910,387	\$ 4,847,722

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS

FACTOR 1. ALLOCATION OF COSTS WHICH VARY WITH THE AMOUNT OF WATER CONSUMED.

Factors are based on the pro forma test year average daily consumption for each customer classification.

Customer Classification <u>(1)</u>	Average Daily Consumption, Thousand Gallons <u>(2)</u>	Allocation Factor <u>(3)</u>
Residential	15,429	0.4808
Commercial	10,406	0.3243
Industrial	1,692	0.0527
Other Public Authority	3,194	0.0995
Sales for Resale	1,169	0.0364
Private Fire Protection	98	0.0031
Public Fire Protection	104	0.0032
Total	<u>32,092</u>	<u>1.0000</u>

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM DAY EXTRA CAPACITY FUNCTIONS.

Factors are based on the weighting of the factors for average daily consumption (Factor 1) and the factors derived from maximum day extra capacity demand for each customer classification, as follows:

Customer Classification <u>(1)</u>	Average Daily Consumption		Maximum Day Extra Capacity		Allocation Factor <u>(6)=(3)+(5)</u>
	Allocation Factor 1 <u>(2)</u>	Weighted Factor <u>(3)=(2)x</u> 0.5714	Allocation Factor <u>(4)</u>	Weighted Factor <u>(5)=(4)x</u> 0.4286	
Residential	0.4808	0.2747	0.5285	0.2265	0.5012
Commercial	0.3243	0.1853	0.3208	0.1375	0.3228
Industrial	0.0527	0.0301	0.0406	0.0174	0.0475
Other Public Authority	0.0995	0.0569	0.0821	0.0352	0.0921
Sales for Resale	0.0364	0.0208	0.0280	0.0120	0.0328
Private Fire Protection	0.0031	0.0018			0.0018
Public Fire Protection	0.0032	0.0018			0.0018
Total	<u>1.0000</u>	<u>0.5714</u>	<u>1.0000</u>	<u>0.4286</u>	<u>1.0000</u>

The derivation of the maximum day extra capacity factors in column 4 and the basis for the column 3 and 5 weightings are presented on the following page.

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 2. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND
 MAXIMUM DAY EXTRA CAPACITY FUNCTIONS, cont.

Customer Classification (1)	Average Daily Consumption, Thousand Gallons (2)	Maximum Day Extra Capacity		
		Factor* (3)	Rate of Flow, Thousand Gallons Per Day (4)=(2)x(3)	Allocation Factor (5)
Residential	15,429	1.00	15,429	0.5285
Commercial	10,406	0.90	9,365	0.3208
Industrial	1,692	0.70	1,184	0.0406
Other Public Authority	3,194	0.75	2,396	0.0821
Sales for Resale	1,169	0.70	818	0.0280
Total	31,890		29,192	1.0000

The weighting of the factors is based on the maximum day ratio of 1.75, based on a review of maximum day ratios experienced during the period 2000 through 2014 (see Schedule D).

	Maximum Day Ratio	Weight
Average Day	1.00	0.5714
Maximum Day Extra Capacity	0.75	0.4286
Total	1.75	1.0000

* Ratio of maximum day to average day minus 1.0.

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE, MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS.

Factors are based on the weighting of the average daily consumption, the maximum day extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Daily Consumption		Maximum Day Extra Capacity		Fire Protection		Allocation Factor
	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)=(2) X	(4)	(5)=(4) X	(6)	(7)=(6) X	(8)=(3)+(5)+(7)
		0.5268		0.3951		0.0781	
Residential	0.4808	0.2533	0.5285	0.2089			0.4622
Commercial	0.3243	0.1708	0.3208	0.1267			0.2975
Industrial	0.0527	0.0278	0.0406	0.0160			0.0438
Other Public Authority	0.0995	0.0524	0.0821	0.0324			0.0848
Sales for Resale	0.0364	0.0192	0.0280	0.0111			0.0303
Private Fire Protection	0.0031	0.0016			0.4831	0.0377	0.0393
Public Fire Protection	0.0032	0.0017			0.5169	0.0404	0.0421
Total	<u>1.0000</u>	<u>0.5268</u>	<u>1.0000</u>	<u>0.3951</u>	<u>1.0000</u>	<u>0.0781</u>	<u>1.0000</u>

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 3. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE,
 MAXIMUM DAY EXTRA CAPACITY AND FIRE PROTECTION FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum day ratio of 1.75 and the average daily system sendout for year ending 2017 of 40.5 MGD. The system demand for fire protection is 10,000 Gallons per minute for 10 hours.

	<u>Ratio</u>	<u>Rate of Flow, (GPD)</u>	<u>Weight</u>
Average Day	1.00	40,472,205	0.5268
Maximum Day Extra Capacity	<u>0.75</u>	<u>30,354,154</u>	<u>0.3951</u>
Subtotal	<u><u>1.75</u></u>	70,826,359	0.9219
Fire Protection		<u>6,000,000</u>	<u>0.0781</u>
Total		<u><u>76,826,359</u></u>	<u><u>1.0000</u></u>

The public and private fire protection allocation factors in column 6 on the previous page are based on the relative potential demands (see Schedule E).

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS.

Factors are based on the weighting of the average daily consumption, the maximum day extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Hourly Consumption			Maximum Hour Extra Capacity		Fire Protection		Allocation Factor
	Thousand Gallons	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	Allocation Factor	Weighted Factor	
(1)	(2)	(3)	(4)=(3) X 0.3502	(5)	(6)=(5) X 0.5252	(7)	(8)=(7) X 0.1246	(9)=(4)+(6)+(8)
Residential	642.9	0.5253	0.1840	0.5668	0.2977			0.4817
Commercial	433.6	0.3543	0.1241	0.3622	0.1902			0.3143
Industrial	5.8	0.0047	0.0016	0.0031	0.0016			0.0032
Other Public Authority	133.1	0.1088	0.0381	0.0679	0.0357			0.0738
Sales for Resale	0.0	0.0000	0.0000	0.0000	0.0000			0.0000
Private Fire Protection	4.1	0.0034	0.0012			0.4831	0.0602	0.0614
Public Fire Protection	4.3	0.0035	0.0012			0.5169	0.0644	0.0656
Total	1,223.8	1.0000	0.3502	1.0000	0.5252	1.0000	0.1246	1.0000

The maximum hour extra capacity factors in column 5 are determined on the next page.

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 4. ALLOCATION OF COSTS ASSOCIATED WITH FACILITIES SERVING BASE AND MAXIMUM HOUR EXTRA CAPACITY FUNCTIONS, cont.

The weighting of the factors is based on the potential demand of general and fire protection service. The bases for the potential demand of general service are the maximum hour ratio of 2.5 and the average daily system sendout for the year ending 2017 of 40.5 MGD. The system demand for fire protection is 10,000 gallons per minute.

	Ratio	Rate of Flow, (GPM)	Weight
Average Hour	1.00	28,106	0.3502
Maximum Hour Extra Capacity	1.50	42,159	0.5252
Subtotal	2.50	70,265	0.8754
Fire Protection		10,000	0.1246
Total		80,265	1.0000

The maximum hour extra capacity factors in column 5 of the previous page are determined as follows:

Customer Classification (1)	Average Hourly Consumption Thousand Gallons (2)	Maximum Hour Extra Capacity		
		Factor* (3)	1,000 Gallons Per Hour (4)=(2)x(3)	Allocation Factor (5)
Residential	642.9	1.90	1,221.5	0.5668
Commercial	433.6	1.80	780.5	0.3622
Industrial	5.8	1.15	6.7	0.0031
Other Public Authority	133.1	1.10	146.4	0.0679
Sales for Resale	0.0	0.90	0.0	0.0000
Total	1,215.4		2,155.1	1.0000

* Ratio of Maximum Hour To Average Hour Minus 1.0.

The public and private fire protection allocation factors in column 7 on the previous page are based on the relative potential demands (see Schedule E).

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH STORAGE FACILITIES.

Factors are based on the weighting of the average hourly consumption, the maximum hour extra capacity demand, and the fire protection demand for each customer classification.

Customer Classification	Average Hourly Consumption			Maximum Hour Extra Capacity		Fire Protection		Allocation Factor
	Thousand Gallons	Allocation Factor	Weighted Factor (4)=(3) X 0.3119	Allocation Factor	Weighted Factor (6)=(5) X 0.4679	Allocation Factor	Weighted Factor (8)=(7) X 0.2202	
(1)	(2)	(3)	(4)=(3) X 0.3119	(5)	(6)=(5) X 0.4679	(7)	(8)=(7) X 0.2202	(9)=(4)+(6)+(8)
Residential	642.9	0.4808	0.1500	0.5373	0.2515			0.4015
Commercial	433.6	0.3243	0.1011	0.3433	0.1606			0.2617
Industrial	70.5	0.0527	0.0164	0.0357	0.0167			0.0331
Other Public Authority	133.1	0.0995	0.0310	0.0644	0.0301			0.0611
Sales for Resale	48.7	0.0364	0.0114	0.0193	0.0090			0.0204
Private Fire Protection	4.1	0.0031	0.0010			0.4831	0.1064	0.1074
Public Fire Protection	4.3	0.0032	0.0010			0.5169	0.1138	0.1148
Total	<u>1,337.2</u>	<u>1.0000</u>	<u>0.3119</u>	<u>1.0000</u>	<u>0.4679</u>	<u>1.0000</u>	<u>0.2202</u>	<u>1.0000</u>

The weighting of the factors is based on the ratio of the capacity required for a 10 hour demand of fire flow, as related to total storage capacity. The calculation is shown on the following page.

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 5. ALLOCATION OF COSTS ASSOCIATED WITH STORAGE FACILITIES, cont.

The weighting of the factors is based on the ratio of the capacity required for a 10 hour demand of fire flow, as related to total storage capacity.

$$\text{Fire Protection Weight} = \frac{10,000 \text{ GPM} \times 60 \text{ Min.} \times 10 \text{ Hrs.}}{27,250,000 \text{ Gallons}} = 0.2202$$

$$\text{General Service Weight} = 1.0000 - 0.2202 = 0.7798$$

The weighting of the average hourly consumption and maximum hour extra demand for general service is based on the maximum hour ratio, as follows:

	Maximum Hour Ratio	Percent	Weight	
Average Hour	1.00	40.00	0.3119	
Extra Capacity Maximum Hour	<u>1.50</u>	<u>60.00</u>	<u>0.4679</u>	
Total	<u><u>2.50</u></u>	<u><u>100.00</u></u>	<u><u>0.7798</u></u>	

Customer Classification	Average Hourly Consumption Thousand Gallons	Factor*	Maximum Hour Extra Capacity	
			1,000 Gallons Per Hour	Allocation Factor
(1)	(2)	(3)	(4)=(2)x(3)	(5)
Residential	642.9	1.9	1,221.5	0.5373
Commercial	433.6	1.8	780.5	0.3433
Industrial	70.5	1.2	81.1	0.0357
Other Public Authority	133.1	1.1	146.4	0.0644
Sales for Resale	<u>48.7</u>	0.9	<u>43.8</u>	<u>0.0193</u>
Total	<u><u>1,328.8</u></u>		<u><u>2,273.3</u></u>	<u><u>1.0000</u></u>

* Ratio of Maximum Hour To Average Hour Minus 1.0.

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 6. ALLOCATION OF COSTS ASSOCIATED WITH POWER AND PUMPING FACILITIES.

Factors are based on the weighting of the maximum daily consumption, Factor 2, the maximum daily consumption with fire, Factor 3, and the maximum hour consumption, Factor 4, for each customer classification, as follows:

Customer Classification	Maximum Daily Consumption		Maximum Daily Consumption w/ Fire		Maximum Hourly Consumption		Allocation Factor
	Allocation Factor 2	Weighted Factor (3)=(2)X 0.4259	Allocation Factor 3	Weighted Factor (5)=(4)X 0.3109	Allocation Factor 4	Weighted Factor (7)=(6)X 0.2632	
(1)	(2)	(3)=(2)X 0.4259	(4)	(5)=(4)X 0.3109	(6)	(7)=(6)X 0.2632	(8)=(3)+(5)+(7)
Residential	0.5012	0.2134	0.4622	0.1437	0.4817	0.1268	0.4839
Commercial	0.3228	0.1375	0.2975	0.0925	0.3143	0.0827	0.3127
Industrial	0.0475	0.0202	0.0438	0.0136	0.0032	0.0008	0.0346
Other Public Authority	0.0921	0.0392	0.0848	0.0264	0.0738	0.0194	0.0850
Sales for Resale	0.0328	0.0140	0.0303	0.0094	0.0000	0.0000	0.0234
Private Fire Protection	0.0018	0.0008	0.0393	0.0122	0.0614	0.0162	0.0292
Public Fire Protection	0.0018	0.0008	0.0421	0.0131	0.0656	0.0173	0.0312
Total	1.0000	0.4259	1.0000	0.3109	1.0000	0.2632	1.0000

The weighting of the factors is based on the horsepower of pumps associated with maximum day facilities, maximum day and fire facilities, and maximum hour facilities, as follows:

	Horsepower of Pumps	Weight
Associated with Maximum Day	10,200	0.4259
Associated with Maximum Day and Fire	7,447	0.3109
Associated with Maximum Hour	6,305	0.2632
Total	23,952	1.0000

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 7. ALLOCATION OF COSTS ASSOCIATED WITH TRANSMISSION AND DISTRIBUTION MAINS

Factors are based on the weighting of the maximum daily consumption with fire, Factor 3, and the maximum hour consumption, Factor 5, for each customer classification, as follows:

Customer Classification	Maximum Daily Consumption w/ Fire		Maximum Hourly Consumption		Allocation Factor
	Allocation Factor 3	Weighted Factor	Allocation Factor 4	Weighted Factor	
(1)	(2)	(3)=(2)X 0.2220	(4)	(5)=(4)X 0.7780	(6)=(3)+(5)
Residential	0.4622	0.1028	0.4817	0.3748	0.4776
Commercial	0.2975	0.0660	0.3143	0.2445	0.3105
Industrial	0.0438	0.0097	0.0032	0.0025	0.0122
Other Public Authority	0.0848	0.0188	0.0738	0.0574	0.0762
Sales for Resale	0.0303	0.0067	0.0000	0.0000	0.0067
Private Fire Protection	0.0393	0.0087	0.0614	0.0478	0.0565
Public Fire Protection	0.0421	0.0093	0.0656	0.0510	0.0603
Total	<u>1.0000</u>	<u>0.2220</u>	<u>1.0000</u>	<u>0.7780</u>	<u>1.0000</u>

The weighting of the factors is based on the total footage of mains, designated as either transmission mains or distribution mains, as follows:

	Total Footage of Mains	Weight
Transmission Mains	2,388,211	0.2220
Distribution Mains	8,370,144	0.7780
Total	<u>10,758,355</u>	<u>1.0000</u>

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 8. ALLOCATION OF COSTS ASSOCIATED WITH FIRE HYDRANTS.

Costs are assigned directly to Public Fire Protection.

Customer Classification (1)	Allocation Factor (3)
Public Fire Protection	1.0000
Total	1.0000

FACTOR 9. ALLOCATION OF COSTS ASSOCIATED WITH METERS.

Factors are based on the relative cost of meters by size and customer classification, as developed on the following page and summarized below.

Customer Classification (1)	5/8" Dollar Equivalentents (2)	Allocation Factor (3)
Residential	123,657	0.8302
Commercial	19,000	0.1276
Industrial	577	0.0039
Other Public Authority	3,581	0.0240
Sales for Resale	271	0.0018
Private Fire	1,862	0.0125
Total	148,948	1.0000

KENTUCKY-AMERICAN WATER COMPANY

BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size	5/8" Dollar Equivalent	Residential		Commercial		Industrial		Other Public Authority		Sales for Resale		Private Fire Protection		Total	
		Number of Meters	Weighting (4)=(2)X(3)	Number of Meters	Weighting (6)=(2)X(5)	Number of Meters	Weighting (8)=(2)X(7)	Number of Meters	Weighting (10)=(2)X(9)	Number of Meters	Weighting (12)=(2)X(11)	Number of Meters	Weighting (14)=(2)X(11)	Number of Meters	Weighting (16)
(1)	(2)	(3)	(4)=(2)X(3)	(5)	(6)=(2)X(5)	(7)	(8)=(2)X(7)	(9)	(10)=(2)X(9)	(11)	(12)=(2)X(11)	(13)	(14)=(2)X(11)	(15)	(16)
5/8	1.0	119,299	119,299	4,603	4,603	6	6	125	125	0	0	1,862	1,862	125,895	125,895
3/4	1.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.8	2,067	3,721	2,425	4,365	4	7	182	328	0	0	0	0	4,678	8,421
1-1/2	3.0	13	39	176	528	2	6	32	96	5	15	0	0	228	684
2	4.0	117	468	2,008	8,032	22	88	405	1,620	4	16	0	0	2,556	10,224
3	12.0	0	0	1	12	0	0	1	12	0	0	0	0	2	24
4	20.0	0	0	30	600	10	200	45	900	6	120	0	0	91	1,820
6	30.0	3	90	14	420	9	270	14	420	4	120	0	0	44	1,320
8	40.0	1	40	11	440	0	0	2	80	0	0	0	0	14	560
Total		<u>121,500</u>	<u>123,657</u>	<u>9,268</u>	<u>19,000</u>	<u>53</u>	<u>577</u>	<u>806</u>	<u>3,581</u>	<u>19</u>	<u>271</u>	<u>1,862</u>	<u>1,862</u>	<u>133,508</u>	<u>148,948</u>

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 10. ALLOCATION OF COSTS ASSOCIATED WITH SERVICES.

Factors are based on the relative cost of services by size and customer classification, as developed on the following page and summarized below.

<u>Customer Classification</u> (1)	<u>3/4" Dollar Equivalents</u> (2)	<u>Allocation Factor</u> (3)
Residential	123,853	0.8243
Commercial	16,487	0.1097
Industrial	159	0.0011
Other Public Authority	2,082	0.0139
Sales for Resale	61	0.0004
Private Fire Protection	<u>7,607</u>	<u>0.0506</u>
 Total	 <u><u>150,249</u></u>	 <u><u>1.0000</u></u>

KENTUCKY-AMERICAN WATER COMPANY

BASIS FOR ALLOCATING SERVICE COSTS TO CUSTOMER CLASSIFICATIONS

Service Size	3/4" Dollar Equivalent	Residential		Commercial		Industrial		Other Public Authority		Sales for Resale		Private Fire Protection		Total	
		Number of Services	Weighting (4)=(2)X(3)	Number of Services	Weighting (6)=(2)X(5)	Number of Services	Weighting (8)=(2)X(7)	Number of Services	Weighting (10)=(2)X(9)	Number of Services	Weighting (12)=(2)X(11)	Number of Services	Weighting (14)=(2)X(11)	Number of Services	Weighting (16)
(1)	(2)	(3)	(4)=(2)X(3)	(5)	(6)=(2)X(5)	(7)	(8)=(2)X(7)	(9)	(10)=(2)X(9)	(11)	(12)=(2)X(11)	(13)	(14)=(2)X(11)	(15)	(16)
3/4	1.00	83,715 *	83,715	4,603	4,603	6	6	125	125	0	0	0	0	88,449	88,449
1	2.00	19,859 *	39,718	2,425	4,850	4	8	182	364	0	0	0	0	22,470	44,940
1-1/2	2.20	13	29	176	387	2	4	32	70	5	11	0	0	228	501
2	3.20	117	374	2,008	6,426	22	70	405	1,296	4	13	75	240	2,631	8,419
4	3.50	0	0	31	109	10	35	46	161	6	21	479	1,677	572	2,003
6	4.00	3	12	14	56	9	36	14	56	4	16	968	3,872	1,012	4,048
8	5.10	1	5	11	56	0	0	2	10	0	0	320	1,632	334	1,703
10	8.90	0	0	0	0	0	0	0	0	0	0	13	116	13	116
12	9.50	0	0	0	0	0	0	0	0	0	0	6	57	6	57
>12	12.70	0	0	0	0	0	0	0	0	0	0	1	13	1	13
Total		103,708	123,853	9,268	16,487	53	159	806	2,082	19	61	1,862	7,607	115,716	150,249

*Adjusted to reflect that approximately 35,584 residential customers are served by 1-inch service lines each serving two residences.

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 11. ALLOCATION OF TRANSMISSION AND DISTRIBUTION OPERATION SUPERVISION AND ENGINEERING AND MISCELLANEOUS EXPENSES.

Factors are based on transmission and distribution operation expenses other than those being allocated, as follows:

Customer Classification	Transmission & Distribution Operating Expenses	Allocation Factor
(1)	(2)	(3)
Residential	\$ 1,208,538	0.7997
Commercial	216,921	0.1435
Industrial	6,986	0.0046
Other Public Authority	43,140	0.0285
Sales for Resale	3,365	0.0022
Private Fire Protection	24,679	0.0163
Public Fire Protection	7,928	0.0052
Total	<u>1,511,558</u>	<u>1.0000</u>

FACTOR 12. ALLOCATION OF TRANSMISSION AND DISTRIBUTION MAINTENANCE SUPERVISION AND ENGINEERING, STRUCTURES AND IMPROVEMENTS, AND OTHER EXPENSES.

Factors are based on transmission and distribution maintenance expenses other than those being allocated, as follows:

Customer Classification	Transmission & Distribution Maintenance Expenses	Allocation Factor
(1)	(2)	(3)
Residential	\$ 739,485	0.4823
Commercial	350,358	0.2285
Industrial	37,830	0.0247
Other Public Authority	78,929	0.0515
Sales for Resale	23,129	0.0151
Private Fire Protection	135,664	0.0885
Public Fire Protection	167,675	0.1094
Total	<u>\$1,533,071</u>	<u>1.0000</u>

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 13. ALLOCATION OF BILLING AND COLLECTING COSTS.

Factors are based on the total number of customers.

Customer Classification	Total Customers	Allocation Factor
(1)	(2)	(3)
Residential	121,500	0.9014
Commercial	9,268	0.0688
Industrial	53	0.0004
Other Public Authority	806	0.0060
Sales for Resale	19	0.0001
Private Fire Protection	3,102	0.0230
Public Fire Protection	38	0.0003
Total	<u>134,786</u>	<u>1.0000</u>

FACTOR 14. ALLOCATION OF METER READING COSTS.

Factors are based on the number of metered customers.

Customer Classification	Total Metered Customers	Allocation Factor
(1)	(2)	(3)
Residential	121,500	0.9102
Commercial	9,268	0.0694
Industrial	53	0.0004
Other Public Authority	806	0.0060
Sales for Resale	19	0.0001
Private Fire Protection	1,862	0.0139
Total	<u>133,508</u>	<u>1.0000</u>

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 15. ALLOCATION OF ADMINISTRATIVE AND GENERAL EXPENSES

Factors are based on the allocation of all other operation and maintenance expenses excluding purchased water, power, chemicals and waste disposal.

Customer Classification	Operation & Maintenance Expenses	Allocation Factor
(1)	(2)	(3)
Residential	\$ 9,152,538	0.6437
Commercial	3,013,483	0.2120
Industrial	337,353	0.0237
Other Public Authority	727,680	0.0512
Sales for Resale	224,007	0.0158
Private Fire Protection	400,007	0.0281
Public Fire Protection	362,211	0.0255
Total	14,217,278	1.0000

FACTOR 15A. ALLOCATION OF CASH WORKING CAPITAL

Factors are based on the allocation of operation and maintenance expenses including purchased water, power, chemicals, waste disposal, and administrative and general expenses.

Customer Classification	Operation & Maintenance Expenses	Allocation Factor
(1)	(2)	(3)
Residential	\$ 23,291,858	0.6199
Commercial	8,671,330	0.2308
Industrial	1,091,520	0.0290
Other Public Authority	2,255,703	0.0600
Sales for Resale	736,961	0.0196
Private Fire Protection	815,313	0.0217
Public Fire Protection	715,818	0.0190
Total	37,578,504	1.0000

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 16. ALLOCATION OF LABOR RELATED TAXES AND BENEFITS.

Factors are based on the allocation of direct labor expense.

Customer Classification (1)	Direct Labor Expense (2)	Allocation Factor (3)
Residential	\$ 4,802,143	0.6155
Commercial	1,845,995	0.2366
Industrial	218,709	0.0280
Other Public Authority	476,086	0.0610
Sales for Resale	146,914	0.0188
Private Fire Protection	150,428	0.0193
Public Fire Protection	162,173	0.0208
Total	7,802,449	1.0000

FACTOR 17. ALLOCATION OF ORGANIZATION, FRANCHISES AND CONSENTS,
 MISCELLANEOUS INTANGIBLE PLANT AND OTHER RATE BASE ELEMENTS.

Factors are based on the allocation of the original cost less depreciation other than those items being allocated, as follows:

Customer Classification (1)	Original Cost Less Depreciation (2)	Allocation Factor (3)
Residential	\$ 265,501,057	0.5059
Commercial	144,768,699	0.2758
Industrial	15,287,755	0.0291
Other Public Authority	38,157,299	0.0727
Sales for Resale	10,192,866	0.0194
Private Fire Protection	17,183,512	0.0327
Public Fire Protection	33,816,229	0.0644
Total	524,907,418	1.0000

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 18. ALLOCATION OF INCOME TAXES AND INCOME AVAILABLE FOR RETURN.

Factors are based on the allocation of the original cost measure of value rate base as shown on the following pages and summarized below.

Customer Classification <u>(1)</u>	Original Cost Measure of Value <u>(2)</u>	Allocation Factor <u>(3)</u>
Residential	\$ 223,628,669	0.5070
Commercial	121,452,569	0.2753
Industrial	12,848,840	0.0291
Other Public Authority	32,007,419	0.0726
Sales for Resale	8,568,138	0.0194
Private Fire Protection	14,393,219	0.0326
Public Fire Protection	<u>28,212,717</u>	<u>0.0640</u>
Total	<u><u>441,111,572</u></u>	<u><u>1.0000</u></u>

FACTOR 19. ALLOCATION OF REGULATORY COMMISSION EXPENSES, ASSESSMENTS AND OTHER WATER REVENUES.

The factors are based on the allocation of the total cost of service, excluding those items being allocated.

Customer Classification <u>(1)</u>	Total Cost of Service <u>(2)</u>	Allocation Factor <u>(3)</u>
Residential	\$ 60,116,193	0.5572
Commercial	27,497,820	0.2549
Industrial	3,106,922	0.0288
Other Public Authority	7,195,961	0.0667
Sales for Resale	2,082,818	0.0193
Private Fire Protection	2,989,377	0.0277
Public Fire Protection	<u>4,902,616</u>	<u>0.0454</u>
Total	<u><u>107,891,708</u></u>	<u><u>1.0000</u></u>

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection	
								Private (9)	Public (10)
RATE BASE									
301.0	17	550,660	278,579	151,872	16,024	40,033	10,683	18,007	35,462
302.0	17	70,261	35,545	19,378	2,045	5,108	1,363	2,298	4,525
339.1	17	180,470	91,300	49,774	5,252	13,120	3,501	5,901	11,622
339.3	17	413,806	209,344	114,128	12,042	30,084	8,028	13,531	26,649
303.2	2	1,113,292	557,982	359,371	52,881	102,534	36,516	2,004	2,004
304.1	2	16,291,306	8,165,203	5,258,834	773,837	1,500,429	534,355	29,324	29,324
305.0	1	522,775	251,350	169,536	27,550	52,016	19,029	1,621	1,673
306.0	2	1,525,801	764,732	492,529	72,476	140,526	50,046	2,746	2,746
309.0	2	13,541,033	6,786,766	4,371,045	643,199	1,247,129	444,146	24,374	24,374
311.5	2	14,727,534	7,381,440	4,754,048	699,558	1,356,406	483,063	26,510	26,510
303.3	6	277,216	134,145	86,685	9,592	23,563	6,487	8,095	8,649
304.2	6	6,742,246	3,262,573	2,108,300	233,282	573,091	157,769	196,874	210,358
310.0	6	6,105,577	2,954,489	1,909,214	211,253	518,974	142,871	178,283	190,494
311.2	6	19,251,415	9,315,760	6,019,917	666,099	1,636,370	450,483	562,141	600,644
311.2	6	227,185	109,935	71,041	7,861	19,311	5,316	6,634	7,088
311.4	6	(2,685)	(1,299)	(839)	(93)	(228)	(63)	(78)	(84)
311.5	6	-	-	-	-	-	-	-	-
303.4	2	800,183	401,052	258,299	38,009	73,697	26,246	1,440	1,440
304.3	2	37,259,428	18,674,425	12,027,343	1,769,823	3,431,593	1,222,109	67,067	67,067
311.5	2	645,648	323,599	208,415	30,668	59,464	21,177	1,162	1,162
320.1	2	48,554,580	24,335,555	15,673,418	2,306,343	4,471,877	1,592,590	87,398	87,398
320.2	2	293,281	146,992	94,671	13,931	27,011	9,620	528	528
303.5	7	7,564,215	3,612,669	2,348,689	92,283	576,393	50,680	427,378	456,122
304.4	7	819,516	391,401	254,460	9,998	62,447	5,491	46,303	49,417
311.5	7	1,662,445	793,984	516,189	20,282	126,678	11,138	93,928	100,245
330.0	5	14,063,816	5,646,622	3,680,501	465,512	859,299	286,902	1,510,454	1,614,526
331.0									
Not Classified - Distribution	4	4,473,511	2,154,890	1,406,025	14,315	330,145	-	274,674	293,462
Not Classified - Transmission	3	5,077,412	2,346,780	1,510,530	222,391	430,564	153,846	199,542	213,759
4 inch or less	4	11,657,277	5,615,310	3,663,882	37,303	860,307	-	715,757	764,717
6 inch to 8 inch	4	81,378,250	39,199,903	25,577,184	260,410	6,005,715	-	4,996,625	5,338,413
10 inch to 16 inch	3	44,015,742	20,344,076	13,094,683	1,927,890	3,732,535	1,333,677	1,729,819	1,853,063
18 inch or Greater	3	65,465,633	30,258,216	19,476,026	2,867,395	5,551,486	1,983,609	2,572,799	2,756,103
333.0	10	8,700,560	7,171,872	954,451	9,571	120,938	3,480	440,248	-
334.0	9	15,148,206	12,576,041	1,932,911	59,078	363,557	27,267	189,353	-
334.0	9	19,728,061	16,378,236	2,517,301	76,939	473,473	35,511	246,601	-
335.0	8	16,461,104	-	-	-	-	-	-	16,461,104
304.5	15	13,907,447	8,952,224	2,948,379	329,606	712,061	219,738	390,799	354,640
340.1	15	2,200,144	1,416,232	466,430	52,143	112,647	34,762	61,824	56,104
340.2	15	5,069,234	3,263,066	1,074,678	120,141	259,545	80,094	142,445	129,265
340.3	13	1,306,231	1,177,436	89,869	522	7,837	131	30,043	392
340.3	15	2,529,726	1,628,384	536,302	59,954	129,522	39,970	71,085	64,508
341.0	15	4,715,751	3,035,529	999,739	111,763	241,446	74,509	132,513	120,252
342.0	15	60,601	39,009	12,847	1,436	3,103	957	1,703	1,545
343.0	15	2,106,334	1,355,847	446,543	49,920	107,844	33,280	59,188	53,712
344.0	2	830,372	416,182	268,044	39,443	76,477	27,236	1,495	1,495
345.0	15	345,165	222,182	73,175	8,180	17,672	5,454	9,699	8,802
346.0	15	2,565,918	1,651,681	543,975	60,812	131,375	40,541	72,102	65,431
347.0	15	4,150,749	2,671,837	879,959	98,373	212,518	65,582	116,636	105,844
348.0	15	65,932	42,440	13,978	1,563	3,376	1,042	1,853	1,681
Plant Acquisition	17	886,218	448,338	244,419	25,789	64,428	17,193	28,979	57,072
Total Plant in Service, Net of Accumulated Depreciation, Contributions and Advances		506,046,580	256,989,853	139,728,146	14,614,644	36,895,500	9,757,423	15,799,704	32,261,310

KENTUCKY AMERICAN WATER COMPANY

COST OF SERVICE FOR THE TWELVE MONTHS ENDED JUNE 30, 2020 ALLOCATED TO CUSTOMER CLASSIFICATIONS

Account (1)	Factor Ref. (2)	Cost of Service (3)	Residential (4)	Commercial (5)	Industrial (6)	Public Authorities (7)	Sales for Resale (8)	Fire Protection	
								Private (9)	Public (10)
OTHER RATE BASE ELEMENTS									
Utility Plant Acquisition Adjustments	17	225,195	113,926	62,109	6,553	16,372	4,369	7,364	14,503
CWIP - Water Treatment Plant and Supply Mains	2	2,652,556	1,329,461	856,245	125,996	244,300	87,004	4,775	4,775
CWIP - T&D Mains	3	2,072,463	957,892	616,558	90,774	175,745	62,796	81,448	87,251
CWIP - Source of Supply	5	56,398	22,644	14,759	1,867	3,446	1,151	6,057	6,475
CWIP - Ground Level Tanks	5	37,599	15,096	9,840	1,245	2,297	767	4,038	4,316
CWIP - Pumping	6	608,277	294,345	190,208	21,046	51,704	14,234	17,762	18,978
CWIP - Meters and Meter Installations	9	271,716	225,578	34,671	1,060	6,521	489	3,396	-
CWIP - Services	10	230,845	190,285	25,324	254	3,209	92	11,681	-
CWIP - Hydrants	8	162,468	-	-	-	-	-	-	162,468
CWIP - Other	15	1,854,756	1,193,907	393,208	43,958	94,964	29,305	52,119	47,296
Working Capital	15A	4,560,789	2,827,233	1,052,630	132,263	273,647	89,391	98,969	86,655
Deferred Income Taxes	17	(90,658,583)	(45,864,177)	(25,003,637)	(2,638,165)	(6,590,879)	(1,758,777)	(2,964,536)	(5,838,413)
Deferred Investment Tax Credits	17	(10,001)	(5,060)	(2,758)	(291)	(727)	(194)	(327)	(644)
Deferred Maintenance - Tank Painting	5	11,816,493	4,744,322	3,092,376	391,126	721,988	241,056	1,269,091	1,356,533
Deferred Debits - Source of Supply	2	1,198,681	600,779	386,934	56,937	110,399	39,317	2,158	2,158
Other Rate Base Elements	17	(14,660)	(7,417)	(4,043)	(427)	(1,066)	(284)	(479)	(944)
Total Other Rate Base Elements		(64,935,008)	(33,361,184)	(18,275,576)	(1,765,804)	(4,888,081)	(1,189,284)	(1,406,485)	(4,048,593)
Total Original Cost Measure of Value		<u>441,111,572</u>	<u>223,628,669</u>	<u>121,452,569</u>	<u>12,848,840</u>	<u>32,007,419</u>	<u>8,568,138</u>	<u>14,393,219</u>	<u>28,212,717</u>

KENTUCKY AMERICAN WATER COMPANY

FACTORS FOR ALLOCATING COST OF SERVICE TO CUSTOMER CLASSIFICATIONS, cont.

FACTOR 20. ALLOCATION OF UNCOLLECTIBLE ACCOUNTS

Factors are based on three years of net charge-offs by customer classification.

Customer Classification (1)	Net Charge-Offs (2)	Allocation Factor (3)
Residential	\$ 2,291,576	0.8826
Commercial	238,241	0.0918
Industrial	54	0.0000
Other Public Authority	383	0.0001
Sales for Resale	28	0.0000
Private Fire	66,118	0.0255
 Total	 2,596,399	 1.0000

KENTUCKY-AMERICAN WATER COMPANY

SUMMARY OF AVERAGE DAY AND PEAK DAY DELIVERY FOR THE YEARS 2000-2017

Year (1)	Annual Sendout (MG) (2)	Average Day (MGD) (3)	Peak Day (MGD) (4)	Date (5)	Max Day Ratio (6)	Max Hour (MGD)	Max Hour Ratio
2017	14,772	40.47	60.50	7/20	1.49		
2016	14,935	40.92	56.19	09/14	1.37		
2015	14,292	39.16	57.58	9/05	1.47		
2014	13,955	38.23	56.89	7/12	1.49	91.800	2.40
2013	13,271	36.36	52.66	9/29	1.45	84.100	2.31
2012	14,310	39.21	68.95	6/30	1.76	96.900	2.47
2011	13,785	37.77	55.82	6/8	1.48	78.900	2.09
2010	14,817	40.60	61.36	9/23	1.51	93.650	2.31
2009	13,905	38.09	53.40	7/17	1.40	76.652	2.01
2008	15,644	42.86	63.09	8/21	1.47	96.576	2.25
2007	15,734	43.11	64.30	6/15	1.49	84.092	1.95
2006	15,619	42.79	67.22	8/7	1.57	82.652	1.93
2005	16,068	44.02	69.65	8/2	1.58	109.398	2.49
2004	14,931	40.91	56.89	6/29	1.39	76.750	1.88
2003	15,005	41.11	61.37	7/8	1.49	83.630	2.03
2002	15,956	43.72	71.82	8/5	1.64	107.500	2.46
2001	14,962	40.99	56.04	6/19	1.37	91.620	2.24
2000	14,565	39.90	66.37	6/13	1.66	85.076	2.13

KENTUCKY AMERICAN WATER COMPANY

BASIS FOR ALLOCATING DEMAND RELATED COSTS OF FIRE SERVICE
 TO PRIVATE AND PUBLIC FIRE PROTECTION CUSTOMER CLASSIFICATIONS

Description (1)	Restrictive Diameters Squared (2)	Quantity (3)	Relative Demand* (4)=(2)x(3)	Allocation Factor (5)
<u>PRIVATE FIRE PROTECTION</u>				
<u>Fire Lines</u>				
2 -inch	4.0	75	450	
3 -inch	9.0	0	0	
4 -inch	16.0	479	11,496	
6 -inch	36.0	968	52,272	
8 -inch	64.0	320	30,720	
10 -inch	100.0	13	1,950	
12 -inch	144.0	6	1,296	
14 -inch	196.0	0	0	
16 -inch	256.0	1	384	
Private Hydrants	27.6	<u>1,240</u>	<u>51,336</u>	
Total Private Fire Protection		<u><u>3,102</u></u>	<u><u>149,904</u></u>	<u><u>0.4831</u></u>
<u>PUBLIC FIRE PROTECTION</u>				
4 -1/4 inch w/ 2-2 1/2, 1-4 1/2	20.3	6,542	132,803	
5 -1/4 inch w/ 2-2 1/2, 1-4 1/2	27.6	<u>1,000</u>	<u>27,600</u>	
Total Public Fire Protection		<u><u>7,542</u></u>	<u><u>160,403</u></u>	<u><u>0.5169</u></u>
Total Fire Protection		<u><u><u>10,644</u></u></u>	<u><u><u>310,307</u></u></u>	<u><u><u>1.0000</u></u></u>

* Relative Demand for Private Fire lines and hydrants are calculated at 1.5 times the Public Fire Relative Demand.

KENTUCKY-AMERICAN WATER COMPANY
 CALCULATION OF MONTHLY SERVICE CHARGES

Cost Function (1)	Cost of Service (2)	Number of Units (3)	Description (4)	Cost Per Unit Per Month (5)
Meters	\$ 11,874,383	147,086	5/8-inch meter equivalents	\$ 6.73
Services	2,870,613	142,642	3/4-inch service equivalents	1.68
Billing & Collecting	8,676,457	131,646	Number of customers	5.49
Unrecovered Public Fire	398,545	147,086	5/8-inch meter equivalents	0.23
Readiness to Service - Mains	<u>8,899,394</u>	131,646	Number of customers	<u>5.63</u>
Total	<u>\$ 23,819,998</u>			<u>\$ 19.76</u>

KENTUCKY-AMERICAN WATER COMPANY
 COMPARISON OF PRESENT AND PROPOSED RATES

SERVICE AREA 1

Meter Charges, Per Month

<u>Meter Size</u>	<u>Present Rate</u>		<u>Proposed Rate</u>
	<u>Residential</u>	<u>Non-Residential</u>	
5/8	\$12.57	\$13.69	\$ 15.00
3/4	18.74	20.46	22.40
1	31.23	34.07	37.30
1-1/2	62.45	68.17	74.70
2	99.92	109.04	119.50
3	187.35	204.47	224.00
4	312.25	340.77	373.40
6	624.50	681.50	746.70
8	999.20	1,090.40	1,194.70

Per Thousand Gallons

<u>Consumption Charges:</u>	<u>Present</u>	<u>Proposed</u>
Residential	\$ 5.059	\$ 6.364
Commercial	\$ 4.412	\$ 5.712
Industrial	\$ 3.834	\$ 4.750
Other Public Authority	\$ 4.053	\$ 5.191
Sales for Resale	\$ 3.837	\$ 4.760

Fire Protection:

<u>Private Fire Line Size</u>	<u>Present Rate Per Month</u>	<u>Proposed Rate Per Month</u>
2	\$ 8.11	\$ 9.16
4	32.67	36.92
6	73.49	83.04
8	130.64	147.62
10	204.18	230.72
12	294.43	332.71
14	423.96	479.07
16	522.81	590.78
Private Fire Hydrant	70.90	80.12
Public Fire Hydrant	\$ 39.90	\$ 49.16

KENTUCKY-AMERICAN WATER COMPANY
 COMPARISON OF PRESENT AND PROPOSED RATES

EASTERN ROCKCASTLE COUNTY SERVICE AREA

Meter Size	Present Rates		
	Minimum Bill	Allowance	Rate per 1,000 Over Minimum Bill
5/8	28.28	2,000	\$ 11.30
3/4	28.28	2,000	\$ 11.30
1	62.87	5,000	\$ 11.30
2	178.17	15,000	\$ 11.30

Meter Size	Proposed Rates	
	Meter Charge	Allowance
5/8	15.00	-
3/4	22.40	-
1	37.30	-
2	119.50	-

Consumption Charges:

Residential	\$	6.3640
Commercial	\$	5.7120

KENTUCKY-AMERICAN WATER COMPANY
 COMPARISON OF PRESENT AND PROPOSED RATES

NORTH MIDDLETON SERVICE AREA

Meter Size	Present Rates	
	Minimum Bill	Allowance
<u>Residential</u>		
All Meter Sizes	\$ 31.52	2,000
Consumption Rate		
First Block - Next 3,000 gallons	\$	12.3300
Second Block - Next 5,000 gallons	\$	11.0700
Third Block - Over 10,000 gallons	\$	9.4800
<u>Non-Residential</u>		
All Meter Sizes	\$ 28.79	2,000
Consumption Rate		
All Usage Over Allowance	\$	17.8700
<u>Sales for Resale</u>		
All Usage Over Allowance	\$	4.5700
Meter Size	Proposed Rates	
	Meter Charge	Allowance
5/8	15.00	-
2	119.50	-
4	373.40	-
<u>Consumption Charges:</u>		Per Thousand Gallons
Residential	\$	6.3640
Commercial	\$	5.7120
Sales for Resale	\$	4.7600

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Brent E. O'Neill

4. Refer to the responses to Staff's First Request, Item 12 and Item 14.a.
- a. The table below lists the total cost, by calendar year, of projects that were constructed but were not included in Kentucky-American's original budgets. Provide a detailed reason for each project that was constructed but not included in the annual budget.

Years	Non-Budgeted Projects
2017	4,815,347
2016	4,750,808
2015	5,134,475
2014	1,691,575
2013	167,292
2012	(254,896)
2011	722,796
2010	2,675,442
2009	261,416
2008	714,448

- b. Provide a copy of Kentucky-American's Comprehensive Planning Study.
- c. Kentucky-American states that the approval of its business plan does not constitute approval of individual projects that were included in the plan. Release and approval of each project is through the Capital Investment Management Committee (CIMC). For each budgeted project approved by the CIMC, but that was not included in Kentucky-American's original budget, provide annual schedules for the years 2008 through 2017 that compares budget cost approved by the CIMC to the actual completed project cost.
- d. Provide any written monthly project approval that was issued by the CIMC in the calendar years 2016 and 2017.
- e. Provide revised budget project schedules for the calendar years 2008 through 2017 that includes budgeted items approved by the CIMC that were not included in the budget originally approved for Kentucky-American.
- f. Refer to the application, the Direct Testimony of Brent E. O'Neill (O'Neill Testimony), page 3, line 13. Kentucky-American states that the last

Comprehensive Planning Study (CPS) was completed in 2013. Provide the estimated completion date of the next CPS study.

Response:

- a. Please see attached.
- b. Please see attachment to AG 1-71.
- c. Please see attached.
- d. Please see attached.
- e. KAWC does not revise the budget plan or schedule throughout the year.
- f. As indicated on page 43 of O'Neill's Testimony, KAWC is in the process of updating the 2012 Comprehensive Planning Study (CPS) and it anticipates that the update will be complete by the middle of 2019.

Kentucky American Water
Case No. 2018-00358
As of 2017

PSC Data Request 2
Schedule 4a and 4c

Type of Filing: X Original Updated Revised
Workpaper Reference No(s):

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
I12-020017	KRS Valve House Rehabilitation Phase 1	18,206	\$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	\$ 1,654,085	\$ 1,307,199
I12-020035	KRS1 - Residual Improvements	136,265	\$ -	This project will provide a near-term and intermediate solution to improve the residual handling at KRS1. Improvements expected are installation of gravity thickeners, upsize or increase number of washwater holding tanks, and create the long-term plan for dewatering at KRS1. Project need is the result of an overloading of the residual's system due to the operational change to address regulatory requirements of THM's formation at the facility and within the distribution system. Due to the excess loading of the sludge lagoons from the WWHTs and Aldrich units, KAW runs the risk of overflowing one or more of the lagoons in to a nearby creek which runs through a sensitive conservation area, or exceeding the NPDES discharge limit for the total suspended solids (TSS).	\$ 4,500,000	\$ 639,371
I12-020040	KRS Valve House Rehabilitation (Phase 2)	690,300	\$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 3 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	\$ 800,000	\$ 900,544
I12-020043	Athens Boonesboro Main Extension	1,078,296	\$ -	This project is phase 1 of the water system improvements along Athens-Boonesboro Road in Fayette County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension of phase 1 and 2 will allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	\$ 2,450,000	\$ 2,447,364
I12-020055	New Circle Rd Main Relocation Phase 2	72,441	\$ -	This project includes the relocation of approximately 1,300 lineal feet of 20 inch water main and 1,500 lineal feet of 12 inch water main in response to the Kentucky Department of Transportation's widening of New Circle Road to increase safety and improve the flow of traffic. The project is located along New Circle Road between Georgetown Road and Boardwalk Avenue in Lexington.	\$ 1,000,000	\$ 205,980
I12-020067	RRS Chemical Facility	185,211	\$ -	This project incorporates several components of chemical storage and delivery to enhance the robustness and reliability of Richmond Road Station (RRS) operations by minimizing the risk of plant shutdown due to insufficient chemical storage and feed. A major component of the project is the transition from chlorine gas and anhydrous ammonia to the safer liquid sodium hypochlorite and aqueous ammonia. The project will combine all of the chemicals used for the treatment of water at RRS, allowing for the consolidated storage and management of chemicals, which will lead to improved safety and efficiency for the operation of RRS.	\$ 10,000,000	\$ 1,418,528
I12-020073	KRS1 Raw Water Intake Pump Replacement	602,048	\$ -	Kentucky Services will be the general contractor and will provide a turn key service to replace raw water pump number 6 at KRS1 that had failed. Kentucky Services will provide a 1250 HP motor, a Floway pump that will be identical to pump number 6, engineering and startup services, materials for install and materials for removal, and will transfer pump from landing on river to site.	\$ 761,700	\$ 792,413
I12-020076	KRS1 - Replace Incline Car	230,480	\$ -	This project will replace the existing incline car at the KRS 1 that was installed in 1956. The incline car is the main means for operators and maintenance personnel to gain access the KRS 1 low service intake pumps and structure. The project will replace the existing incline car with a new installation that will address safety concerns and increase the capacity for moving personnel and equipment to the low service intake pumps and structure.	\$ 1,450,000	\$ 536,008
I12-020077	Millersburg - GAC Filter	343,697	\$ -	This project will install a GAC System to support the Millersburg Water System. The GAC System is needed to mitigate the threat of THM's and HAA's from the Paris Water System. The GAC system also will reduce non-revenue water by decreasing the amount of flushing needed.	\$ 620,000	\$ 798,790
I12-020079	Jacobson Pump Station	115,432	\$ -	This project will include the construction of a powder-activated carbon storage and feed system at the Jacobson Reservoir. Currently the Jacobson Pump Station provides source water from Reservoir 4 to Richmond Road Station, where the raw water is treated for taste and odor through a bag feed system. The construction of the powder-activated carbon feed system at the Jacobson Reservoir will allow operations staff to feed appropriate amounts of powder-activated carbon and treat taste and odor in an efficient manner.	\$ 948,409	\$ 166,003
I12-020086	RRS WTP Sedimentation Basin Improvement	1,191,412	\$ -	This project replaced the sedimentation basin weirs with a submerged weir system. This work improved the hydraulics and water quality for the Richmond Road Station facility. The submerged weir system reduced the amount of floating debris getting onto the filters and improved the performance of the sedimentation basin to provide optimal operation of the filters. The improvements also improved the hydraulic capabilities of the basins and ensured proper water levels during high demand periods for the facility.	\$ 1,375,000	\$ 1,410,172
I12-020090	Brannon Rd Main Relocation	151,559	\$ -	Relocation of approximately 8,308 feet of (24) inch ductile iron water main, hydrants, valves, and related appurtenances, and easement acquisition as part of a state roadway extension by the State Transportation Cabinet.	\$ 1,550,000	\$ 83,645
		4,815,347				

Kentucky American Water
Case No. 2018-00358
As of 2016

PSC Data Request 2
Schedule 4a and 4c

Type of Filing: X Original Updated Revised
Worksheet Reference No(s):

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget	Description	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
I12-020011	New Circle Rd Main Relocation	\$ (257,953)	\$ -	The relocation of 1,730 linear feet of 24-inch main, 2,070 linear feet of 20-inch main, 380 linear feet of 16-inch main, 1,680 linear feet of 12-inch main and 860 linear feet of 8-inch main due to the widening and reconstruction of New Circle Road from Versailles Road to Boardwalk by the Kentucky Transportation Cabinet.	\$ 2,837,872	\$ 2,044,056
I12-020012	KRS High Service Pump #15	\$ 472,113	\$ -	The replacement of KRS1 High Service Pumps #12 and #15 with new Vertical Turbine Pumps, Motors and VFDs.	\$ 1,400,000	\$ 1,199,782
I12-020017	KRS Valve House Rehabilitation #1	\$ (502,394)	\$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	\$ 1,654,085	\$ 1,307,199
I12-020033	KY 341 Interconnect	\$ (2,162)	\$ -	Install approximately 11,000 linear feet of pipe connecting into the 42-inch transmission main coming from KRS-2, providing a hydraulic loop for the northern portion of Kentucky's Central Division. Also, the new main will provide a secondary feed to existing customers.	\$ 1,907,426	\$ 1,307,199
I12-020046	KRS I Raw Water Intake Actuator Repl	\$ 27,255	\$ -	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	\$ 689,982	\$ 706,099
I12-020056	KRS Valve House Rehabilitation (Phase 1.B)	\$ 344,733	\$ -	Renovation and rehabilitation of the Kentucky River Station Valve House 2. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	\$ 1,500,000	\$ 867,228
I12-020057	Sludge Thickener Drive Upgrade	\$ (215,369)	\$ -	The purpose of this project is to increase the torque capacity of the sludge thickener drive at KRS2. Presently, the drive mechanism has failed multiple times due to maximum torque capacity being inadequate for current operating conditions. Additionally, a sludge pump was replaced as part of this project that failed.	\$ 468,000	\$ 306,195
I12-020058	KRS2 Intake Pump Replacement	\$ 778,182	\$ -	This project is for the replacement of two (2) new raw water intake pumps and a redundant flush water system at KRS2 WTP. This includes a study to determine the original intake pumps' failure modes as well as the design, bidding, construction administration and installation of the new pumps.	\$ 1,243,624	\$ 1,386,785
I12-020060	Reeves Drive	\$ 397,245	\$ -	The Reeves Drives were originally installed with the original hydrotreaters at KRS1 in the 1950's and 1960's. Due to the age, the original drive mechanism has now aged to a point where it is no longer possible to buy replacement components for the Reeves Drives that are presently installed. Also, due the current setup and design, the regular maintenance is difficult to perform.	\$ 580,000	\$ 542,905
I12-020062	Deer Lake Main Extension	\$ 945,780	\$ -	This project is necessary to help improve water quality by creating a hydraulic redundancy between two presently dead end water mains.	\$ 1,026,130	\$ 1,120,858
I12-300007	Pete Towles Main Extension	\$ 1,149,430	\$ -	Installation of 16,464 linear feet of 6-inch PVC main to provide redundancy to the Northern District distribution system between Georgetown Road and Claxon Ridge Road	\$ 1,055,750	\$ 1,167,656
I12-020065	KRS1 - Cedar Creek Rd	\$ 291,389	\$ -	The private road to KRS1 is slowly falling into a state of disrepair requiring frequent maintenance and becoming impassable for chemical delivery trucks. This project will restore the entire road with the intent to turn the road over to the county for future maintenance.	\$ 340,000	\$ 282,978
I12-020073	KRS1 Raw Water Intake Pump Replacement	\$ 190,306	\$ -	Kentucky Services will be the general contractor and will provide a turn key service to replace raw water pump number 6 at KRS1 that had failed. Kentucky Services will provide a 1250 HP motor, a Floway pump that will be identical to pump number 6, engineering and startup services, materials for install and materials for removal, and will transfer pump from landing on river to site.	\$ 761,700	\$ 792,413
I12-020074	Athens Boonesboro Main Extension - Phase II	\$ 23,823	\$ -	This project will complete water system improvements along Athens-Boonesboro Road in Fayette County and make various improvements in Clark County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension will occur along Athens-Boonesboro, Quisenberry, Waterworks, Old Stone Church and Combs Ferry roads and allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	\$ 1,750,000	\$ 1,590,878
I12-020075	Richmond Rd Campus - Road Improvements	\$ 50,563	\$ -	This project will improve several of the roads on the Richmond Road campus, in particular, the main drive from the front gate up to the new road going up to the filter building, the road between production and the turn toward field operations, and the road between the three way stop just past the main gate going up to the stop sign near the Dinsmore Gate.	\$ 650,000	\$ 510,088
I12-020076	KRS1 - Replace Incline Car	\$ 140,115	\$ -	This project will replace the existing incline car at the KRS 1 that was installed in 1956. The incline car is the main means for operators and maintenance personnel to gain access the KRS 1 low service intake pumps and structure. The project will replace the existing incline car with a new installation that will address safety concerns and increase the capacity for moving personnel and equipment to the low service intake pumps and structure.	\$ 1,450,000	\$ 547,079
I12-020077	Millersburg GAC Filter	\$ 471,912	\$ -	This project will install a GAC system to support the Millersburg Water System. The GAC System is needed to mitigate the threat of THM's and HAA's from the Paris Water System. The GAC system also will reduce non-revenue water by decreasing the amount of flushing needed.	\$ 621,780	\$ 798,790
I12-300009	Freshwater Source - KRS2 & Low Srvc Pump	\$ 445,840	\$ -	This project will provide a freshwater line for both KRS2 and the low service pumps. The new closed bearings required a freshwater source. The new line provided redundancy for the bearings and chemical feeds located in the intake building.	\$ 486,294	\$ 507,433
		4,750,807	0			

Kentucky American Water
Case No. 2018-00358
As of 2015

PSC Data Request 2
Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Type of Filing: X Original Updated Revised
Workpaper Reference No(s):

Item	Description	Annual Actual	Annual Original Budget	Approved	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
I12-020010	Leestown Road	\$ (2,903)	\$ -	The relocation of 8,184 lineal feet of 16-inch main, 511 lineal feet of 12-inch main and 1,419 lineal feet of 8 inch main due to the widening and reconstruction of Leestown Road from New Circle Road to Mastererson Station Park by the Kentucky Transportation Cabinet.	\$ 2,181,774	\$ 2,058,699
I12-020012	KRS High Service Pumps	\$ 727,565	\$ -	The replacement of KRS1 High Service Pumps #12 and #15 with new Vertical Turbine Pumps, Motors and VFDS.	\$ 1,400,000	\$ 1,254,840
I12-020017	KRS Valve House Rehabilitation	\$ 964,373	\$ -	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	\$ 1,654,085	\$ 1,307,199
I12-020056	KRS Valve House 2	\$ 496,064	\$ -	Renovation and rehabilitation of the Kentucky River Station Valve House 2. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	\$ 1,500,000	\$ 867,227
I12-020045	Main Office Roof Replacement	\$ 2,506	\$ -	This project addressed the roof of the administration office for Kentucky American Water at 2300 Richmond Road that had reached and exceeded its design life. Prior to the project water leakage from the roof had become an increasing issue due to the roof being approximately 30 years old. The project removed the existing roof system and replaced it with a new EPDM membrane roof and add additional insulation to assist with energy efficiency. In addition replacement of the skylights was accomplished along with other minor improvements associated with the building gutters and penthouse structure.	\$ 405,875	\$ 393,807
I12-020046	KRS I Raw Water Intake Actuator Repl	\$ 191,174	\$ -	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	\$ 689,982	\$ 706,099
I12-020047	Field Ops Road Replacement	\$ 18,809	\$ -	This project includes the design, bid and reconstruction of approximately 1,320 feet of 21 ft wide roadway from the Field Operations center at the Richmond Road Facilities to the first three-way intersection. Existing roadway in a state of deterioration.	\$ 327,458	\$ 352,752
I12-020048	Security Upgrades Richmond Rd Campus	\$ 31,242	\$ -	Add enterprise security upgrades at the office building and distribution building at RICHMOND ROAD WTP, in LEXINGTON, KY. This includes access control, intrusion detection, and cameras with associated wiring and infrastructure.	\$ 429,450	\$ 459,754
I12-020057	Sludge Thickener Drive Upgrade	\$ 521,564	\$ -	The purpose of this project is to increase the torque capacity of the sludge thickener drive at KRS2. Presently, the drive mechanism has failed multiple times due to maximum torque capacity being inadequate for current operating conditions. Additionally, a sludge pump was replaced as part of this project that failed.	\$ 468,000	\$ 306,195
I12-020058	KRS2 Intake Pump Replacement	\$ 601,163	\$ -	This project is for the replacement of two (2) new raw water intake pumps and a redundant flush water system at KRS2 WTP. This includes a study to determine the original intake pumps' failure modes as well as the design, bidding, construction administration and installation of the new pumps.	\$ 1,243,624	\$ 1,386,785
I12-020059	KRS2 Transfer Switch	\$ 66,400	\$ -	This project is for the design of an automatic transfer switch (ATS) for Kentucky River Station 2 (KRS-2) to transfer from 5 KV utility power to the standby generator and back to utility power. This process is currently accomplished by manual transfer and re-transfer.	\$ 1,007,467	\$ 67,561
I12-020060	KRS Reeves Drive	\$ 5,740	\$ -	The Reeves Drives were originally installed with the original hydrotreaters at KRS1 in the 1950's and 1960's. Due to the age, the original drive mechanism has now aged to a point where it is no longer possible to buy replacement components for the Reeves Drives that are presently installed. Also, due the current setup and design, the regular maintenance is difficult to perform.	\$ 580,000	\$ 584,741
I12-300003	Northern Division Connection	\$ 49,119	\$ -	Construction of approximately 84,600 lineal feet of 16-inch main along US 127 from KRS II to Owenton to allow for the retirement of the Owenton Water Treatment Plant. The project will also include the construction of a 2 MGD booster station with a 300,000 gallon elevated storage tank north of Monterey and the construction of a 600,000 gallon elevated storage tank within Owenton	\$ 14,358,853	\$ 15,308,044
T12-0102	Business Transformation	\$ (228,820)	\$ -			
R12-K	ITS Centrally Sponsored	\$ 1,690,479	\$ -			
		5,134,475	0			

Kentucky American Water
Case No. 2018-00358
As of 2014

PSC Data Request 2
Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Type of Filing: X Original _____ Updated _____ Revised _____
Workpaper Reference No(s): _____

Item	Description	Annual Actual	Annual Original Budget	Description	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
I12-020001	WTP for Pool 3	\$ 33,935	\$ -	This project includes a new water treatment plant with a reliable capacity of 20 MGD, raw water intake, raw water pump station, raw water main, approx 31 miles of finished water main, 20 MGD pump station, 3 MG storage tank and system improvements.	\$ 162,297,120	\$ 164,195,640
I12-020025	Pump Efficiency Repl Phase 1	\$ 18,370	\$ -	The Jacobson Reservoir Pump Station (JRPS) transfers raw water from the Jacobson Reservoir to the Richmond Road Station (RRS) for treatment. The pumping equipment, electrical systems, and permanganate feed system are in need of replacement, including new pumps and motors, new 480-volt electrical service, a bulk liquid sodium permanganate feed system, and a sodium permanganate application point on the pump station discharge main. All three pumping units will be replaced with new horizontal split case centrifugal pumps, each of equivalent capacity. The pumps will be sized to deliver at least 16.7 mgd with one unit out of service, and 25 mgd with all units in service operating at full speed. Chemical improvements will include the existing dry potassium permanganate system being replaced with a liquid sodium permanganate (40% solution) system and related feed equipment. Raw water flow metering will be installed to measure raw water flow into Jacobson Reservoir from the Kentucky River Station I (KRS I)	\$ 3,545,584	\$ 3,542,396
I12-020027	Russell Cave Rd	\$ (2,188)	\$ -	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	\$ 749,989	\$ 564,634
I12-020045	Main Office Roof Replacement	\$ 391,301	\$ -	This project addressed the roof of the administration office for Kentucky American Water at 2300 Richmond Road that had reached and exceeded its design life. Prior to the project water leakage from the roof had become an increasing issue due to the roof being approximately 30 years old. The project removed the existing roof system and replaced it with a new EPDM membrane roof and add additional insulation to assist with energy efficiency. In addition replacement of the skylights was accomplished along with other minor improvements associated with the building gutters and penthouse structure.	\$ 405,875	\$ 393,807
I12-020046	KRS I Raw Water Intake Actuator Repl	\$ 487,670	\$ -	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	\$ 689,982	\$ 706,099
I12-020047	Field Ops Road Replacement	\$ 333,943	\$ -	This project includes the design, bid and reconstruction of approximately 1,320 feet of 21 ft wide roadway from the Field Operations center at the Richmond Road Facilities to the first three-way intersection. Existing roadway in a state of deterioration. Add enterprise security upgrades at the office building and distribution building at RICHMOND ROAD WTP, in LEXINGTON, KY. This includes access control, intrusion detection, and cameras with associated wiring and infrastructure.	\$ 327,458	\$ 352,752
I12-020048	Security Upgrades Richmond Rd Campus	\$ 428,512	\$ -		\$ 429,450	\$ 459,754
T12-0103	Business Transformation Other	\$ 32	\$ -			
		1,691,575	0			

Kentucky American Water
Case No. 2018-00358
As of 2013

PSC Data Request 2
Schedule 4a and 4c

Type of Filing: X Original ___ Updated ___ Revised ___
Workpaper Reference No(s): _____

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget		Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
				Description		
I12-020001	New WTP On Pool 3 of Kentucky	\$ 29,379	\$ -	This project includes a new water treatment plant with a reliable capacity of 20 MGD, raw water intake, raw water pump station, raw water main, approx 31 miles of finished water main, 20 MGD pump station, 3 MG storage tank and system improvements.	\$ 162,297,120	\$ 164,195,640
I12-020009	US 25 Relocation - Item 7-122.50	\$ (1,612,868)	\$ -	The relocation of 3546 linear feet of 24-inch main, 1,004 linear feet of 16-inch main, 11,242 linear feet of 12-inch main and 781 linear feet of 8-inch main due to the widening and reconstruction of US 25 (Georgetown Road) from Ironworks Pike and the Georgetown By-Pass by the Kentucky Transportation Cabinet.	\$ 1,147,026	\$ 1,079,811
I12-020010	Leestown Road - Item 7-223.00	\$ 1,284,533	\$ -	The relocation of 8,184 linear feet of 16-inch main, 511 linear feet of 12-inch main and 1,419 linear feet of 8 inch main due to the widening and reconstruction of Leestown Road from New Circle Road to Mastererson Station Park by the Kentucky Transportation Cabinet.	\$ 1,823,761	\$ 2,058,699
I12-020027	Russell Cave Rd Sys Improvements	\$ 38,957	\$ -	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	\$ 749,989	\$ 564,634
I12-020032	RRS Filter Building Replacement	\$ 54,256	\$ -	The filter piping gallery at the Richmond Road Station was in very poor condition and requires extensive upgrades or replacement. Significant amount of pipe, pipe fittings, valves, and electrical equipment located in the filter pipe gallery was in need of replacement due to corrosion. Additionally, the filter piping gallery was also congested that made the maintenance required to keep the facility in full operation extremely difficult resulting in diminished operating capacity of the filters. Due to the extensive improvements needed to address the deficiencies noted above, it was recommended a new filter building and chlorine contact basin be constructed.	\$ 15,609,446	\$ 17,320,484
I12-020033	KY 341 Interconnect	\$ 86,925	\$ -	Install approximately 11,000 linear feet of pipe connecting into the 42-inch transmission main coming from KRS-2, providing a hydraulic loop for the northern portion of Kentucky's Central Division. Also, the new main will provide a secondary feed to existing customers.	\$ 1,907,426	\$ 1,303,436
I12-020034	RRS Chlorine Scrubber	\$ 291,365	\$ -	Richmond Road Station (RRS) was equipped with an existing liquid caustic scrubber which is designed to neutralize chlorine gas that may be emitted during an accidental chlorine gas leak. The previous scrubber was located on a concrete slab behind the chlorine storage building and was sized to neutralize the contents of one completely full one-ton chlorine cylinder during an accidental release. Years of weather exposure have caused many of the crucial system components to become inoperable making reliability of the unit questionable. The project will replace the aging RRS liquid caustic scrubber with a dry media type scrubber similar to the unit installed at Kentucky River Station Plant 2. The new scrubber will reduce ongoing maintenance expense and increases reliability.	\$ 450,000	\$ 311,705
I12--010001	IP Project Unbudgeted Capital	\$ (5,255)				
		167,292	0			

Kentucky American Water
 Case No. 2018-00358
 As of 2012

PSC Data Request 2
 Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Type of Filing: X Original _____ Updated _____ Revised _____
 Workpaper Reference No(s): _____

Item	Description	Annual Actual	Annual Original Budget		Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
				Description		
I12-02001	New WTP On Pool 3 of Kentucky	\$ 2,854	\$ -	This project includes a new water treatment plant with a reliable capacity of 20 MGD, raw water intake, raw water pump station, raw water main, approx 31 miles of finished water main, 20 MGD pump station, 3 MG storage tank and system improvements.	\$ 162,297,120	\$ 164,195,640
I12-020027	Russell Cave Road Sys Impr	\$ 89,292	\$ -	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	\$ 749,989	\$ 564,634
IP-1232-3	Northern Division Connection	\$ (346,828)	\$ -	Construct approx. 84,600ft of 16" DI main along US 127 from KRSII WTP to Owenton. Construct a 2MGD booster station with a 300,000 gallon elevated storage tank north of Monterey. Construct a 600,000 gallon elevated storage tank in Owenton.	\$ 14,104,868	\$ 15,308,044
CS-1201-1	Business Transformation CPS	\$ -	\$ -	Comprehensive review of major business process areas including back office, operation and HR to determine opportunities for improvement of those areas.	\$ 249,865	\$ 212,040
I12-010001	IP Project Unbudgeted Capital	\$ (214)			Project Cancelled	
		(254,896)	0			

Kentucky American Water
Case No. 2018-00358
As of 2011

PSC Data Request 2
Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Type of Filing: X_Original _____ Updated _____ Revised _____
Workpaper Reference No(s): _____

Item	Description	Annual Actual	Annual Original Budget	Approved	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
12020204	Source of Supply Project Dev	\$ -		Project established to facilitate water supply project plan development including the current Kentucky Public Service Commission proceeding and the Bluegrass Water Supply Consortium regional study efforts.	\$ 1,364,872	\$ 2,749
IP-1202-5	North Broadway Main Replacement	\$ (79,129)		Construction of 5,400 LF of 12" pipe along North Broadway from Church Street to Loudon Avenue to replace an existing 6" main which was installed between 1885 and 1935. The existing main is no longer sufficient to carry needed fire flows.	\$ 3,136,145	\$ 3,059,378
IP-1202-17	South Limestone Replacement	\$ (108)		Existing 6" and 8" mains dating back over 100 years no longer provide adequate flows to the downtown district. Replace existing 6" and 8" CI mains with approx 5,100 LF of 12: DI main along Limestone street.	\$ 532,854	\$ 549,959
IP-1202-32	Lexington Operations Center	\$ 138,043		Operations Center - Richmond Rd Campus	\$ 2,756,632	\$ 2,808,876
IP-1202-38	Russell Cave Road Sys Impr	\$ 447,814		Currently the 1.0MG Russell Cave pumped storage tank operates with a 1 MGD pump and cannot support the Northern counties HS zone while Muddy Ford is taken out of service for maintenance. It is recommended to install 3 control valves on two 8-inch and one 12-inch main south of the Russell Cave tank, install a pressure reducing valve north of Russell Cave tank and install a flow control valve north of Newtown booster.	\$ 749,989	\$ 564,634
CS-1201-4	Business Transformation Other	\$ 300,972		Process/system enhancements will result in significant redesign of the company's financial (including Sarbanes-Oxley related controls), operational and regulatory controls.	\$ 784,479	\$ 1,000,691
IP-1232-1	Owenton Chemical Bulk Storage/Owenton Post Acquisition Phase 2	\$ (83,705)			Project Cancelled	
IP-1201-9	IP Project Unbudgeted Capital	\$ (1,091)			Project Cancelled	
		\$ 722,796				

Kentucky American Water
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As of 2010

PSC Data Request 2
Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Type of Filing: Original Updated Revised
Workpaper Reference No(s): _____

Item	Description	Annual Actual	Annual Original Budget		Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
				Description		
12020702	KY Major Highway	\$ (91,967)	\$ -	Relocate approx. 12,000 ft. of existing main on Leestown Road, relocate approx. 8,000 ft. of existing main on Liberty/Todds Road, relocate approx. 11,000 ft. of existing main on KY 922/Newtown Pike, and relocate approx. 12,500 ft. of existing main on US 25/Georgetown Road. It is also recommended to upsize the mains where it is needed to accommodate the proposed Pool 3 WTP and transmission mains.	\$ 2,408,191	\$ 1,593,658
IP-1202-6	Carrick Pike Main Extension	\$ 41,893	\$ -	Approximately 27,400' of 16" main along Carrick Rd and Stone Rd	Project Cancelled	
IP-1202-19	Leestown Road	\$ 243,564	\$ -	Relocate approx 9,900' of existing main on Leestown Rd, directed by KY Transportation Cabinet	\$ 1,823,761	\$ 2,058,699
IP-1202-32	Lexington Operations Center	\$ 2,670,832		Operations Center - Richmond Rd Campus	\$ 2,756,632	\$ 2,808,876
CS-1201-1	Business Transformation CPS	\$ 984	\$ -	Process/system enhancements will result in significant redesign of the company's financial (including Sarbanes-Oxley related controls), operational and regulatory controls.	\$ 784,479	\$ 1,000,691
IP-1201-10	Unallocated Eng Clearing	\$ (943)			Project Cancelled	
12020201	Leestown Rd Main Improvements	\$ (150,955)	\$ -	Design and construction of 10,000 ft of 16" water main along Leestown Rd to improve fire flows and increase distribution system reliability. Install an additional 33,000 ft of 16" water main along Leestown Rd.	\$ 166,147	\$ 15,192
12020402	KY Major Highway Relocations	\$ (36,977)	\$ -	Relocate mains in conflict with KY DOT road realignment	\$ 2,998,150	\$ 3,226,921
IP-1201-9	IP Project Unbudgeted Capital	\$ (989)	\$ -		Project Cancelled	
		\$ -	\$ -			
		2,675,442	0			

Kentucky American Water
Case No. 2018-00358
As of 2009

Type of Filing: X Original ___ Updated ___ Revised
Workpaper Reference No(s): _____

PSC Data Request 2
Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Item	Description	Annual Actual	Annual Original Budget		Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS				Description		
02-02	2002 MAJOR HIGHWAY RELOCATIONS	\$ 19,206	\$ -	Various highway relocations (Paris Pk, Reynolds Rd, Richmond Rd, Harrodsburg Rd) at the direction of the KY DOT	\$ 2,650,000	\$ 3,635,145
03-02	MAJOR HIGHWAY RELOCATIONS	\$ 267,429	\$ -	Various highway relocations (Wellington Wy, Reynolds Rd, Loudon Ave, Harrodsburg Rd) at the direction of the KY DOT	\$ 700,000	\$ 975,887
06-02	YARNALLTON ROAD MAIN EXTENSION	\$ (1,929)	\$ -	Construction of approximately 4,655 LF of 8-inch DI main along a portion of Yarnallton Road and Kearney Road to tie in two dead end mains, thus improving water quality in the system.	\$ 497,727	\$ 442,281
12020702	MAJOR HIGHWAY RELOCATIONS 2007	\$ (23,290)	\$ -	Relocate approx. 12,000 ft. of existing main on Leestown Road, relocate approx. 8,000 ft. of existing main on Liberty/Todds Road, relocate approx. 11,000 ft. of existing main on KY 922/Newtown Pike, and relocate approx. 12,500 ft. of existing main on US 25/Georgetown Road. It is also recommended to upsize the mains where it is needed to accommodate the proposed Pool 3 WTP and transmission mains.	\$ 2,408,191	\$ 1,593,658
		\$ 261,416				

Kentucky American Water
Case No. 2018-00358
As of 2008

PSC Data Request 2
Schedule 4a and 4c

Witness Responsible:
Brent O'Neill

Type of Filing: X Original ___ Updated ___ Revised
Workpaper Reference No(s): _____

Item	Description	Annual Actual	Annual Original Budget	Description	Approved by CIM Committee	Actual Project Cost
BUDGET PROJECTS						
02-02	2002 MAJOR HIGHWAY RELOCATIONS	\$ 40	\$ -	Various highway relocations (Paris Pk, Reynolds Rd, Richmond Rd, Harrodsburg Rd) at the direction of the KY DOT	\$ 2,650,000	\$ 3,635,145
03-01	ELEVATED STORAGE TANK - 2.0 MG	\$ (31)	\$ -	Design and construct a two (2) million gallon elevated storage tank in the eastern Fayette County section of the distribution system to provide fire flows and system reliability, and to equalize demands within the system.	\$ 3,000,000	\$ 3,757,947
03-03	ELECTRICAL & RELIABILITY IMPROVEMENTS	\$ 337	\$ -	Design and coordinate electrical reliability improvements at Kentucky River Station	\$ 1,315,985	\$ 1,024,969
04-03	OWEN COUNTY MAIN EXTENSIONS (343)	\$ 316,963	\$ -	Install 25,000 feet of 8-, 6- and 4-inch mains in Owen County	\$ 2,149,998	\$ 2,296,507
05-02	RUSSELL CAVE ROAD MAIN - 34,000' OF 12" (343)	\$ (196)	\$ -	Approximately 26,000 feet of 12-inch main is necessary to install to the south and east of the Russell Cave Rd Tank in order to maximize the use of the tank and stabilize pressures in the northern parts of the system.	\$ 1,324,851	\$ 1,326,034
05-05	REPLACE TRAC-VAC SYSTEM AT RRS (332)	\$ 96,037	\$ -	The design of the the improvement or replacement of the TracVac system as well as the downstream residuals handling. This project is necessary to improve the plant's ability to treat river water.	\$ 1,149,197	\$ 1,276,263
06-01	VALVE HOUSE UPGRADES AT KRS	\$ (38,142)	\$ -	This task order covers cost to design the upgrads to the KRS valve houses	\$ 380,777	\$ 433,037
06-02	YARNALLTON ROAD MAIN EXTENSION	\$ 414,412	\$ -	Construction of approximately 4,655 LF of 8-inch DI main along a portion of Yarnallton Road and Kearney Road to tie in two dead end mains, thus improving water quality in the system.	\$ 497,727	\$ 442,281
06-04	OWEN COUNTY SCADA SYSTEM	\$ 3,005	\$ -	This task order covers cost to design and install a SCADA system for KAW's Northern Division in Owen County	\$ 574,097	\$ 617,582
06-05	MALLARD POINT PRESSURE	\$ 270	\$ -	This task order is for the design of the Mallard Point Pressure Improvement project.	\$ 339,396	\$ 322,809
06-06	PARKER'S MILL PUMP & DIESEL	\$ (394)	\$ -	Design for the replacement of one pump and the installation of a second pump along with switchgear equipment, diesel generator, and appropriate SCADA equipment for the Parkers Mill Road Tank.	\$ 774,258	\$ 806,739
12020702	MAJOR HIGHWAY RELOCATIONS 2007	\$ (102,688)	\$ -	Relocate approx. 12,000 ft. of existing main on Leestown Road, relocate approx. 8,000 ft. of existing main on Liberty/Todds Road, and relocate approx. 11,000 ft. of existing main on KY 922/Newtown Pike, and relocate approx. 12,500 ft. of existing main on US 25/Georgetown Road. It is also recommended to upsize the mains where it is needed to accommodate the proposed Pool 3 WTP and transmission mains.	\$ 2,408,191	\$ 1,593,658
1202-6	CARRICK ROAD MAIN EXTENSION	\$ 62,506	\$ -	Approximately 27,400' of 16" main along Carrick Rd and Stone Rd	Project cancelled	
12320507	CHEMICAL FEED IMPROVEMENTS	\$ (37,670)	\$ -	The design of the post acquisition improvements to the Owenton WTP. Also included is the installation of a venturi meter for NRW computation and ultimate chemical feed control.	\$ 459,822	\$ 452,616

\$ 714,448

4d. Provide any written monthly project approval that was issued by the CIMC in the calendar year 2016 and 2017.

All new IP projects are brought forth in the monthly CIM meetings and approved by the CIM Committee members. The final approval is signed by KAW President.

2017

I12-020017 – KRS Valve House Rehabilitation Phase 1

7.2 I12-020017

KRS Valve House Rehab Ph 1

Implementation Stage

Original Total Project Cost: \$803,264

Requesting Total Project Cost \$1,654,085 - **Approved**

Chief D. Norton 03/25/15

I12-020035 – KRS1 Residual Improvements**IP Approval****New**

<u>Project</u>	<u>Project #</u>	<u>Stage</u>	<u>Stage Cost</u>	<u>Overall Project Cost</u>
KRS1 - Residual Handling	I12-020035	Preliminary	\$350,000	\$4,500,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	12/15/2018		12/31/2018	



7/28/17

I12-020055 – New Circle Rd Main Relocation – Phase 2**7. IP and CS Funding Project Approvals**

Project	Project #	Stage	Stage Cost	Overall Project Cost
New Circle Rd Main Relocations Phase 2	I12-020055	Implementation	\$1,000,000	\$1,000,000
	Estimated In-Service		Estimated Completion	
	8/30/2019		8/30/2019	


8/24/K6

I12-020040 – KRS Valve House Rehabilitation – Phase 2

7. IP and CS Funding Project Approvals


Project	Project #	Stage	Stage Cost	Overall Project Cost
KRS Valve House Rehabilitation Phase 2	I12-020040	Implementation	\$800,000	\$800,000
		<u>Estimated In-Service</u>		<u>Estimated Completion</u>
		4/30/2017		5/31/2017

~~4/9/14~~
6/27/14

I12-020043 – Athens Boonesboro Main Extension

7. IP and CS Funding Project Approvals

Project	Project #	Stage	Stage Cost	Overall Project Cost
Athens Boonesboro	I12-020043	Implementation	\$1,676,998	\$1,676,998
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	12/15/2016		12/31/2016	


2/28/16

7. IP and CS Funding Project Approvals

IP - Reapproval

Project	Project #	Stage	Stage Cost	Overall Project Cost	Notes
Athens Boonesboro Main Extension	I12-020043	Implementation	\$2,150,000	\$2,450,000	An additional 3,500 linear feet of main was needed due to the 6" main being located further west than maps indicated.
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>		
	5/1/2017		5/31/2017		


4/27/17

I12-020067 - RRS Chemical Facility**7. IP and CS Funding Project Approvals****IP Approval****New**

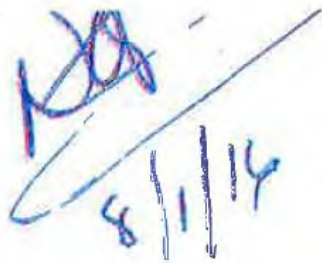
Project	Project #	Stage	Stage Cost	Overall Project Cost
RRS Chemical Facility	I12-020067	Preliminary	\$1,452,000	\$10,000,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	5/31/2020		12/31/2020	



7/28/17


I12-020073 – KRS1 RWI Pump Replacement**7. IP and CS Funding Project Approvals**

<u>Project</u>	<u>Project #</u>	<u>Stage</u>	<u>Stage Cost</u>	<u>Overall Project Cost</u>
KRS1 RWI Pump Replacement	I12-020073	Implementation	\$761,700	\$761,700
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	4/15/2017		5/15/2017	

Handwritten signature in blue ink, possibly reading 'KSA', with a date '8/1/14' written below it.

I12-020076 – KRS1 – Replace Incline Car**IP - New Approval**

Project	Project #	Stage	Stage Cost	Overall Project Cost
KRS1 - Replace Incline Car	I12-020076	Preliminary	\$125,000	\$1,450,000
	Estimated In-Service		Estimated Completion	
	11/30/2017		12/31/2017	


~~10-25-16~~

I12-020077 – Millersburg GAC Filter**7. IP and CS Funding Project Approvals****IP - Approval**

<u>Project</u>	<u>Project #</u>	<u>Stage</u>	<u>Stage Cost</u>	<u>Overall Project Cost</u>
Millersburg - GAC Filter	I12-020077	Implementation	\$620,000	\$620,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	5/1/2017		6/1/2017	



11/29/14

I12-020079 – Jacobson Pump Station**7. IP and CS Funding Project Approvals****IP - New Approval**

Project	Project #	Stage	Stage Cost	Overall Project Cost
Jacobson Pump Station	I12-020079	Preliminary	\$115,000	\$948,409
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	9/30/2017		10/31/2017	

D.K.
3/27/16

I12-020086 – RRS WTR Sedimentation Basin Improvements**7. IP and CS Funding Project Approvals****IP Approval****New**

Project	Project #	Stage	Stage Cost	Overall Project Cost
RRS WTP Sedimentation Basin Improvements	I12-020086	Implementation	\$1,375,000	\$1,375,000
	<u>Estimated in-Service</u>		<u>Estimated Completion</u>	
	12/1/2017		12/31/2017	



6/29/17

I12-020090 – Brannon Rd Relocation**7. IP and CS Funding Project Approvals****IP Approval****New**

<u>Project</u>	<u>Project #</u>	<u>Stage</u>	<u>Stage Cost</u>	<u>Overall Project Cost</u>
Brannon Rd Relocation	I12-020090	Implementation	\$1,550,000	\$1,550,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	10/30/2017		12/31/2017	



7/28/17

2016

I12-020011 – New Circle Rd Main Relocation

7.1 I12-020011

New Circle Rd Relocation

Requesting Implementation Stage

Total Project Cost: \$2,837,872 - **Approved**

Chief D. Norton 03/25/15

I12-020012 – KRS High Service Pump #15

7.1 I12-020012 Approved

KRS High Service Pumps #12 and 15

Requesting Direct to Implementation Stage

Total Project Cost: \$1,400,000

Cheryl D. Norton 03/02/15

I12-020033 – KY 341 Interconnect

7. IP and CS Funding Project Approvals

7.1 I12-020033

KY 341 Interconnect

Requesting Implementation Stage - **Approved**

Total Project Cost: \$1,907,426

Cheryl D. Norton 08/28/14

I12-020046 – KRS1 Raw Water Intake Actuator Replacement

7. IP and CS Funding Project Approvals

7.1 I12-020046

KRS I Raw Water Intake Actuator Replacement

Requesting Direct to Implementation Stage

Total Project Cost: \$689,982 - **Approved**

Cheryl A. Norton 10/01/14

I12-020056 – KRS Valve House Rehabilitation (Phase 1.B)

7. IP and CS Funding Project Approvals

7.1 I12-020056

KRS Valve House 2

Requesting Implementation Stage

Total Project Cost: \$1,500,000

Chief D. Norton 07/23/15

I12-020057 - Sludge Thickener Drive Upgrade**And****I12-020058 – KRS2 Intake Pump Replacement****7. IP and CS Funding Project Approvals****7.1 I12-020057**

Sludge Thickener Drive Upgrade
Requesting Implementation Stage
Total Project Cost: \$ 468,000

7.2 I12-020058

Intake Pump Replacement
Requesting Implementation Stage
Total Project Cost: \$ 1,243,624.29

Chief S. Norton 08/31/15

I12-020060 – Reeves Drive

7. IP and CS Funding Project Approvals

7.1 IP Approvals

I12-020060

Reeves Drive

Requesting Preliminary Stage

Total Project Cost: \$580,000

2015 Project Cost: \$280,000

I12-020062 – Deer Lake Main Extension

7. IP and CS Funding Project Approvals

Project	Project #	Stage	Stage Cost	Overall Project Cost
Deer Lake Main Extension	I12-020062	Implementation	\$1,026,130	\$1,026,130
		<u>Estimated In-Service</u>		<u>Estimated Completion</u>
		5/31/2016		6/15/2016

~~NO~~
2/26/15

I12-300007 – Pete Towles Main Extension**7. IP and CS Funding Project Approvals**


Project	Project #	Stage	Stage Cost	Overall Project Cost
Pete Towles Rd Main Ext.	I12-020063	Implementation	\$1,055,750	\$1,055,750
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	10/15/2016		11/1/2016	


 4/28/15

I12-020065 – KRS1 Cedar Creek Rd


7. IP and CS Funding Project Approvals

Project	Project #	Stage	Stage Cost	Overall Project Cost
KRSI Cedar Creek Rd	I12-020065	Implementation	\$340,000	\$340,000
		<u>Estimated In-Service</u>		<u>Estimated Completion</u>
		6/1/2016		7/1/2016


3/28/14

I12-020074 – Athens Boonesboro – Phase II**7. IP and CS Funding Project Approvals**

Project	Project #	Stage	Stage Cost	Overall Project Cost
Athens Boonesboro Phase 2	I12-020074	Preliminary	\$150,000	\$1,750,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	11/30/2017		12/31/2017	


 8/1/14

I12-020075 – Richmond Rd Campus – Road Improvements

And

I12-020076 – KRS1 – Replace Incline Car

IP - New Approval

Project	Project #	Stage	Stage Cost	Overall Project Cost
Richmond Rd Campus - Road Improvements	I12-020075	Preliminary	\$50,000	\$650,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	4/15/2017		5/15/2017	

Project	Project #	Stage	Stage Cost	Overall Project Cost
KRS1 - Replace Incline Car	I12-020076	Preliminary	\$125,000	\$1,450,000
	<u>Estimated In-Service</u>		<u>Estimated Completion</u>	
	11/30/2017		12/31/2017	


~~10-25-16~~

I12-300009 – Freshwater Source KRS2 & Low Service Pumps**7. IP and CS Funding Project Approvals**

Project	Project #	Stage	Stage Cost	Overall Project Cost
Freshwater Source - KRS2 & Low Service Pumps	I12-300009	Implementation	\$486,294	\$486,294
		<u>Estimated In-Service</u>		<u>Estimated Completion</u>
		12/15/2016		1/10/2017


9/29/14

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

5. Provide a detailed explanation of the criteria Kentucky-American uses to identify the investment projects that require a Certificate of Public Convenience and Necessity (CPCN).

Response:

KAWC reviews each investment project to determine if a Certificate of Public Convenience and Necessity (CPCN) should be requested. KAWC's analysis is centered on the applicable laws and regulations, Commission orders, and Commission Staff opinions. The Commission has explained that the applicable laws and regulations principally consider three factors in determining whether a project is an ordinary extension of KAWC's existing systems in the usual course of business for which a CPCN is not required: (1) the project does not result in the wasteful duplication of plant; (2) the project does not compete with the facilities of existing public utilities; and (3) the project does not involve a sufficient capital outlay to materially affect the utility's existing financial condition or require an increase in utility rates.

In considering the third factor, KAWC considers the estimated cost of the project as compared to its net utility plant.

In applying these factors, KAWC has traditionally felt that the company must ordinarily request CPCNs, or a Commission Staff opinion, for investment projects that fall under one of the following criteria:

- a. A project that KAWC does not undertake in its usual business practices. Such projects could consist of office buildings, garages, training buildings, or alternative energy projects.
- b. Projects that are adding to or significantly changing the capacity of the existing water treatment facilities.
- c. Projects that are adding new treatment facilities.
- d. Projects that are extending the distribution system to serve new areas of customers not contiguous with the current distribution system.
- e. Projects that add storage volume within the distribution system.
- f. Projects that are significantly changing the water treatment process or adding new treatment processes to the water treatment facilities.
- g. Projects that comprise a material percentage of net utility plant, such as 5%.

KAWC has traditionally felt that the following types of investment projects have not required a submittal for a CPCN:

- a. A project that is replacing an existing asset in kind or in general operation. Such projects would consist of replacement main projects, pump replacement projects, water storage replacement projects.
- b. Projects that replace water treatment equipment that does not change the overall operation of the water treatment facilities.

Each project is reviewed against these factors when it is placed within the Comprehensive Planning Study and when it is placed on the Strategic Capital Expenditure Plan. During this period, the schedule of the projects is adjusted ensure enough time if a CPCN application is expected to be needed. In addition, at the time of commencing the design of the project, the project is once again evaluated to determine if a CPCN application is expected to allow for sufficient time for bidding and review of the application.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Brent E. O'Neill

6. Provide a schedule listing the investment projects for the past five calendar years, indicating for each project whether a CPCN was required and, if so, provide the case number and date when the CPCN was granted or denied. Refer to the O'Neill Testimony, pages 13–14, which describes the Investment Projects constructed in 2017 and 2018.
- a. Explain if each of the listed projects was included in Kentucky-American's business plan.
 - b. List all investment projects constructed in 2017 and 2018 that were not included in the business plan but were authorized by the CIMC. For each project, explain why the CIMC authorized the project.

Response:

Attached please find Schedule 6 listing the investment projects for the past five calendar years.

- a. The following projects were included in the Kentucky-American's Business Plan for 2017 and/or 2018:

I12-020021 Jacobson – Hays Booster Station
I12-020064 KRS 1 High Service Pumps No. 12 and 14 Replacement
I12-020069 KRS 1 Valve House 4 Rehabilitation

The fourth project I12-020086 RRS WTP Sedimentation Basin Improvement was not included in the KAWC Business Plan in 2017 but was approved at the May 2017 CIMC Meeting to allow the project to address hydraulic gradient issues and ensure the project was completed during the low flow period of December 2017.

- b. Please see attached.

Kentucky American Water
Case No. 2018-00358

Type of Filing: X Original Updated Revised
Worksheet Reference No(s):

Schedule 6

Witness Responsible:
Brent O'Neill

Item	Project	Project Description	Type of Project	Determination of CPCN	CPCN Case Number	Date CPCN Granted or Denied
112-02009	US 25 Relocation - Item 7-122.50	The relocation of 3546 lineal feet of 24-inch main, 1,004 lineal feet of 16-inch main, 11,242 lineal feet of 12-inch main and 781 lineal feet of 8-inch main due to the widening and reconstruction of US 25 (Georgetown Road) from Ironworks Pike and the Georgetown By-Pass by the Kentucky Transportation Cabinet.	Relocation	Normal Business	-	-
112-02010	Leestown Road - Item 7-223.00	The relocation of 8,184 lineal feet of 16-inch main, 511 lineal feet of 12-inch main and 1,419 lineal feet of 8 inch main due to the widening and reconstruction of Leestown Road from New Circle Road to Masterson Station Park by the Kentucky Transportation Cabinet.	Relocation	Normal Business	-	-
112-02011	New Circle Rd Main Relocation	The relocation of 1,730 lineal feet of 24-inch main, 2,070 lineal feet of 20-inch main, 380 lineal feet of 16-inch main, 1,680 lineal feet of 12-inch main and 860 lineal feet of 8-inch main due to the widening and reconstruction of New Circle Road from Versailles Road to Boardwalk by the Kentucky Transportation Cabinet.	Relocation	Normal Business	-	-
112-02012	KRS High Service Pumps	The replacement of KRS1 High Service Pumps #12 and #15 with new Vertical Turbine Pumps, Motors and VFDs.	Replacement	Normal Business	-	-
112-02017	KRS Valve House Rehabilitation	Renovation and rehabilitation of the Kentucky River Station Valve House Number 1 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	Replacement	Normal Business	-	-
112-02021	Jacobson - Hays Booster Station	Installation of a pump station in Jacobson Park to create a pressure zone in the Northeastern portion of the Lexington Distribution System. The pump station will allow KAWC to address reduced pressure areas due to development of higher elevation land and increase population in distribution system. The pressure zone will increase fire flows and residential pressure and improve service for over 10,000 residents.	Operational Improvement	Normal Business	-	-
112-02025	Pump Efficiency Repl Phase 1	The Jacobson Reservoir Pump Station (JRPS) transfers raw water from the Jacobson Reservoir to the Richmond Road Station (RRS) for treatment. The pumping equipment, electrical systems, and permanganate feed system are in need of replacement, including new pumps and motors, new 480-volt electrical service, a bulk liquid sodium permanganate feed system, and a sodium permanganate application point on the pump station discharge main. All three pumping units will be replaced with new horizontal-split case centrifugal pumps, each of equivalent capacity. The pumps will be sized to deliver at least 16.7 mgd with one unit out of service, and 25 mgd with all units in service operating at full speed. Chemical improvements will include the existing dry potassium permanganate system being replaced with a liquid sodium permanganate (40% solution) system and related feed equipment. Raw water flow metering will be installed to measure raw water flow into Jacobson Reservoir from the Kentucky River Station 1 (KRS1).	Replacement	Normal Business	-	-
112-02027	Russell Cave Rd Sys Improvements	The installation of three control valves and installation of a pressure reducing valve within the distribution system around Russell Cave storage tank to improve the turn over of the tank and improve the operation of the northern portion of the distribution system.	Operational Improvement	Normal Business	-	-
112-02032	RRS Filter Building Replacement	The filter piping gallery at the Richmond Road Station was in very poor condition and requires extensive upgrades or replacement. Significant amount of pipe, pipe fittings, valves, and electrical equipment located in the filter pipe gallery was in need of replacement due to corrosion. Additionally, the filter piping gallery was also congested that made the maintenance required to keep the facility in full operation extremely difficult resulting in diminished operating capacity of the filters. Due to the extensive improvements needed to address the deficiencies noted above, it was recommended a new filter building and chlorine contact basin be constructed.	Replacement with new facility and new process of chlorine contact tank and change to pumped backwash	CPCN Needed due to change in process	2014-00258	22-Apr-15
112-02033	KY 341 Interconnect	Install approximately 11,000 linear feet of pipe connecting into the 42-inch transmission main coming from KRS-2, providing a hydraulic loop for the northern portion of Kentucky's Central Division. Also, the new main will provide a secondary feed to existing customers.	Redundancy/ Resiliency	Normal Business	-	-
112-02034	RRS Chlorine Scrubber	Richmond Road Station (RRS) was equipped with an existing liquid caustic scrubber which is designed to neutralize chlorine gas that may be emitted during an accidental chlorine gas leak. The previous scrubber was located on a concrete slab behind the chlorine storage building and was sized to neutralize the contents of one completely full one-ton chlorine cylinder during an accidental release. Years of weather exposure have caused many of the crucial system components to become inoperable making reliability of the unit questionable. The project will replace the aging RRS liquid caustic scrubber with a dry media type scrubber similar to the unit installed at Kentucky River Station Plant 2. The new scrubber will reduce ongoing maintenance expense and increase reliability.	Replacement	Normal Business	-	-
112-02035	KRS1 - Residual Improvements	This project will provide a near-term and intermediate solution to improve the residual handling at KRS1. Improvements expected are installation of gravity thickeners, upsized or increase number of washwater holding tanks, and create the long-term plan for dewatering at KRS1. Project need is the result of an overloading of the residual system due to the operational change to address regulatory requirements of THMs formation at the facility and within the distribution system. Due to the excess loading of the sludge lagoons from the WWHTs and Aldrich units, KAWC runs the risk of overflowing one or more of the lagoons in to a nearby creek which runs through a sensitive conservation area, or exceeding the NPDES discharge limit for the total suspended solids (TSS).	Operational Improvement/ Delay in long-term investment	Normal Business	-	-
112-02037	KRS1 Chemical Storage and Feed Improvements	This project incorporates several components of chemical storage and delivery to enhance the robustness and reliability of Kentucky River Station (KRS 1) operations by minimizing the risk of plant shutdown due to insufficient chemical storage and feed. A major component of the project is the transition from chlorine gas and anhydrous ammonia to the safer liquid sodium hypochlorite and aqueous ammonia.	Replacement/ Safety	Normal Business	-	-
112-02039	Georgetown Bypass and US 25 Area (Delaplain Booster)	This project will replace the present below grade Delaplain Booster Station with a new booster station that will provide redundancy for the Muddy Ford Tank and the Newtown Pike Booster Station. The project will also improve reliability of the system to maintain sufficient service to large users in the area.	Replacement/ Resiliency	Normal Business	-	-
112-02040	KRS Valve House Rehabilitation Ph 2	Renovation and rehabilitation of the Kentucky River Station Valve House Number 3 includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural repairs.	Replacement	Normal Business	-	-
112-02043	Athens Boonesboro main Extension	This project is phase 1 of the water system improvements along Athens-Boonesboro Road in Fayette County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension of phase 1 and 2 will allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	Operational Improvement	Normal Business	-	-
112-02045	Main Office Roof Replacement	This project addressed the roof of the administration office for Kentucky American Water at 2300 Richmond Road that had reached and exceeded its design life. Prior to the project water leakage from the roof had become an increasing issue due to the roof being approximately 30 years old. The project removed the existing roof system and replaced it with a new EPDM membrane roof and add additional insulation to assist with energy efficiency. In addition replacement of the skylights was accomplished along with other minor improvements associated with the building eutters and penthouse structure.	Replacement	Normal Business	-	-
112-02046	KRS 1 Raw Water Intake Actuator Repl	This project is to replace the oil accumulator system and its actuators at the Kentucky River Station #1 raw water intake with new hydroelectric actuators. The accumulator system is a single point of failure that powers all six (6) actuators on each of the six (6) 24" ball valves on the raw water intake pumps. The accumulator system has been a continuous maintenance issue at the intake which makes it very costly to maintain.	Replacement	Normal Business	-	-
112-02047	Field Ops Road Replacement	This project includes the design, bid and reconstruction of approximately 1,320 feet of 21 ft wide roadway from the Field Operations center at the Richmond Road Facilities to the first three-way intersection. Existing roadway in a state of deterioration.	Replacement	Normal Business	-	-
112-02048	Security Upgrades Richmond Rd Campus	Add enterprise security upgrades at the office building and distribution building at RICHMOND ROAD WTP, in LEXINGTON, KY. This includes access control, intrusion detection, and cameras with associated wiring and infrastructure.	Security Upgrades	Normal Business	-	-
112-02055	New Circle Rd Main Relocation Phase 2	This project includes the relocation of approximately 1,300 lineal feet of 20 inch water main and 1,500 lineal feet of 12 inch water main in response to the Kentucky Department of Transportation's widening of New Circle Road to increase safety and improve the flow of traffic. The project is located along New Circle Road between Georgetown Road and Boardwalk Avenue in Lexington.	Relocation	Normal Business	-	-
112-02056	KRS Valve House 2	Renovation and rehabilitation of the Kentucky River Station Valve House 2. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	Replacement	Normal Business	-	-
112-02057	Sludge Thickener Drive Upgrade	The purpose of this project is to increase the torque capacity of the sludge thickener drive at KRS2. Presently, the drive mechanism has failed multiple times due to maximum torque capacity being inadequate for current operating conditions. Additionally, a sludge pump was replaced as part of this project that failed.	Replacement	Normal Business	-	-
112-02058	KRS2 Intake Pump Replacement	This project is for the replacement of two (2) new raw water intake pumps and a redundant flush water system at KRS2 WTP. This includes a study to determine the original intake pumps' failure modes as well as the design, bidding, construction administration and installation of the new pumps.	Replacement	Normal Business	-	-
112-02059	KRS2 Transfer Switch	This project is for the design of an automatic transfer switch (ATS) for Kentucky River Station 2 (KRS-2) to transfer from 5 KV utility power to the standby generator and back to utility power. This process is currently accomplished by manual transfer and re-transfer.	Operational Improvement/ Safety	Normal Business	-	-
112-02060	KRS Reeves Drive	The Reeves Drives were originally installed with the original hydrotronicers at KRS1 in the 1950's and 1960's. Due to the age, the original drive mechanism has now aged to a point where it is no longer possible to buy replacement components for the Reeves Drives that are presently installed. Also, due to the current setup and design, the regular maintenance is difficult to perform.	Replacement	Normal Business	-	-

112-020061	New Millersburg Tank & Pump Station	The Millersburg system experienced disinfectant byproducts formation within the system due to changes in the operation of the system. KAWC has been able to address the disinfectant byproducts formation on a temporary basis through expanded system flushing and operational changes with the existing water storage tank. However, these temporary changes are not a viable long term solution and at times impact the overall operation of the system. The project is to enhance the ability of the system to utilize the water storage in the community and reduce the impact of water age in the system. The project will relocate the water storage in the community to a more advantageous location to enhance the ability of the system to use the storage in a more efficient manner.	Replacement/ Operational Improvement	Normal Business	-	-
112-020062	Deer Lake Main Extension	This project is necessary to help improve water quality by creating a hydraulic redundancy between two presently dead end water mains.	Redundancy/ Resiliency	Normal Business	-	-
112-020064	KRSI HS Pump #12	The project replaced high service pump 14 with a new high efficiency vertical turbine pump and repurposed the existing vertical turbine pump to replace high service pump 12. This work continued KAWC's selective replacement of high service pumps at Kentucky River Station 1 to improve both the operational and energy efficiency of the facility's high service pumps as recommended by the Hydraulic Efficiency Study that was commissioned by KAWC in 2016.	Replacement	Normal Business	-	-
112-020065	KRSI - Cedar Creek Rd	The private road to KRSI is slowly falling into a state of disrepair requiring frequent maintenance and becoming impassable for chemical delivery trucks. This project will restore the entire road with the intent to turn the road over to the county for future maintenance.	Replacement	Normal Business	-	-
112-020067	RRS Chemical Facility	This project incorporates several components of chemical storage and delivery to enhance the robustness and reliability of Richmond Road Station (RRS) operations by minimizing the risk of plant shutdown due to insufficient chemical storage and feed. A major component of the project is the transition from chlorine gas and anhydrous ammonia to the safer liquid sodium hypochlorite and aqueous ammonia. The project will combine all of the chemicals used for the treatment of water at RRS, allowing for the consolidated storage and management of chemicals, which will lead to improved safety and efficiency for the operation of RRS.	Replacement/ Safety	Normal Business	-	-
112-020073	KRSI Raw Water Intake Pump Replacement	Kentucky Services will be the general contractor and will provide a turn key service to replace raw water pump number 6 at KRSI that had failed. Kentucky Services will provide a 1250 HP motor, a Floway pump that will be identical to pump number 6, engineering and startup services, materials for install and materials for removal, and will transfer pump from landing on river to site.	Replacement	Normal Business	-	-
112-020074	Athens Boonesboro Main Extension - Phase II	This project will complete water system improvements along Athens-Boonesboro Road in Fayette County and make various improvements in Clark County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension will occur along Athens-Boonesboro, Quisenberry, Waterworks, Old Stone Church and Combs Ferry roads and allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	Operational Improvement	Normal Business	-	-
112-020075	Richmond Rd Campus - Road Improvements	This project will improve several of the roads on the Richmond Road campus, in particular, the main drive from the front gate up to the new road going up to the filter building, the road between production and the turn toward field operations, and the road between the three way stop just past the main gate going up to the stop sign near the Dismore Gate.	Replacement	Normal Business	-	-
112-020076	KRSI - Replace Incline Car	This project will replace the existing incline car at the KRSI that was installed in 1956. The incline car is the main means for operators and maintenance personnel to gain access the KRSI low service intake pumps and structure. The project will replace the existing incline car with a new installation that will address safety concerns and increase the capacity for moving personnel and equipment to the low service intake pumps and structure.	Replacement	Normal Business	-	-
112-020077	Millersburg GAC Filter	This project will install a GAC System to support the Millersburg Water System. The GAC System is needed to mitigate the threat of THM's and HAA's from the Paris Water System. The GAC system also will reduce non-revenue water by decreasing the amount of flushing needed.	Operational Improvement/ Regulatory	Normal Business	-	-
112-020079	Jacobson Pump Station	This project will include the construction of a powder-activated carbon storage and feed system at the Jacobson Reservoir. Currently the Jacobson Pump Station provides source water from Reservoir 4 to Richmond Road Station, where the raw water is treated for taste and odor through a bag feed system. The construction of the powder-activated carbon feed system at the Jacobson Reservoir will allow operations staff to feed appropriate amounts of powder-activated carbon and treat taste and odor in an efficient manner.	Replacement	Normal Business	-	-
112-020086	RRS WTP Sedimentation Basin Improvement	This project replaced the sedimentation basin weirs with a submerged weir system. This work improved the hydraulics and water quality for the Richmond Road Station facility. The submerged weir system reduced the amount of floating debris getting onto the filters and improved the performance of the sedimentation basin to provide optimal operation of the filters. The improvements also improved the hydraulic capabilities of the basins and ensured proper water levels during high demand periods for the facility.	Replacement	Normal Business	-	-
112-020090	Brannon Rd Main Relocation	Relocation of approximately 8,308 feet of (24) inch ductile iron water main, hydrants, valves, and related appurtenances, and easement acquisition as part of a state roadway extension by the State Transportation Cabinet.	Relocation	Normal Business	-	-
112-300003	Northern Division Connection	Construction of approximately 84,600 lineal feet of 16-inch main along US 127 from KRS II to Owenton to allow for the retirement of the Owenton Water Treatment Plant. The project will also include the construction of a 2 MGD booster station with a 300,000 gallon elevated storage tank north of Monterey and the construction of a 600,000 gallon elevated storage tank within Owenton.	Main Extension	CPCN Needed due to new storage capacity and change in operation regarding Owenton	2012-00096	1/23/2014
112-300007	Pete Towles Main Extension	Installation of 16,464 lineal feet of 6-inch PVC main to provide redundancy to the Northern District distribution system between Georgetown Road and Claxon Ridge Road.	Redundancy/ Resiliency	Normal Business	-	-
112-300008	Owenton Distribution Building	This project will provide for the construction of a new, 9,900 square-foot maintenance garage to support the field crews for the Northern Division. Facility will allow for storage of all of the division's equipment as well as its perishable material. The garage will occupy 0.23 acres of the 4-acre site, allowing for the centralized storage of large material and equipment, consolidation of staff and the ability to accept deliveries of material in a safer, more organized manner.	New Facility for Maintenance Personnel	CPCN Clarification Request	Opinion Letter Obtained	10/11/2018
112-300009	Freshwater Source - KRS2 & Low Srvc Pump	This project will provide a freshwater line for both KRS2 and the low service pumps. The new closed bearings required a freshwater source. The new line provided redundancy for the bearings and chemical feeds located in the intake building.	Operational Improvement/ Replacement	Normal Business	-	-

Kentucky American Water
Case No. 2018-00358

Type of Filing: X Original _____ Updated _____ Revised _____
Workpaper Reference No(s): _____

Schedule 6B

Witness Responsible:
Brent O'Neill

Item	Project	Project Description	Date Approved by CIMC	Reason for Approval
112-020035	KRS1 - Residual Improvements	This project will provide a near-term and intermediate solution to improve the residual handling at KRS1. Improvements expected are installation of gravity thickeners, upsize or increase number of washwater holding tanks, and create the long-term plan for dewatering at KRS1. Project need is the result of an overloading of the residual's system due to the operational change to address regulatory requirements of THM's formation at the facility and within the distribution system. Due to the excess loading of the sludge lagoons from the WWHTs and Aldrich units, KAW runs the risk of overflowing one or more of the lagoons in to a nearby creek which runs through a sensitive conservation area, or exceeding the NPDES discharge limit for the total suspended solids (TSS).	8/2/2017	Project approved to reduce likelihood of discharge violation allowing facility to maintain regulatory requirements for THM's formation
112-020043	Athens Boonesboro main Extension	This project is phase 1 of the water system improvements along Athens-Boonesboro Road in Fayette County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension of phase 1 and 2 will allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	5/12/2017	Project was originally budgeted in 2016 but delayed due to easement acquisitions
112-020060	KRS Reeves Drive	The Reeves Drives were originally installed with the original hydrotreaters at KRS1 in the 1950's and 1960's. Due to the age, the original drive mechanism has now aged to a point where it is no longer possible to buy replacement components for the Reeves Drives that are presently installed. Also, due the current setup and design, the regular maintenance is difficult to perform.	2/24/2016	Approved in 2016 to address failure of existing reeves drives and inability to secure parts. Project spend continued into 2017
112-020062	Deer Lake Main Extension	This project is necessary to help improve water quality by creating a hydraulic redundancy between two presently dead end water mains.	2/26/2016	Approved in 2016. Project was originally going to be a part of the A-Line Projects but expected spend required approval by CIMC. Construction spend continued into 2017
112-020073	KRS1 Raw Water Intake Pump Replacement	Kentucky Services will be the general contractor and will provide a turn key service to replace raw water pump number 6 at KRS1 that had failed. Kentucky Services will provide a 1250 HP motor, a Floway pump that will be identical to pump number 6, engineering and startup services, materials for install and materials for removal, and will transfer pump from landing on river to site.	10/14/2016	Approved in 2016 to address failure of KRS1 Intake pump. Project spend continued into 2017
112-020077	Millersburg GAC Filter	This project will install a GAC System to support the Millersburg Water System. The GAC System is needed to mitigate the threat of THM's and HAA's from the Paris Water System. The GAC system also will reduce non-revenue water by decreasing the amount of flushing needed.	12/8/2016	Project approved to reduce likelihood of THM violations resulting from purchased water exceeding regulatory values.
112-020086	RRS WTP Sedimentation Basin Improvement	This project replaced the sedimentation basin weirs with a submerged weir system. This work improved the hydraulics and water quality for the Richmond Road Station facility. The submerged weir system reduced the amount of floating debris getting onto the filters and improved the performance of the sedimentation basin to provide optimal operation of the filters. The improvements also improved the hydraulic capabilities of the basins and ensured proper water levels during high demand periods for the facility.	7/21/2017	Project identified following investigation. Approval provided to allow for project to be completed during low flow period.
112-020088	Pressure Zone Extension	This project will install 3,150 feet of 20" DI main following the Brighton Rail Trail to Polo Club. There will also be a 300' of 24" HDPE crossing I-75. This project will enhance the pressure zone and help provide redundant sources for residential and commercial development in Southeastern Fayette County.	11/20/2017	Identified improvements to complete pressure zone and improve redundancy to area south of I-75
112-020089	Millersburg Chemical Feed and WQ	This project will include new chemical feed points, additional monitoring equipment (Ammonia analyzer), and upgrades to the SCADA System to allow for better control of THMs from purchased water source.	12/4/2017	Project approved to reduce ongoing maintenance and operational difficulties to ensure that THM requirements met.
112-020090	Brannon Rd Main Relocation	Relocation of approximately 8,308 feet of (24 inch ductile iron water main, hydrants, valves, and related appurtenances, and easement acquisition as part of a state roadway extension by the State Transportation Cabinet.	11/29/2017	Project approved due to State Transportation Cabinet Project schedule.
112-020091	KRS1 Overhead Power Line Relocation	This project will eliminate the overhead power lines that exist going down the hillside at KRS1 that provides power to the low service pump station. The project will eliminate the conflicts with proposed incline car project and improve resiliency of electrical service to low service pump station	12/28/2017	Project identified during design of incline car. Approved to provide resiliency and remove conflict for incline car project.
112-020090	S Cleveland Road Water Main Extension	Water Main Extension of approximately 4,000 LF of 12" DI pipe to complete a loop in the system on South Cleveland Road. Currently the existing 12" DI water main dead ends at 631 South Cleveland Road. This project will extend the 12" water main to US 25 (Old Richmond Road) and tie-in to an existing 6" PVC pipe. This loop will improve system hydraulics and potentially allow us to retire an old 6" AC water main on Turner Station Road.	1/27/2018	Approved in 2016. Project was originally going to be a part of the A-Line Projects but expected spend required approval by CIMC.
112-020099	KRS1 Pump #13 Replacement	Replace High Service Pump 13 with new vertical turbine pump, motor, and VFD. Work on HS Pump 13 will occur in a separate phase instead of with Pumps 12 and 14 as originally intended.	6/30/2018	Project originally part of budgeted 112-020064. Due to pump delays project approved as stand alone project.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

7. Refer to O'Neil Testimony, attachment KAW_DT_ONeill_Exhibit_1.
- a. For each investment project listed, state whether it requires a CPCN and state the projected date that a CPCN application will be filed.
 - b. For each investment project that does not require a CPCN, explain why Kentucky-American believes the project does not require a CPCN.
 - c. Provide a separate schedule listing each project, the total estimated completed project cost, and the 13-month average project cost that is included in Kentucky-American's forecasted rate base.

Response:

- a. See Attachment.
- b. See Attachment and see the response to PSC 2-5.
- c. See Attachment C.

Kentucky American Water
Case No. 2018-00358Type of Filing: X_Original ___Updated ___Revised
Worksheet Reference No(s): _____

Schedule 7

Witness Responsible:
Brent O'Neill

Item	Project	Project Description	Type of Project	Determination of CPCN	Potential Date CPCN Application
112-020035	KRS1 - Residual Improvements	This project will provide a near-term and intermediate solution to improve the residual handling at KRS1. Improvements expected are installation of gravity thickeners, upsized or increase number of washwater holding tanks, and create the long-term plan for dewatering at KRS1. Project need is the result of an overloading of the residual's system due to the operational change to address regulatory requirements of THMs formation at the facility and within the distribution system. Due to the excess loading of the sludge lagoons from the WWHTs and Aldrich units, KAW runs the risk of overflowing one or more of the lagoons in to a nearby creek which runs through a sensitive conservation area, or exceeding the NPDES discharge limit for the total suspended solids (TSS).	Operational Improvement/ Delay in long-term investment	Normal Business	-
112-020037	KRS1 Chemical Storage and Feed Improvements	This project incorporates several components of chemical storage and delivery to enhance the robustness and reliability of Kentucky River Station (KRS 1) operations by minimizing the risk of plant shutdown due to insufficient chemical storage and feed. A major component of the project is the transition from chlorine gas and anhydrous ammonia to the safer liquid sodium hypochlorite and aqueous ammonia.	Replacement/ Safety	Normal Business	-
112-020039	Georgetown Bypass and US 25 Area (Delaplain Booster)	This project will replace the present below grade Delaplain Booster Station with a new booster station that will provide redundancy for the Muddy Ford Tank and the Newtown Pike Booster Station. The project will also improve reliability of the system to maintain sufficient service to large users in the area.	Replacement/ Resiliency	Normal Business	-
112-020055	New Circle Rd Main Relocation Phase 2	This project includes the relocation of approximately 1,300 lineal feet of 20 inch water main and 1,500 lineal feet of 12 inch water main in response to the Kentucky Department of Transportation's widening of New Circle Road to increase safety and improve the flow of traffic. The project is located along New Circle Road between Georgetown Road and Boardwalk Avenue in Lexington.	Relocation	Normal Business	-
112-020059	KRS2 Transfer Switch	This project is for the design of an automatic transfer switch (ATS) for Kentucky River Station 2 (KRS-2) to transfer from 5 KV utility power to the standby generator and back to utility power. This process is currently accomplished by manual transfer and re-transfer.	Operational Improvement/ Safety	Normal Business	-
112-020067	RRS Chemical Facility	This project incorporates several components of chemical storage and delivery to enhance the robustness and reliability of Richmond Road Station (RRS) operations by minimizing the risk of plant shutdown due to insufficient chemical storage and feed. A major component of the project is the transition from chlorine gas and anhydrous ammonia to the safer liquid sodium hypochlorite and aqueous ammonia. The project will combine all of the chemicals used for the treatment of water at RRS, allowing for the consolidated storage and management of chemicals, which will lead to improved safety and efficiency for the operation of RRS.	Replacement/ Safety	Normal Business	-
112-020069	KRS1 Valve House #4 Rehabilitation	Renovation and rehabilitation of the Kentucky River Station Valve House 4. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	Replacement	Normal Business	-
112-020071	KRS1 Valve House Rehabilitation (Phase 5)	Renovation and rehabilitation of the Kentucky River Station Valve House 5. Includes new valves and actuators; demolition of decommissioned piping and valves; corrective measures to mitigate flooding; improved access for piping and valves; relocation of electrical panels, boxes and SCADA; review and replacement of fluoride and chlorine lines as needed; and structural analysis. Including design, bidding and construction services.	Replacement	Normal Business	-
112-020074	Athens Boonesboro Main Extension - Phase II	This project will complete water system improvements along Athens-Boonesboro Road in Fayette County and make various improvements in Clark County to allow for the connection of KAWC customers to the Company's Central Service Area. The water main extension will occur along Athens-Boonesboro, Quisenberry, Waterworks, Old Stone Church and Combs Ferry roads and allow the Company to eliminate the use of purchased water for the customers in the area of the project and allow them to be served by KAWC's three water treatment facilities. The project will also enhance water pressures and water quality for customers in the area.	Operational Improvement	Normal Business	-
112-020076	KRS1 - Replace Incline Car	This project will replace the existing incline car at the KRS 1 that was installed in 1956. The incline car is the main means for operators and maintenance personnel to gain access the KRS 1 low service intake pumps and structure. The project will replace the existing incline car with a new installation that will address safety concerns and increase the capacity for moving personnel and equipment to the low service intake pumps and structure.	Replacement	Normal Business	-
112-020079	Jacobson Pump Station	This project will include the construction of a powder-activated carbon storage and feed system at the Jacobson Reservoir. Currently the Jacobson Pump Station provides source water from Reservoir 4 to Richmond Road Station, where the raw water is treated for taste and odor through a bag feed system. The construction of the powder-activated carbon feed system at the Jacobson Reservoir will allow operations staff to feed appropriate amounts of powder-activated carbon and treat taste and odor in an efficient manner.	Replacement	Normal Business	-
112-020088	Pressure Zone Extension	This project will install 3,150 feet of 20" DI main following the Brighton Rail Trail to Polo Club. There will also be a 300' of 24" HDPE crossing I-75. This project will enhance the pressure zone and help provide redundant sources for residential and commercial development in Southeastern Fayette County.	Operational Improvement/ Resiliency	Normal Business	-
112-020094	Cox Street Booster	This project will replace the existing below-grade booster pump station with an at-grade pump station. The project will include review of the pumping requirements for the pump station, which supports both the 1 MG ground storage tank and the 1 MG elevated storage tank at Cox Street. The project will address safety concerns and enhance the reliability and efficiency of the pump station.	Replacement	Normal Business	-
112-020095	Mercer Road Booster Station	This project will replace the existing below-grade booster pump station with an at-grade pump station. The project will include review of the pumping requirements for the pump station, which supports both the Mercer elevated storage tank. The project will address safety concerns and enhance the reliability and efficiency of the pump station.	Replacement	Normal Business	-
112-020099	KRS1 Pump #13 Replacement	Replace High Service Pump 13 with new vertical turbine pump, motor, and VFD. Work on HS Pump 13 will occur in a separate phase instead of with Pumps 12 and 14 as originally intended.	Replacement	Normal Business	-
112-300008	Owenton Distribution Building	This project will provide for the construction of a new, 9,900 square-foot maintenance garage to support the field crews for the Northern Division. Facility will allow for storage of all of the division's equipment as well as its perishable material. The garage will occupy 0.23 acres of the 4-acre site, allowing for the centralized storage of large material and equipment, consolidation of staff and the ability to accept deliveries of material in a safer, more organized manner.	New Facility for Maintenance Personnel	CPCN Clarification Requested	Clarification received 10/11/2018
112-030001	ERWA Main Interconnection	This project will interconnect the three service areas of the Eastern Rockcastle Distribution system to allow for redundancy and reduce the likelihood of loss of service when source of supply lost to a particular service area. Study and design expected during 2019 with determination of viability of project by early 2020.	Resiliency/ Operational Improvement	Potential CPCN Needed	First quarter 2020

Kentucky American Water

Case No. 2018-00358

Response to PSC Data Request #2, Item 7c

Business Unit	Business Unit No.	Project Title	Est. In-Service Date	Projected Cost	Average Test Year UPIS
		INVESTMENT PROJECTS			
Kentucky	I12-000001	Post Acquisition BD Capex		0	0
Kentucky	I12-020037	KRS I Chemical Storage and Feed Imp	3/31/2020	8,500,000	2,562,556
Kentucky	I12-020039	Delaplain Booster Station	9/30/2018	1,368,347	1,368,347
Kentucky	I12-020055	New Circle Rd Main Relocation Phase 2	8/31/2019	1,000,000	845,312
Kentucky	I12-020059	KRS2 Transfer Switch	3/31/2020	1,000,041	307,692
Kentucky	I12-020067	RRS Chemical Facility Upgrade/Chlor	7/31/2019	10,500,000	9,313,327
Kentucky	I12-020069	KRS1 Valve House #4 Rehabilitation	9/30/2018	988,884	988,884
Kentucky	I12-020074	Athens Boonesboro Main Ext - Phase	7/31/2019	900,000	969,185
Kentucky	I12-020076	KRS1 - Replace Incline Car	9/30/2019	1,500,000	1,153,852
Kentucky	I12-020079	Jacobson Pump Station	6/30/2019	2,000,000	1,989,348
Kentucky	I12-020099	KRS1 Pump #13 Replacement	6/30/2019	1,200,000	1,220,667
Kentucky	I12-300008	Owenton Operations Garage	3/31/2020	1,000,000	304,810
Kentucky	I12-020071	KRS1 Valve House Rehabilitation (Phase 5) - Reeves Drives	5/31/2019	1,500,000	1,500,000
Kentucky	I12-020094	Cox Street Booster	12/31/2019	1,000,000	538,461
Kentucky	I12-020095	Mercer Road Booster Station	3/31/2020	1,000,000	305,902
Kentucky	I12-030001	ERWA Main Interconnection	6/30/2023	2,855,492	0
Kentucky	I12-020035	KRS1 - Residual Improvements	9/30/2018	610,000	473,187
Kentucky	I12-020088	Pressure Zone Extension	9/30/2018	1,383,828	1,383,828
		Total Investment Projects		\$38,306,592	\$25,225,360

KENTUCKY-AMERICAN WATER COMPANY
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Witness: Brent E. O'Neill

- 8.** List each construction project that Kentucky-American will commence or complete during the forecasted period for which Kentucky-American, as of the date of this request, has not obtained all necessary governmental permits licenses, or other approvals. For each project listed:
- a. List all required governmental permits licenses and other approvals;
 - b. List all governmental permits licenses and other approvals that Kentucky-American has obtained as of the date of this request; and
 - c. State the date on which Kentucky-American applied or expects to apply for each required governmental permits licenses, or other approvals.

Response:

- a. Please see attached.
- b. Please see attached.
- c. Please see attached.

Kentucky American Water
Case No. 2018-00358

Type of Filing: X_Original ___Updated ___Revised
Workpaper Reference No(s): _____

Schedule 8

Witness Responsible:
Brent O'Neill

Item	Project	Project Status	Estimated In-Service Date	Anticipated Permits		Status of Permit	Anticipated Application Date	Date Applied	Date Received
				Organization	Permit				
I12-020037	KRS1 Chemical Storage and Feed Improvements	Design	3/31/2020	Kentucky Department for Environmental Protection (Division of Water)	Construction Permit	Received		10/12/2018	1/17/2019
				Kentucky Department for Environmental Protection (Division of Water)	Approval of Changes to New Chemicals	Not Submitted	1/31/2020		
				Kentucky Department of Housing, Buildings, & Construction	Fire Suppression Waiver	Not Submitted	1/31/2019		
				Kentucky Department of Housing, Buildings, & Construction	Building Plan + Plumbing Permit	Not Submitted	1/31/2019		
				Kentucky Cabinet for Health and Family Services	Fluoride Service	Not Submitted	TBD		
				Lexington-Fayette Urban County Government, Division of Building Inspection	Commercial New Construction	Not Submitted	1/31/2019		
				Lexington-Fayette Urban County Government, Division of Building Inspection	Land Disturbance	Not Submitted	1/31/2019		
				Lexington-Fayette Urban County Government, Division of Planning	Development Plan	Not Submitted	TBD		
I12-020055	New Circle Rd Main Relocation Phase 2	Construction (5% Complete)	8/31/2019	Kentucky Transportation Cabinet	Encroachment Permit	Received			
I12-020059	KRS2 Transfer Switch	Planning	3/31/2020	Kentucky Department of Housing, Buildings, & Construction	Electrical Permit	Not Submitted	TBD		
I12-020067	RRS Chemical Facility	Construction (10% Complete)	7/31/2019	Kentucky Department for Environmental Protection (Division of Water)	Construction Permit	Received		10/12/2018	1/17/2019
				Kentucky Department for Environmental Protection (Division of Water)	Approval of Changes to New Chemicals	Not Submitted	7/31/2019		
				Kentucky Department of Housing, Buildings, & Construction	Fire Suppression Waiver	Received		10/12/2018	10/22/2018
				Kentucky Department of Housing, Buildings, & Construction	Building Plan + Plumbing Permit	Received		10/12/2018	11/29/2018
				Kentucky Cabinet for Health and Family Services	Fluoride Service	Not Submitted	TBD		
				Lexington-Fayette Urban County Government, Division of Building Inspection	Commercial New Construction	Received		10/12/2018	12/13/2018
				Lexington-Fayette Urban County Government, Division of Building Inspection	Land Disturbance	Received		11/14/2018	12/21/2018
				Lexington-Fayette Urban County Government, Division of Planning	Development Plan	Not Submitted	TBD		
I12-020071	KRS1 Valve House Rehabilitation (Phase 5)	Construction (10% Complete)	5/31/2019	Lexington-Fayette Urban County Government, Division of Building Inspection	Electrical Permit (#108839)	Received			
I12-020074	Athens Boonesboro Main Extension - Phase II	Construction (65% Complete)	7/31/2019	Marathon Pipe Line LLC	Transmission Crossing Agreement	Received		11/19/2018	1/2/2019
				Kentucky Department for Environmental Protection (Division of Water)	Self Permitted	Received			
				Kentucky Transportation Cabinet	Encroachment Permit	Received		3/22/2018	5/16/2018
				Clark County Road Department	Encroachment Permit	Received		9/7/2017	9/8/2017
I12-020076	KRS1 - Replace Incline Car	Design	9/30/2019	Lexington-Fayette Urban County Government, Division of Building Inspection	Commercial New Construction	Not Submitted	3/31/2019		
				Lexington-Fayette Urban County Government, Division of Building Inspection	Land Disturbance	Not Submitted	3/31/2019		
I12-020079	Jacobson Pump Station	Construction (10% Complete)	6/30/2019	Kentucky Department for Environmental Protection (Division of Water)	Construction Permit	Received		10/12/2018	1/17/2019
				Lexington-Fayette Urban County Government, Division of Building Inspection	Commercial New Construction	Received		10/12/2018	1/10/2019
				Lexington-Fayette Urban County Government, Division of Building Inspection	Land Disturbance	Received		10/30/2018	12/21/2018
				Lexington-Fayette Urban County Government, Division of Planning	Development Plan	Not Submitted	TBD		
I12-020094	Cox Street Booster	Planning	12/31/2019	Lexington-Fayette Urban County Government, Division of Building Inspection	Land Disturbance	Not Submitted	TBD - 2019		
				Kentucky Department for Environmental Protection (Division of Water)	Construction Permit	Not Submitted	TBD - 2019		
I12-020095	Mercer Road Booster Station	Planning	3/31/2020	Lexington-Fayette Urban County Government, Division of Building Inspection	Land Disturbance	Not Submitted	TBD - 2020		
				Kentucky Department for Environmental Protection (Division of Water)	Construction Permit	Not Submitted	TBD - 2020		
I12-020099	KRS1 Pump #13 Replacement	Construction (5% Complete)	6/30/2019	Lexington-Fayette Urban County Government, Division of Building Inspection	Electrical Permit	Received			6/6/2018
I12-300008	Owenton Distribution Building	Design	3/31/2020	Kentucky Department of Housing, Buildings, & Construction	Building Plan + Plumbing Permit	Not Submitted	Fall - 2019		
				Owen County	Building Plan + Plumbing Permit + Electrical	Not Submitted	Fall - 2019		
				Kentucky Transportation Cabinet	Encroachment Permit	Not Submitted	Fall - 2019		
				Owen County	Land Disturbance	Not Submitted	Fall - 2019		
I12-030001	ERWA Main Interconnection	Planning	6/30/2023	Kentucky Transportation Cabinet	Encroachment Permit	Not Submitted	TBD - 2020		

KENTUCKY-AMERICAN WATER COMPANY
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Witness: Melissa L. Schwarzell

9. Refer to the Direct Testimony of Nick O. Rowe (Rowe Testimony), page 7, lines 8–11, which states that \$4.1 million of the proposed \$19.9 million revenue increase is due to flowing back to customers the Tax Cut and Jobs Act (TCJA) rate reduction for the stub period of January 1, 2018, through August 31, 2018. Also refer to the Updated Notice of Amount of Deferred Liability filed by Kentucky-American in Case No. 2018-00042, which states that Kentucky-American anticipated filing proposed rates to be effective on or about June 30, 2019, when the deferred liability for the temporary TCJA rate reduction for the stub period had been returned to customers.¹ Last, refer to the Direct Testimony of Melissa L. Schwarzell (Schwarzell Testimony), page 7, lines 1–20, which references two components of Kentucky-American's TCJA rate reduction, the first being a \$5.4 million rate reduction resulting from an ongoing lower corporate income tax rate and the second being the temporary rate reduction of \$3.4 million for the stub period. Ms. Schwarzell states that, because no alternate rate is set to go into effect in July 2019 once the temporary rate reduction for the stub period has expired, \$4.1 million of the proposed \$19.9 million increase in revenue is the annualized effect of the temporary rate reduction. Explain why Kentucky-American decided not to file proposed rates to be effective on or about June 30, 2019, as it stated it would do in Case No. 2018-00042.

Response:

The Company is filing for proposed rates through the filing of this general rate case, which rates have a likely effective date on or about June 30, 2019. The Company believes this is consistent with the statements it made in Case No. 2018-00042, that "KAW anticipates making additional filings, either through this docket or a general rate case, in order to propose rates to be effective after the ten-month period is complete which would be on or about June 30, 2019."²

¹ Case No. 2018-00042, *Electronic Investigation of the Impact of the Tax Cuts and Job Act on the Rates of Kentucky-American Water Company* (filed August 20, 2018). Case No. 2018-00042 was consolidated into this proceeding by Order entered December 21, 2018.

² Case No. 2018-00042, Kentucky American Water Company's Updated Notice of Amount of Deferred Liability, page 3, filed August 20, 2018

KENTUCKY-AMERICAN WATER COMPANY
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COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 10.** Refer to Schwarzell Testimony, page 9, lines 15–17, which states that the approximately \$4.1 million drop in revenue due to the temporary TCJA rate reduction is “partially offset by a net increase in billing determinants.” State the amount of the partial offset and explain why Kentucky-American requests a \$4.1 million increase in revenue related to the temporary TCJA rate reduction if that amount is partially offset.

Response:

The amount of the partial offset is approximately \$0.9 million. This is most easily seen by referring to the Company’s response to the Commission Staff’s Second Request for Information, question 13, attachment 2. This attachment shows the base year and test year at present rates, with the TCJA reduced prices effective September 1, 2018 held constant throughout for the affected customers and with the TCJA Deferrals and Amortizations in the base year being eliminated from row 11. By lifting out the change in price and the TCJA activity, the effect of the billing determinant change is now readily visible.

The referenced section of testimony was attempting to explain that both the TCJA reduction and any changes to billing determinants are included in the case.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Melissa L. Schwarzell, Gregory P. Roach

- 11.** Provide a revised copy of the application, Exhibit 37, Schedule M, without the adjustment for weather normalization, in hard copy form and in electronic Microsoft Excel format.

Response:

The adjustment for weather normalization only applies for residential and commercial classes.

Without weather normalization, based on the same customer counts, total projected usage for residential and commercial classes for test year is 249 million gallons less than projection under weather normalization, using the current tariff, which produces \$1,185,909 less revenues.

There are no changes for remaining water classes.

Lastly, the regression models used to estimate the residential and commercial average usage trend are statistically insignificant when the climatic component of the model is removed. Hence the attachment is provided as estimates for illustration purposes only and do not represent modeling or results of modeling the KAWC would support as valid for purposes of determining usage, sales or revenues in this case.

Please see the attached.

**KAW Projected Usage and Revenues Impact Analysis
with Weather Normalized vs. w/o Weather Normalization**
For Test Year Ended June 30, 2020
For Residential and Commercial Classes

	Decline/Cust/Month in Gallons			Annual Rate Decline %			Total Usage (000s Gallons) - Test Year			Total Revenues (\$) at Current Rate		
	Weather Normalization	W/O Weather Normalization	Variance (Better/(Worse))	Weather Normalization	W/O Weather Normalization	Variance (Better/(Worse))	Weather Normalization	W/O Weather Normalization	Variance (Better/(Worse))	Weather Normalization	W/O Weather Normalization	Variance (Better/(Worse))
Residential	-82	-96	-13	-2.02%	-2.38%	-0.36%	5,631,655	5,496,644	(135,010)	\$ 47,551,194	\$ 46,868,177	\$ (683,017)
Commercial	-210	-360	-150	-0.59%	-1.04%	-0.44%	3,798,369	3,684,386	(113,983)	\$ 21,663,948	\$ 21,161,056	\$ (502,892)
Total	-292	-456	-164	-2.61%	-3.42%	-0.81%	9,430,024	9,181,031	(248,993)	\$ 69,215,142	\$ 68,029,233	\$ (1,185,909)

* Weather normalization only applied to residential and commercial classes. No impact to revenues from other water classes.

Kentucky American Water Company
Case No. 2018-00358
Revenue Summary

Base Period Ended 2/28/19 & the Forecast Year Ended 6/30/20 (At Both Present and Proposed Rates)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-1

Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue Exhibit DR11.xlsx\Exhibit

Line No.	Description	Supporting Schedule Reference	Base Period 12 Months Ended 2/28/19	Adjustments for Present Rates	Forecast Year at Present Rates	Adjustments for Proposed Rates	Forecast Year at Proposed Rates
1							
2	Sales of Water						
3	Residential	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	\$49,884,345	(\$3,016,168)	\$46,868,177	\$10,732,252	\$57,600,429
4	Commercial	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	22,913,926	(1,752,870)	21,161,056	5,255,923	26,416,979
5	Industrial	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	2,841,330	(325,438)	2,515,892	579,966	3,095,858
6	Other Public Authorities	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	6,057,232	(353,857)	5,703,375	1,420,526	7,123,901
7	Sale for Resale	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	1,937,407	(226,317)	1,711,090	367,221	2,078,311
8	Private Fire	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	2,812,617	(147,896)	2,664,721	346,415	3,011,136
9	Public Fire	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	3,807,199	(196,089)	3,611,110	838,067	4,449,177
10	Miscellaneous	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	(1,284,149)	1,344,430	60,281	0	60,281
11	Other Water Revenue	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	0	0	0	0	0
12	Total Sales of Water		88,969,907	(4,674,205)	84,295,702	19,540,370	103,836,072
13							
14							
15	Other Operating Revenues						
16	Other Water Revenue	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	0	0	0	0	0
17	Late Payment Fee	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	837,881	(64,307)	773,574	0	773,574
18	Rent	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	95,656	1,222	96,878	0	96,878
19	Rent I/C	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	154,932	(2)	154,930	0	154,930
20	Collect for Others	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	0	0	0	0	0
21	NSF Check Charge	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	30,420	420	30,840	0	30,840
22	Application/Initiation Fee	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	776,520	(10,839)	765,681	0	765,681
23	Usage Data	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	51,797	(259)	51,538	0	51,538
24	Reconnect Fee	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	573,394	25,470	598,864	0	598,864
25	Miscellaneous Service	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	165	(165)	0	0	0
26	WW-Miscellaneous Service	Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M	0	0	0	0	0
27	Total Other Operating Revenues		2,520,765	(48,460)	2,472,305	0	2,472,305
28							
29							
30	Total Operating Revenues		\$91,490,672	(\$4,722,665)	\$86,768,007	\$19,540,370	\$106,308,377

Kentucky American Water Company
Case No. 2018-00358
Revenue Summary
Summary of Adjustments for Operating Revenues at Present Rates

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-1
Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue Exhibit DR11.xlsx]Exhibit

Line Number	Adjustments	Schedule Reference	Residential	Commercial	Industrial	Other Public Authorities	Sale for Resale
1							
2	Change in Billing Determinants and Prices	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue DR11.xlsx]Sch M	(\$2,600,055)	(\$1,325,724)	(\$297,321)	(\$82,246)	(\$186,711)
3	Unbilled Adjustment		(416,113)	(427,146)	(28,117)	(271,611)	(39,606)
4							0
5							
6							
7	Total		<u>(\$3,016,168)</u>	<u>(\$1,752,870)</u>	<u>(\$325,438)</u>	<u>(\$353,857)</u>	<u>(\$226,317)</u>
8							
9							
10							
11							
12							
13							
14							
15	Change in Billing Determinants and Prices	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue DR11.xlsx]Sch M	(\$136,731)	(\$196,095)	\$1,343,000	\$0	(\$3,481,883)
16	Unbilled Adjustment		(11,165)	6	1,430		(1,192,322)
17							0
18							
19							
20	Total		<u>(\$147,896)</u>	<u>(\$196,089)</u>	<u>\$1,344,430</u>	<u>\$0</u>	<u>(\$4,674,205)</u>

Kentucky American Water Company
 Case No. 2018-00358
 Revenue Summary
 Summary of Adjustments for Operating Revenues at Present Rates

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-1
 Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue Exhibit DR11.xlsx]Exhibi

Line Number	Adjustments	Schedule Reference	Other Water Revenue	Late Payment Fee	Rent	Rent I/C	Collect for Others	NSF Check Charge
1								
2	To Adjust for the Forecast Period	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue DR11.xlsx]Sch M	\$0	(\$64,307)	\$1,222	(\$2)	\$0	\$420
3								
4								
5								
6								
7	Total		\$0	(\$64,307)	\$1,222	(\$2)	\$0	\$420
8								
9								
10								
11								
12								
13								
14								
15	To Adjust for the Forecast Period	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue DR11.xlsx]Sch M	(\$10,839)	(\$259)	\$25,470	(\$165)	\$0	(\$48,460)
16								
17								
18								
19								
20	Total		(\$10,839)	(\$259)	\$25,470	(\$165)	\$0	(\$48,460)

Kentucky American Water Company
Case No. 2018-00358
Revenue Summary
Summary of Adjustments for Operating Revenues for Forecast Year at Proposed Rates

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-1
Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue Exhibit DR11.xlsx]Exhibi

Line Number	Adjustments	Schedule Reference	Residential	Commercial	Industrial	Other Public Authorities	Sale for Resale
1							
2	Proposed Rates	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate	\$10,732,252	\$5,255,923	\$579,966	\$1,420,526	\$367,221
3							
4							
5							
6							
7	Total		\$10,732,252	\$5,255,923	\$579,966	\$1,420,526	\$367,221
8							
9							
10							
11							
12			Private Fire	Public Fire	Miscellaneous	Other Water Revenue	Total
13							
14							
15	Proposed Rates	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate	\$346,415	\$838,067	\$0	\$0	\$19,540,370
16							
17							
18							
19							
20	Total		\$346,415	\$838,067	\$0	\$0	\$19,540,370

Kentucky American Water Company
Case No. 2018-00358
Revenue Summary
Summary of Adjustments for Other Revenues for Forecast Year at Proposed Rates

Witness Responsible: Melissa Schwarzell

Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue Exhibit DR11.xlsx]Exhibit

Line Number	Adjustments	Schedule Reference	Other Water Revenue	Late Payment Fee	Rent	Rent I/C	Collect for Others	NSF Check Charge
1								
2	To Adjust for the Forecast Period	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue DR11.xlsx]Sch M						
3								
4								
5								
6								
7	Total		\$0	\$0	\$0	\$0	\$0	\$0
8								
9								
10								
11								
12								
13								
14								
15	To Adjust for the Forecast Period	Discovery\PSC\Support\PSCDR2_NUM011\[KAWC 2018 Rate Case - Revenue DR11.xlsx]Sch M	\$0		\$0			\$0
16								
17								
18								
19								
20	Total		\$0	\$0	\$0	\$0	\$0	\$0

Kentucky American Water Company
Forecast Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-2

Line #	Class/ Description	Base Period at Present Rates		Base Period at Proposed Rates		Test Year at Present Rates		Test Year at Proposed Rates		Dollar Change	Percentage Change
		Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue		
1	Monthly Billing:										
2											
3	Residential	5,573,778	\$49,468,232	5,573,778	\$57,588,017	5,496,644	\$46,868,177	5,496,644	\$57,600,429	\$10,732,252	22.90%
4	Commercial	3,703,327	22,486,781	3,703,327	26,453,450	3,684,386	21,161,056	3,684,386	26,416,979	5,255,923	24.84%
5	Industrial	651,882	2,813,214	651,882	3,258,199	617,725	2,515,892	617,725	3,095,858	579,966	23.05%
6	Other Public Authority	1,119,903	5,785,622	1,119,903	6,821,432	1,165,872	5,703,375	1,165,872	7,123,901	1,420,526	24.91%
7	Sale for Resale	448,274	1,897,800	448,274	2,181,405	426,827	1,711,088	426,827	2,078,310	367,222	21.46%
8	Private Fire Service:	3,138	2,817,944	3,138	2,981,578	0	2,664,721	0	3,011,136	346,415	13.00%
9	Public Fire Service	0	3,790,713	0	4,409,187	0	3,611,110	0	4,449,177	838,067	23.21%
10	Miscellaneous	5,887	80,861	5,887	73,102	3,153	60,281	3,153	60,281	0	0.00%
11	Other Water Revenue	0	(1,363,747)	0	(1,363,747)	0	0	0	0	0	0.00%
12	Total	11,506,189	\$87,777,420	11,506,189	\$102,402,622	11,394,608	\$84,295,700	11,394,608	\$103,836,071	\$19,540,371	23.18%
13											
14	Miscellaneous Revenues:										
15	Other Water Revenue		\$ -		\$ 0		\$ 0		\$ 0	0	0.00%
16	Late Payment Fee		794,093		794,093		773,574		773,574	0	0.00%
17	Rent		96,878		96,878		96,878		96,878	0	0.00%
18	Rent I/C		154,930		154,930		154,930		154,930	0	0.00%
19	Collect for Others		0		0		0		0	0	0.00%
20	NSF Check Charge		30,804		30,804		30,840		30,840	0	0.00%
21	Application/Initiation Fee		765,681		765,681		765,681		765,681	0	0.00%
22	Usage Data		47,194		47,194		51,538		51,538	0	0.00%
23	Reconnect Fee		583,109		583,109		598,864		598,864	0	0.00%
24	Miscellaneous Service		0		0		0		0	0	0.00%
25	WW-Miscellaneous Service		0		0		0		0	0	0.00%
26	Total Other Revenue		\$ 2,472,689		\$2,472,689		\$2,472,305		\$2,472,305	\$0	0.00%
27											
28	Total Revenue		\$ 90,250,109		\$104,875,311		\$86,768,005		\$106,308,376	\$19,540,371	22.52%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Residential)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change	
		Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue			
1	Residential:																			
2	Minimum Charge:																			
3	5/8" Monthly	1,411,383		\$12.57	\$17,741,966	1,411,383		\$15.00	\$21,170,750	1,431,589		\$12.63	\$18,085,530	1,431,589		\$15.00	\$21,473,835	\$3,388,305	18.73%	
4	3/4" Monthly	4		18.74	82	4		22.40	99	0		0.00	0	0		22.40	0	0	0.00%	
5	1" Monthly	23,800		31.23	743,259	23,800		37.30	887,721	24,807		31.23	774,723	24,807		37.30	925,301	150,578	19.44%	
6	1-1/2" Monthly	156		62.45	9,747	156		74.70	11,659	156		62.45	9,742	156		74.70	11,653	1,911	19.62%	
7	2" Monthly	1,415		99.92	141,366	1,415		119.50	169,068	1,404		99.92	140,288	1,404		119.50	167,778	27,490	19.60%	
8	3" Monthly	0		187.35	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%	
9	4" Monthly	0		312.25	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%	
10	6" Monthly	36		624.50	22,482	36		746.70	26,881	36		624.50	22,482	36		746.70	26,881	4,399	19.57%	
11	8" Monthly	12		999.20	11,990	12		1,194.70	14,336	12		999.17	11,990	12		1,194.70	14,336	2,346	19.57%	
12	Surcharge																	0	0.00%	
13																				
14																				
15																				
16	Volumetric Charges:																			
17	First Block		5,538,657	\$5.5415	\$30,692,532		5,538,657	\$6.3640	\$35,248,014		5,479,516	\$5.0405	\$27,619,250		5,479,516	\$6.3640	\$34,871,641	\$7,252,391	26.26%	
18	Second Block		8,773	\$11.5300	101,149		8,773	6.3640	55,830		17,128	11.9202	204,172		17,128	6.3640	109,004	(95,168)	-46.61%	
19	Third Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
20	Fourth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
21	Fifth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
22	Sixth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
23	Credits		26,348		3,659		26,348		3,659				0		0		0	0	0.00%	
24																				
25	Total		<u>5,573,778</u>		<u>\$49,468,232</u>		<u>5,573,778</u>		<u>\$57,588,017</u>		<u>5,496,644</u>		<u>\$46,868,177</u>		<u>5,496,644</u>		<u>\$57,600,429</u>	<u>\$10,732,252</u>	<u>22.90%</u>	

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Commercial)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales (^{'000} Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Proposed Rate	Total Revenue		
1	Commercial:																		
2	Minimum Charge:																		
3	5/8" Monthly	55,408		\$13.69	\$758,599	55,408		\$15.00	\$831,127	55,239		\$13.70	\$756,775	55,239		\$15.00	\$828,585	\$71,810	9.49%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	29,049		34.07	989,698	29,049		37.30	1,083,526	29,094		34.07	991,233	29,094		37.30	1,085,206	93,973	9.48%
6	1-1/2" Monthly	2,128		68.17	145,043	2,128		74.70	158,937	2,112		68.17	143,975	2,112		74.70	157,766	13,791	9.58%
7	2" Monthly	23,920		109.04	2,608,199	23,920		119.50	2,858,398	24,100		108.60	2,617,271	24,100		119.50	2,879,950	262,679	10.04%
8	3" Monthly	12		204.47	2,454	12		224.00	2,688	12		204.50	2,454	12		224.00	2,688	234	9.54%
9	4" Monthly	366		340.77	124,010	366		373.40	136,674	360		340.77	122,677	360		373.40	134,424	11,747	9.58%
10	6" Monthly	171		681.50	116,796	171		746.70	127,970	168		681.50	114,492	168		746.70	125,446	10,954	9.57%
11	8" Monthly	132		1,090.40	143,631	132		1,194.70	157,370	132		1,090.40	143,933	132		1,194.70	157,700	13,767	9.56%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		3,701,643	\$4.7665	\$17,643,956		3,701,643	\$5.7120	\$21,143,784		3,683,093	\$4.4112	\$16,246,680		3,683,093	\$5.7120	\$21,037,826	\$4,791,146	29.49%
18	Second Block		244	11.5300	2,813		244	5.7120	1,394		640	15.4535	9,890		640	5.7120	3,656	(6,234)	-63.03%
19	Third Block		0	0.0000	0		0	5.7120	0		653	17.8696	11,676		653	5.7120	3,732	(7,944)	-68.04%
20	Fourth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
23	Credits		1,441		(48,418)		1,441		(48,418)				0		0		0	0	0.00%
24																			
25	Total		<u>3,703,327</u>		<u>\$22,486,781</u>		<u>3,703,327</u>		<u>\$26,453,450</u>		<u>3,684,386</u>		<u>\$21,161,056</u>		<u>3,684,386</u>		<u>\$26,416,979</u>	<u>\$5,255,923</u>	<u>24.84%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

Witness Responsible: Melissa Schwarzell

ALL CUSTOMERS (Industrial)

Exhibit 37, Schedule M-3

Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue		
1	Industrial:																		
2	Minimum Charge:																		
3	5/8" Monthly	77		\$13.63	\$1,050	77		\$15.00	\$1,155	72		\$13.63	\$981	72		\$15.00	\$1,080	\$99	10.09%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	48		34.07	1,635	48		37.30	1,790	48		34.07	1,635	48		37.30	1,790	155	9.48%
6	1-1/2" Monthly	24		68.17	1,636	24		74.70	1,793	24		68.17	1,636	24		74.70	1,793	157	9.60%
7	2" Monthly	264		109.04	28,767	264		119.50	31,527	264		109.04	28,787	264		119.50	31,548	2,761	9.59%
8	3" Monthly	0		204.47	0	0		224.00	0	0		204.47	0	0		224.00	0	0	0.00%
9	4" Monthly	120		340.77	40,892	120		373.40	44,808	120		340.77	40,892	120		373.40	44,808	3,916	9.58%
10	6" Monthly	108		681.50	73,602	108		746.70	80,644	108		681.50	73,602	108		746.70	80,644	7,042	9.57%
11	8" Monthly	0		1,090.40	0	0		1,194.70	0	0		1,090.40	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		651,882	\$4.0891	\$2,665,590		651,882	\$4.7500	\$3,096,440		617,725	\$3.8340	\$2,368,359		617,725	\$4.7500	\$2,934,195	\$565,836	23.89%
18	Second Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
19	Third Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
23	Credits		0		42		0		42		0		42		0		42	0	0.00%
24																			
25	Total		<u>651,882</u>		<u>\$2,813,214</u>		<u>651,882</u>		<u>\$3,258,199</u>		<u>617,725</u>		<u>\$2,515,892</u>		<u>617,725</u>		<u>\$3,095,858</u>	<u>\$579,966</u>	<u>23.05%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Other Public Authority)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Other Public Authority:																		
2	Minimum Charge:																		
3	5/8" Monthly	1,582		\$13.63	\$21,561	1,582		\$15.00	\$23,728	1,500		\$13.63	\$20,445	1,500		\$15.00	\$22,500	\$2,055	10.05%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	2,128		34.07	72,515	2,128		37.30	79,390	2,184		34.07	74,409	2,184		37.30	81,463	7,054	9.48%
6	1-1/2" Monthly	355		68.17	24,203	355		74.70	26,521	384		68.17	26,177	384		74.70	28,685	2,508	9.58%
7	2" Monthly	4,705		109.04	513,086	4,705		119.50	562,305	4,860		109.04	529,934	4,860		119.50	580,770	50,836	9.59%
8	3" Monthly	12		204.47	2,454	12		224.00	2,688	12		204.50	2,454	12		224.00	2,688	234	9.54%
9	4" Monthly	526		340.77	179,184	526		373.40	196,342	540		340.77	184,016	540		373.40	201,636	17,620	9.58%
10	6" Monthly	146		681.50	99,499	146		746.70	109,018	168		681.50	114,492	168		746.70	125,446	10,954	9.57%
11	8" Monthly	24		1,090.40	26,170	24		1,194.70	28,673	24		1,090.42	26,170	24		1,194.70	28,673	2,503	9.56%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		1,120,135	\$4.3466	\$4,868,803		1,120,135	\$5.1910	\$5,814,620		1,165,872	\$4.0530	\$4,725,278		1,165,872	\$5.1910	\$6,052,040	\$1,326,762	28.08%
18	Second Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
19	Third Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
23	Credits		(232)		(21,853)		(232)		(21,853)				0				0	0	0.00%
24																			
25	Total		<u>1,119,903</u>		<u>\$5,785,622</u>		<u>1,119,903</u>		<u>\$6,821,432</u>		<u>1,165,872</u>		<u>\$5,703,375</u>		<u>1,165,872</u>		<u>\$7,123,901</u>	<u>\$1,420,526</u>	<u>24.91%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Sale for Resale)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales (^{'000} Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Proposed Rate	Total Revenue		
1	Sale for Resale:																		
2	Minimum Charge:																		
3	5/8" Monthly	0		\$13.63	\$0	0		\$15.00	\$0	0		\$0.00	\$0	0		\$15.00	\$0	\$0	0.00%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		34.07	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	54		68.17	3,681	54		74.70	4,034	60		68.17	4,090	60		74.70	4,482	392	9.58%
7	2" Monthly	58		109.04	6,285	58		119.50	6,887	48		109.00	5,232	48		119.50	5,736	504	9.63%
8	3" Monthly	0		204.47	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	54		340.77	18,413	54		373.40	20,176	72		288.76	20,791	72		373.40	26,885	6,094	29.31%
10	6" Monthly	49		681.50	33,515	49		746.70	36,722	48		681.50	32,712	48		746.70	35,842	3,130	9.57%
11	8" Monthly	0		1,090.40	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Owenton				0				0				0.00				0	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		437,975	\$4.0915	\$1,791,984		437,975	\$4.7600	\$2,084,760		416,336	\$3.9023	\$1,624,657		416,336	\$4.7600	\$1,981,759	\$357,102	21.98%
18	Second Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
19	Third Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
23	SFR-Intercompany		0	0.0000	15,096		0		0		0	0.0000	0		0		0		
24	Credits		0	0.0000	5,654		0		5,654		0	0.0000	0		0		0	0	0.00%
25	Special Contract		10,299	2.2500	23,172		10,299	2.2500	23,172		10,491	\$2.2500	\$23,606		10,491	2.2500	\$23,606		
26	Total		<u>448,274</u>		<u>\$1,897,800</u>		<u>448,274</u>		<u>\$2,181,405</u>		<u>426,827</u>		<u>\$1,711,088</u>		<u>426,827</u>		<u>\$2,078,310</u>	<u>\$367,222</u>	<u>21.46%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Fire)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Discovery\PS\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue DR11.xlsx\Sch M

Line #	Connection Size	Base Period at Present Rates			Base Period at Proposed Rates			Test Year at Present Rates			Test Year at Proposed Rates			Dollar Change	Percentage Change
		Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue	Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue		
1	Private Fire Service:														
2	Hydrant	14,851	\$75.33	\$1,118,664	14,851	\$80.12	\$1,189,854	14,880	\$70.90	\$1,054,992	14,880	\$80.12	\$1,192,186	\$137,194	13.00%
3	2"	879	8.61	7,566	879	\$9.16	8,052	900	8.11	7,299	900	9.16	8,244	945	12.95%
4	4"	5,508	34.63	190,723	5,508	\$36.92	203,359	5,748	32.67	187,787	5,748	36.92	212,216	24,429	13.01%
5	6"	11,473	78.03	895,171	11,473	\$83.04	952,677	11,616	73.49	853,660	11,616	83.04	964,593	110,933	12.99%
6	8"	3,804	138.73	527,716	3,804	\$147.62	561,523	3,840	130.64	501,658	3,840	147.62	566,861	65,203	13.00%
7	10"	152	216.61	32,925	152	\$230.72	35,069	156	204.18	31,852	156	230.72	35,992	4,140	13.00%
8	12"	72	312.85	22,525	72	\$332.71	23,955	72	294.43	21,199	72	332.71	23,955	2,756	13.00%
9	14"	0	0.00	0	0	\$479.07	0	0	423.96	0	0	479.07	0	0	0.00%
10	16"	12	555.51	6,666	12	\$590.78	7,089	12	522.81	6,274	12	590.78	7,089	815	12.99%
11															
12															
13	Credits						0						0		
14	Total	<u>36,750</u>		<u>\$2,801,956</u>	<u>36,750</u>		<u>\$2,981,578</u>	<u>37,224</u>		<u>\$2,664,721</u>	<u>37,224</u>		<u>\$3,011,136</u>	<u>\$346,415</u>	<u>13.00%</u>
15															
16	Volumetric Charges:														
17	First Block	3,138	\$5.0952	\$15,988	3,138	\$0.0000	\$0	0	\$5.0952	\$0	0	\$0.0000	\$0	\$0	0.00%
18															
19															
20	Public Fire Protection:														
21	Public Fire Hydrants	90,026	\$42.29	\$3,807,204	90,026	\$49.16	\$4,425,678	90,504	\$39.90	\$3,611,110	90,504	\$49.16	\$4,449,177	\$838,067	23.21%
22															
23		<u>90,026</u>		<u>\$3,807,204</u>	<u>90,026</u>		<u>\$4,425,678</u>	<u>90,504</u>		<u>\$3,611,110</u>	<u>90,504</u>		<u>\$4,449,177</u>	<u>\$838,067</u>	<u>23.21%</u>
24															
25	Credits	3,098		(16,491)			(16,491)			0			0		
26															
27	Total Fire			<u>\$6,608,657</u>			<u>\$7,390,765</u>			<u>\$6,275,831</u>			<u>\$7,460,313</u>	<u>\$1,184,482</u>	<u>18.87%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Miscellaneous)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period				Base Period				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales 0	Current Rate	Total Revenue	Customer Meter Billings	Sales 0	Current Rate	Total Revenue	Customer Meter Billings	Sales 0	Current Rate	Total Revenue	Customer Meter Billings	Sales 0	Proposed Rate	Total Revenue		
1	Miscellaneous:																		
2	Minimum Charge:																		
3	5/8" Monthly	28		\$13.63	\$383	28		\$13.63	\$383	48		\$13.63	\$654	48		\$13.63	\$654	\$0	0.00%
4	3/4" Monthly	0		\$20.46	0	0		20.46	0	0		20.46	0	0		20.46	0	0	0.00%
5	1" Monthly	262		\$34.07	8,930	262		34.07	8,930	288		34.07	9,812	288		34.07	9,812	0	0.00%
6	1-1/2" Monthly	0		\$68.17	0	0		68.17	0	0		68.17	0	0		68.17	0	0	0.00%
7	2" Monthly	0		\$109.04	0	0		109.04	0	0		109.04	0	0		109.04	0	0	0.00%
8	3" Monthly	177		\$204.47	36,257	177		204.47	36,257	192		204.47	39,258	192		204.47	39,258	0	0.00%
9	4" Monthly	0		\$340.77	0	0		340.77	0	0		340.77	0	0		340.77	0	0	0.00%
10	6" Monthly	0		\$681.50	0	0		681.50	0	0		681.50	0	0		681.50	0	0	0.00%
11	8" Monthly	0		\$1,090.40	0	0		1,090.40	0	0		1,090.40	0	0		1,090.40	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		8,171	\$4.2975	\$35,116		8,171	\$3.3480	\$27,357		3,153	\$3.3480	\$10,557		3,153	\$3.3480	\$10,557	\$0	0.00%
18	Second Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
19	Third Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
23	Credits		(2,284)		175		(2,284)		175		0		0		0		0	0	0.00%
24																			
25	Total		<u>5,887</u>		<u>\$80,861</u>		<u>5,887</u>		<u>\$73,102</u>		<u>3,153</u>		<u>\$60,281</u>		<u>3,153</u>		<u>\$60,281</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Forecast Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

Witness Responsible: Melissa Schwarzell

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN

Exhibit 37, Schedule M-2

Line #	Class/ Description	Base Period at Present Rates		Base Period at Proposed Rates		Test Year at Present Rates		Test Year at Proposed Rates		Dollar Change	Percentage Change
		Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue		
1	Monthly Billing:										
2											
3	Residential	5,554,153	\$49,164,337	5,554,153	\$57,356,717	5,459,429	\$46,308,842	5,459,429	\$57,183,228	\$10,874,386	23.48%
4	Commercial	3,702,655	22,476,650	3,702,655	26,444,398	3,682,384	21,128,224	3,682,384	26,385,811	5,257,587	24.88%
5	Industrial	651,882	2,813,214	651,882	3,258,199	617,725	2,515,892	617,725	3,095,858	579,966	23.05%
6	Other Public Authority	1,119,903	5,785,622	1,119,903	6,821,432	1,165,872	5,703,375	1,165,872	7,123,901	1,420,526	24.91%
7	Sale for Resale	448,274	1,897,800	448,274	2,181,405	389,754	1,541,318	389,754	1,897,359	356,041	23.10%
8	Private Fire Service:	3,138	2,817,944	3,138	2,981,578	0	2,664,721	0	3,011,136	346,415	13.00%
9	Public Fire Service	0	3,790,713	0	4,409,187	0	3,591,958	0	4,425,580	833,622	23.21%
10	Miscellaneous	5,887	80,696	5,887	72,937	3,153	60,281	3,153	60,281	0	0.00%
11	Other Water Revenue	0	(1,363,582)	0	(1,363,582)	0	0	0	0	0	0.00%
12	Total	11,485,892	\$87,463,394	11,485,892	\$102,162,270	11,318,317	83,514,611	11,318,317	\$103,183,154	\$19,668,543	23.55%
13											
14	Miscellaneous Revenues:										
15	Other Water Revenue		\$ -		\$0		\$0		\$0	0	0.00%
16	Late Payment Fee		791,624		791,624		770,635		770,635	0	0.00%
17	Rent		96,878		96,878		96,878		96,878	0	0.00%
18	Rent I/C		154,930		154,930		154,930		154,930	0	0.00%
19	Collect for Others		0		0		0		0	0	0.00%
20	NSF Check Charge		30,804		30,804		30,840		30,840	0	0.00%
21	Application/Initiation Fee		763,945		763,945		763,945		763,945	0	0.00%
22	Usage Data		47,194		47,194		51,538		51,538	0	0.00%
23	Reconnect Fee		582,885		582,885		598,864		598,864	0	0.00%
24	Miscellaneous Service		0		0		0		0	0	0.00%
25	WW-Miscellaneous Service		0		0		0		0	0	0.00%
26	Total Other Revenue		\$ 2,468,260		\$2,468,260		\$2,467,629		\$2,467,629	\$0	0.00%
27											
28	Total Revenue		\$ 89,931,654		\$104,630,530		\$85,982,240		\$105,650,783	\$19,668,543	22.88%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Residential)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change	
		Customer Meter Billings	Sales (^{'000} Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (^{'000} Gal)	Proposed Rate	Total Revenue			
		1	Residential:																	
2	Minimum Charge:																			
3	5/8" Monthly	1,404,177		\$12.49	\$17,538,171	1,404,177		\$15.00	\$21,062,655	1,419,565		\$12.49	\$17,730,367	1,419,565		\$15.00	\$21,293,475	\$3,563,108	20.10%	
4	3/4" Monthly	4		18.74	82	4		22.40	99	0		0.00	0	0		22.40	0	0	0.00%	
5	1" Monthly	23,800		31.23	743,259	23,800		37.30	887,721	24,807		31.23	774,723	24,807		37.30	925,301	150,578	19.44%	
6	1-1/2" Monthly	156		62.45	9,747	156		74.70	11,659	156		62.45	9,742	156		74.70	11,653	1,911	19.62%	
7	2" Monthly	1,415		99.92	141,366	1,415		119.50	169,068	1,404		99.92	140,288	1,404		119.50	167,778	27,490	19.60%	
8	3" Monthly	0		187.35	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%	
9	4" Monthly	0		312.25	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%	
10	6" Monthly	36		624.50	22,482	36		746.70	26,881	36		624.50	22,482	36		746.70	26,881	4,399	19.57%	
11	8" Monthly	12		999.20	11,990	12		1,194.70	14,336	12		999.17	11,990	12		1,194.70	14,336	2,346	19.57%	
12	Surcharge																	0	0.00%	
13																				
14																				
15																				
16	Volumetric Charges:																			
17	First Block		5,527,905	\$5.5523	\$30,692,532		5,527,905	\$6.3640	\$35,179,590		5,459,429	\$5.0590	\$27,619,250		5,459,429	\$6.3640	\$34,743,804	\$7,124,554	25.80%	
18	Second Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
19	Third Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
20	Fourth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
21	Fifth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
22	Sixth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%	
23	Credits		26,248		4,708		26,248		4,708				0		0		0	0	0.00%	
24																				
25	Total		<u>5,554,153</u>		<u>\$49,164,337</u>		<u>5,554,153</u>		<u>\$57,356,717</u>		<u>5,459,429</u>		<u>\$46,308,842</u>		<u>5,459,429</u>		<u>\$57,183,228</u>	<u>\$10,874,386</u>	<u>23.48%</u>	

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Commercial)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter	Sales	Current	Total	Customer Meter	Sales	Proposed	Total	Customer Meter	Sales	Current	Total	Customer Meter	Sales	Proposed	Total		
		Billings	('000 Gal)	Rate	Revenue	Billings	('000 Gal)	Rate	Revenue	Billings	('000 Gal)	Rate	Revenue	Billings	('000 Gal)	Rate	Revenue		
1	Commercial:																		
2	Minimum Charge:																		
3	5/8" Monthly	55,178		\$13.63	\$752,071	55,178		\$15.00	\$827,664	54,975		\$13.63	\$749,309	54,975		\$15.00	\$824,625	\$75,316	10.05%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	29,049		34.07	989,698	29,049		37.30	1,083,526	29,094		34.07	991,233	29,094		37.30	1,085,206	93,973	9.48%
6	1-1/2" Monthly	2,128		68.17	145,043	2,128		74.70	158,937	2,112		68.17	143,975	2,112		74.70	157,766	13,791	9.58%
7	2" Monthly	23,920		109.04	2,608,199	23,920		119.50	2,858,398	23,968		109.04	2,613,471	23,968		119.50	2,864,176	250,705	9.59%
8	3" Monthly	12		204.47	2,454	12		224.00	2,688	12		204.47	2,454	12		224.00	2,688	234	9.54%
9	4" Monthly	362		340.77	123,220	362		373.40	135,018	360		340.77	122,677	360		373.40	134,424	11,747	9.58%
10	6" Monthly	171		681.50	116,796	171		746.70	127,970	168		681.50	114,492	168		746.70	125,446	10,954	9.57%
11	8" Monthly	132		1,090.40	143,631	132		1,194.70	157,370	132		1,090.40	143,933	132		1,194.70	157,700	13,767	9.56%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		3,701,198	\$4.7671	\$17,643,956		3,701,198	\$5.7120	\$21,141,245		3,682,384	\$4.4120	\$16,246,680		3,682,384	\$5.7120	\$21,033,780	\$4,787,100	29.47%
18	Second Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
19	Third Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
23	Credits		1,456		(48,418)		1,456		(48,418)				0				0	0	0.00%
24																			
25	Total		<u>3,702,655</u>		<u>\$22,476,650</u>		<u>3,702,655</u>		<u>\$26,444,398</u>		<u>3,682,384</u>		<u>\$21,128,224</u>		<u>3,682,384</u>		<u>\$26,385,811</u>	<u>\$5,257,587</u>	<u>24.88%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Industrial)

Exhibit 37, Schedule M-3

Witness Responsible: Melissa Schwarzell

Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue - KY American DR11.xlsx\Sch M

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue		
1	Industrial:																		
2	Minimum Charge:																		
3	5/8" Monthly	77		\$13.63	\$1,050	77		\$15.00	\$1,155	72		\$13.63	\$981	72		\$15.00	\$1,080	\$99	10.09%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	48		34.07	1,635	48		37.30	1,790	48		34.07	1,635	48		37.30	1,790	155	9.48%
6	1-1/2" Monthly	24		68.17	1,636	24		74.70	1,793	24		68.17	1,636	24		74.70	1,793	157	9.60%
7	2" Monthly	264		109.04	28,767	264		119.50	31,527	264		109.04	28,787	264		119.50	31,548	2,761	9.59%
8	3" Monthly	0		204.47	0	0		224.00	0	0		204.47	0	0		224.00	0	0	0.00%
9	4" Monthly	120		340.77	40,892	120		373.40	44,808	120		340.77	40,892	120		373.40	44,808	3,916	9.58%
10	6" Monthly	108		681.50	73,602	108		746.70	80,644	108		681.50	73,602	108		746.70	80,644	7,042	9.57%
11	8" Monthly	0		1,090.40	0	0		1,194.70	0	0		1,090.40	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		651,882	\$4.0891	\$2,665,590		651,882	\$4.7500	\$3,096,440		617,725	\$3.8340	\$2,368,359		617,725	\$4.7500	\$2,934,195	\$565,836	23.89%
18	Second Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
19	Third Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
23	Credits		0		42		0		42		0		42		0		42	0	0.00%
24																			
25	Total		<u>651,882</u>		<u>\$2,813,214</u>		<u>651,882</u>		<u>\$3,258,199</u>		<u>617,725</u>		<u>\$2,515,892</u>		<u>617,725</u>		<u>\$3,095,858</u>	<u>\$579,966</u>	<u>23.05%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Other Public Authority)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue		
		Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue - KY American DR11.xlsx\Sch M																	
1	Other Public Authority:																		
2	Minimum Charge:																		
3	5/8" Monthly	1,582	\$13.63		\$21,561	1,582	\$15.00		\$23,728	1,500	\$13.63	\$20,445	1,500	\$15.00		\$22,500	\$2,055	10.05%	
4	3/4" Monthly	0	20.46		0	0	22.40		0	0	0.00	0	0	22.40		0	0	0.00%	
5	1" Monthly	2,128	34.07		72,515	2,128	37.30		79,390	2,184	34.07	74,409	2,184	37.30		81,463	7,054	9.48%	
6	1-1/2" Monthly	355	68.17		24,203	355	74.70		26,521	384	68.17	26,177	384	74.70		28,685	2,508	9.58%	
7	2" Monthly	4,705	109.04		513,086	4,705	119.50		562,305	4,860	109.04	529,934	4,860	119.50		580,770	50,836	9.59%	
8	3" Monthly	12	204.47		2,454	12	224.00		2,688	12	204.50	2,454	12	224.00		2,688	234	9.54%	
9	4" Monthly	526	340.77		179,184	526	373.40		196,342	540	340.77	184,016	540	373.40		201,636	17,620	9.58%	
10	6" Monthly	146	681.50		99,499	146	746.70		109,018	168	681.50	114,492	168	746.70		125,446	10,954	9.57%	
11	8" Monthly	24	1,090.40		26,170	24	1,194.70		28,673	24	1,090.42	26,170	24	1,194.70		28,673	2,503	9.56%	
12	Surcharge																0	0.00%	
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block	1,120,135	\$4.3466		\$4,868,803	1,120,135	\$5.1910		\$5,814,620	1,165,872	\$4.0530	\$4,725,278	1,165,872	\$5.1910		\$6,052,040	\$1,326,762	28.08%	
18	Second Block	0	0.0000		0	0	5.1910		0	0	0.0000	0	0	5.1910		0	0	0.00%	
19	Third Block	0	0.0000		0	0	5.1910		0	0	0.0000	0	0	5.1910		0	0	0.00%	
20	Fourth Block	0	0.0000		0	0	5.1910		0	0	0.0000	0	0	5.1910		0	0	0.00%	
21	Fifth Block	0	0.0000		0	0	5.1910		0	0	0.0000	0	0	5.1910		0	0	0.00%	
22	Sixth Block	0	0.0000		0	0	5.1910		0	0	0.0000	0	0	5.1910		0	0	0.00%	
23	Credits	(232)			(21,853)	(232)			(21,853)			0				0	0	0.00%	
24																			
25	Total	1,119,903			\$5,785,622	1,119,903			\$6,821,432	1,165,872		\$5,703,375	1,165,872			\$7,123,901	\$1,420,526	24.91%	

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Fire)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Connection Size	Base Period at Present Rates			Base Period at Proposed Rates			Test Year at Present Rates			Test Year at Proposed Rates			Dollar Change	Percentage Change
		Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue	Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue		
		<p align="center">Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue - KY American DR11.xlsx\Sch M</p>													
1	Private Fire Service:														
2	Hydrant	14,851	\$75.33	\$1,118,664	14,851	\$80.12	\$1,189,854	14,880	\$70.90	\$1,054,992	14,880	\$80.12	\$1,192,186	\$137,194	13.00%
3	2"	879	8.61	7,566	879	9.16	8,052	900	8.11	7,299	900	9.16	8,244	945	12.95%
4	4"	5,508	34.63	190,723	5,508	36.92	203,359	5,748	32.67	187,787	5,748	36.92	212,216	24,429	13.01%
5	6"	11,473	78.03	895,171	11,473	83.04	952,677	11,616	73.49	853,660	11,616	83.04	964,593	110,933	12.99%
6	8"	3,804	138.73	527,716	3,804	147.62	561,523	3,840	130.64	501,658	3,840	147.62	566,861	65,203	13.00%
7	10"	152	216.61	32,925	152	230.72	35,069	156	204.18	31,852	156	230.72	35,992	4,140	13.00%
8	12"	72	312.85	22,525	72	332.71	23,955	72	294.43	21,199	72	332.71	23,955	2,756	13.00%
9	14"	0	0.00	0	0	479.07	0	0	423.96	0	0	479.07	0	0	0.00%
10	16"	12	555.51	6,666	12	590.78	7,089	12	522.81	6,274	12	590.78	7,089	815	12.99%
11															
12															
13	Credits						0						0		
14	Total	<u>36,750</u>		<u>\$2,801,956</u>	<u>36,750</u>		<u>\$2,981,578</u>	<u>37,224</u>		<u>\$2,664,721</u>	<u>37,224</u>		<u>\$3,011,136</u>	<u>\$346,415</u>	<u>13.00%</u>
15															
16	Volumetric Charges:														
17	First Block	3,138	\$5.0952	\$15,988	3,138	\$0.0000	\$0	0	\$5.0952	\$0	0	\$0.0000	\$0	\$0	0.00%
18															
19															
20	Public Fire Protection:														
21	Public Fire Hydrants	90,026	\$42.29	\$3,807,204	90,026	\$49.16	\$4,425,678	90,024	\$39.90	\$3,591,958	90,024	\$49.16	\$4,425,580	\$833,622	23.21%
22															
23		<u>90,026</u>		<u>\$3,807,204</u>	<u>90,026</u>		<u>\$4,425,678</u>	<u>90,024</u>		<u>\$3,591,958</u>	<u>90,024</u>		<u>\$4,425,580</u>	<u>\$833,622</u>	<u>23.21%</u>
24															
25	Credits	3,098		(16,491)			(16,491)			0			0		
26															
27	Total Fire			<u>\$6,608,657</u>			<u>\$7,390,765</u>			<u>\$6,256,679</u>			<u>\$7,436,716</u>	<u>\$1,180,037</u>	<u>18.86%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Miscellaneous)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period				Base Period				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Sales 0	Current Rate	Total Revenue	Customer		Sales 0	Current Rate	Total Revenue	Customer		Sales 0	Proposed Rate	Total Revenue			
		Meter Billings					Meter Billings					Meter Billings					Meter Billings		
1	Miscellaneous:																		
2	Minimum Charge:																		
3	5/8" Monthly	28		\$13.63	\$383	28		\$13.63	\$383	48		\$13.63	\$654	48		\$13.63	\$654	\$0	0.00%
4	3/4" Monthly	0		\$20.46	0	0		20.46	0	0		20.46	0	0		20.46	0	0	0.00%
5	1" Monthly	262		\$34.07	8,930	262		34.07	8,930	288		34.07	9,812	288		34.07	9,812	0	0.00%
6	1-1/2" Monthly	0		\$68.17	0	0		68.17	0	0		68.17	0	0		68.17	0	0	0.00%
7	2" Monthly	0		\$109.04	0	0		109.04	0	0		109.04	0	0		109.04	0	0	0.00%
8	3" Monthly	177		\$204.47	36,257	177		204.47	36,257	192		204.47	39,258	192		204.47	39,258	0	0.00%
9	4" Monthly	0		\$340.77	0	0		340.77	0	0		340.77	0	0		340.77	0	0	0.00%
10	6" Monthly	0		\$681.50	0	0		681.50	0	0		681.50	0	0		681.50	0	0	0.00%
11	8" Monthly	0		\$1,090.40	0	0		1,090.40	0	0		1,090.40	0	0		1,090.40	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		8,171	\$4.2975	\$35,116		8,171	\$3.3480	\$27,357		3,153	\$3.3480	\$10,557		3,153	\$3.3480	\$10,557	\$0	0.00%
18	Second Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
19	Third Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
23	Credits		(2,284)		10		(2,284)		10		0		0		0		0	0	0.00%
24																			
25	Total		<u>5,887</u>		<u>\$80,696</u>		<u>5,887</u>		<u>\$72,937</u>		<u>3,153</u>		<u>\$60,281</u>		<u>3,153</u>		<u>\$60,281</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Forecast Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
NORTH MIDDLETOWN

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-2

Line #	Class/ Description	Base Period at Present Rates		Base Period at Proposed Rates		Test Year at Present Rates		Test Year at Proposed Rates		Dollar Change	Percentage Change
		Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue		
1	Monthly Billing:										
2											
3	Residential	0	\$0	0	\$0	17,691	\$250,158	17,691	\$182,608	(\$67,550)	-27.00%
4	Commercial	0	0	0	0	1,313	22,553	1,313	23,276	723	3.21%
5	Industrial	0	0	0	0	0	0	0	0	0	0.00%
6	Other Public Authority	0	0	0	0	0	0	0	0	0	0.00%
7	Sale for Resale	0	0	0	0	37,074	169,772	37,074	180,952	11,180	6.59%
8	Private Fire Service:	0	0	0	0	0	0	0	0	0	0.00%
9	Public Fire Service	0	0	0	0	0	19,152	0	23,597	4,445	23.21%
10	Miscellaneous	0	0	0	0	0	0	0	0	0	0.00%
11	Other Water Revenue	0	0	0	0	0	0	0	0	0	0.00%
12	Total	0	\$0	0	\$0	56,079	\$461,635	56,079	\$410,433	(\$51,202)	-11.09%
13											
14	Miscellaneous Revenues:										
15	Other Water Revenue		\$ -		\$0		\$0		\$0	0	0.00%
16	Late Payment Fee		0		0		0		0	0	0.00%
17	Rent		0		0		0		0	0	0.00%
18	Rent I/C		0		0		0		0	0	0.00%
19	Collect for Others		0		0		0		0	0	0.00%
20	NSF Check Charge		0		0		0		0	0	0.00%
21	Application/Initiation Fee		0		0		0		0	0	0.00%
22	Usage Data		0		0		0		0	0	0.00%
23	Reconnect Fee		0		0		0		0	0	0.00%
24	Miscellaneous Service		0		0		0		0	0	0.00%
25	WW-Miscellaneous Service		0		0		0		0	0	0.00%
26	Total Other Revenue		\$ -		\$0		\$0		\$0	\$0	0.00%
27											
28	Total Revenue		\$ -		\$0		\$461,635		\$410,433	(\$51,202)	-11.09%

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
 NORTH MIDDLETOWN (Residential)

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Residential:																		
2	<u>Minimum Charge:</u>																		
3	5/8" Monthly	0		\$0.00	\$0	0		\$15.00	\$0	4,668		\$31.52	\$147,135	4,668		\$15.00	\$70,020	(\$77,115)	-52.41%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	<u>Volumetric Charges:</u>																		
17	First Block		0	\$0.0000	\$0		0	\$6.3640	\$0		9,336	\$0.0000	\$0		9,336	\$6.3640	\$59,414	\$59,414	0.00%
18	Second Block		0	12.3300	0		0	6.3640	0		8,355	12.3300	103,023		8,355	6.3640	53,174	(49,849)	-48.39%
19	Third Block		0	11.0700	0		0	6.3640	0		0	11.0700	0		0	6.3640	0	0	0.00%
20	Fourth Block		0	9.4800	0		0	6.3640	0		0	9.4800	0		0	6.3640	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
23	Credits		0		0		0		0				0		0		0	0	0.00%
24																			
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>17,691</u>		<u>\$250,158</u>		<u>17,691</u>		<u>\$182,608</u>	<u>(\$67,550)</u>	<u>-27.00%</u>

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
 NORTH MIDDLETOWN (Commercial)

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue		
1	Commercial:																		
2	<u>Minimum Charge:</u>																		
3	5/8" Monthly	0		\$28.79	\$0	0		\$15.00	\$0	0		\$28.79	\$0	0		\$15.00	\$0	\$0	0.00%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	0		28.79	0	0		119.50	0	132		28.79	3,800	132		119.50	15,774	11,974	315.11%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	<u>Volumetric Charges:</u>																		
17	First Block		0	\$0.0000	\$0		0	\$5.7120	\$0		264	\$0.0000	\$0		264	\$5.7120	\$1,508	\$1,508	0.00%
18	Second Block		0	17.8700	0		0	5.7120	0		396	17.8700	7,077		396	5.7120	2,262	(4,815)	-68.04%
19	Third Block		0	17.8700	0		0	5.7120	0		653	17.8700	11,676		653	5.7120	3,732	(7,944)	-68.04%
20	Fourth Block		0	17.8700	0		0	5.7120	0		0	17.8700	0		0	5.7120	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
23	Credits		0		0		0		0				0		0		0	0	0.00%
24																			
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>1,313</u>		<u>\$22,553</u>		<u>1,313</u>		<u>\$23,276</u>	<u>\$723</u>	<u>3.21%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
NORTH MIDDLETOWN (Industrial)

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue - North Middletown BD DR11.xlsx\Sch M Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change	
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue			
		Meter Billings	Sales (‘000 Gal)			Meter Billings	Sales (‘000 Gal)			Meter Billings	Sales (‘000 Gal)			Meter Billings	Sales (‘000 Gal)					Meter Billings
1	Industrial:																			
2	<u>Minimum Charge:</u>																			
3	5/8" Monthly	0		\$0.00	\$0	0		\$15.00	\$0	0		\$0.00	\$0	0		\$15.00	\$0	\$0	0.00%	
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%	
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%	
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%	
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%	
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%	
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%	
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%	
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%	
12	Surcharge																	0	0.00%	
13																				
14																				
15																				
16	<u>Volumetric Charges:</u>																			
17	First Block		0	\$0.0000	\$0		0	\$4.7500	\$0		0	\$0.0000	\$0		0	\$4.7500	\$0	\$0	0.00%	
18	Second Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
19	Third Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
20	Fourth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
21	Fifth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
22	Sixth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
23	Credits		0		0		0		0		0		0		0		0	0	0.00%	
24																				
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

NORTH MIDDLETOWN (Other Public Authority)

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change	
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue			
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)					Meter Billings
1	Other Public Authority:																			
2	<u>Minimum Charge:</u>																			
3	5/8" Monthly	0		\$0.00	\$0	0		\$15.00	\$0	0		\$0.00	\$0	0		\$15.00	\$0	\$0	0.00%	
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%	
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%	
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%	
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%	
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%	
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%	
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%	
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%	
12	Surcharge																	0	0.00%	
13																				
14																				
15																				
16	<u>Volumetric Charges:</u>																			
17	First Block		0	\$0.0000	\$0		0	\$5.1910	\$0		0	\$0.0000	\$0		0	\$5.1910	\$0	\$0	0.00%	
18	Second Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%	
19	Third Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%	
20	Fourth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%	
21	Fifth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%	
22	Sixth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%	
23	Credits		0		0		0		0		0		0		0		0	0	0.00%	
24																				
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
 NORTH MIDDLETOWN (Sale for Resale)

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Sale for Resale:																		
2	Minimum Charge:																		
3	5/8" Monthly	0		\$28.79	\$0	0		\$15.00	\$0	0		\$28.79	\$0	0		\$15.00	\$0	\$0	0.00%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		28.79	0	0		373.40	0	12		28.79	345	12		373.40	4,481	4,136	1198.84%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Owenton				0				0				0				0	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		0	\$4.5700	\$0		0	\$4.7600	\$0		37,074	\$4.5700	\$169,427		37,074	\$4.7600	\$176,471	\$7,044	4.16%
18	Second Block		0	4.5700	0		0	4.7600	0		0	4.5700	0		0	4.7600	0	0	0.00%
19	Third Block		0	4.5700	0		0	4.7600	0		0	4.5700	0		0	4.7600	0	0	0.00%
20	Fourth Block		0	4.5700	0		0	4.7600	0		0	4.5700	0		0	4.7600	0	0	0.00%
21	Fifth Block		0	4.5700	0		0	4.7600	0		0	4.5700	0		0	4.7600	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
23	SFR-Intercompany				0		0		0		0	0.0000	0		0		0	0	0.00%
24	Credits				0		0		0		0	0.0000	0		0		0	0	0.00%
25	Special Contract				0		0	0.0000	0		0	0.0000	\$0		0	0.0000	\$0	0	0.00%
26	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>37,074</u>		<u>\$169,772</u>		<u>37,074</u>		<u>\$180,952</u>	<u>\$11,180</u>	<u>6.59%</u>

**Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358**

**Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
NORTH MIDDLETOWN (Fire)**

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Connection Size	Base Period at Present Rates			Base Period at Proposed Rates			Test Year at Present Rates			Test Year at Proposed Rates			Dollar Change	Percentage Change
		Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue	Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue		
1	Private Fire Service:														
2	Hydrant	0	\$0.00	\$0	0	\$80.12	\$0	0	\$70.90	\$0	0	\$80.12	\$0	\$0	0.00%
3	2"	0	0.00	0	0	\$9.16	0	0	8.11	0	0	9.16	0	0	0.00%
4	4"	0	0.00	0	0	\$36.92	0	0	32.67	0	0	36.92	0	0	0.00%
5	6"	0	0.00	0	0	\$83.04	0	0	73.49	0	0	83.04	0	0	0.00%
6	8"	0	0.00	0	0	\$147.62	0	0	130.64	0	0	147.62	0	0	0.00%
7	10"	0	0.00	0	0	\$230.72	0	0	204.18	0	0	230.72	0	0	0.00%
8	12"	0	0.00	0	0	\$332.71	0	0	294.43	0	0	332.71	0	0	0.00%
9	14"	0	0.00	0	0	\$479.07	0	0	423.96	0	0	479.07	0	0	0.00%
10	16"	0	0.00	0	0	\$590.78	0	0	522.81	0	0	590.78	0	0	0.00%
11															
12															
13	Credits						0					0			
14	Total	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>
15															
16	Volumetric Charges:														
17	First Block	0	\$0.0000	\$0	0	\$0.0000	\$0	0	\$0.0000	\$0	0	\$0.0000	\$0	\$0	0.00%
18															
19															
20	Public Fire Protection:														
21	Public Fire Hydrants	0	\$0.00	\$0	0	\$49.16	\$0	480	\$39.90	\$19,152	480	\$49.16	\$23,597	\$4,445	23.21%
22															
23		<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>480</u>		<u>\$19,152</u>	<u>480</u>		<u>\$23,597</u>	<u>\$4,445</u>	<u>23.21%</u>
24															
25	Credits	0		0			0			0			0		
26															
27	Total Fire			<u>\$0</u>			<u>\$0</u>			<u>\$19,152</u>			<u>\$23,597</u>	<u>\$4,445</u>	<u>23.21%</u>

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
 NORTH MIDDLETOWN (Miscellaneous)

Witness Responsible: Linda Bridwell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period				Base Period				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Sales 0	Current Rate	Total Revenue	Customer		Sales 0	Current Rate	Total Revenue	Customer		Sales 0	Proposed Rate	Total Revenue			
		Meter Billings					Meter Billings					Meter Billings					Meter Billings		
1	Miscellaneous:																		
2	Minimum Charge:																		
3	5/8" Monthly	0		\$0.00	\$0	0		\$0.00	\$0	0		\$0.00	\$0	0		\$0.00	\$0	\$0	0.00%
4	3/4" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
5	1" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
6	1-1/2" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
7	2" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
8	3" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
9	4" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
10	6" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
11	8" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		0	\$0.0000	\$0		0	\$3.3480	\$0		0	\$3.3480	\$0		0	\$3.3480	\$0	\$0	0.00%
18	Second Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
19	Third Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
23	Credits		0		0		0		0		0		0		0		0	0	0.00%
24																			
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
 Forecast Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
 EASTERN ROCKCASTLE

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-2

Line #	Class/ Description	Base Period at Present Rates		Base Period at Proposed Rates		Test Year at Present Rates		Test Year at Proposed Rates		Dollar Change	Percentage Change
		Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue		
1	Monthly Billing:										
2											
3	Residential	19,624	\$303,895	19,624	\$231,299	19,524	\$309,177	19,524	\$234,593	(\$74,584)	-24.12%
4	Commercial	673	10,131	673	7,924	688	10,279	688	7,892	(2,387)	-23.22%
5	Industrial	0	0	0	0	0	0	0	0	0	0.00%
6	Other Public Authority	0	0	0	0	0	0	0	0	0	0.00%
7	Sale for Resale	0	0	0	0	0	0	0	0	0	0.00%
8	Private Fire Service:	0	0	0	0	0	0	0	0	0	0.00%
9	Public Fire Service	0	0	0	0	0	0	0	0	0	0.00%
10	Miscellaneous	0	165	0	165	0	0	0	0	0	0.00%
11	Other Water Revenue	0	0	0	0	0	0	0	0	0	0.00%
12	Total	20,297	\$314,191	20,297	\$239,388	20,213	\$319,456	20,213	\$242,485	(\$76,971)	-24.09%
13											
14	Miscellaneous Revenues:										
15	Other Water Revenue		\$ -		\$0		\$0		\$0	0	0.00%
16	Late Payment Fee		2,469		2,469		2,939		2,939	0	0.00%
17	Rent		0		0		0		0	0	0.00%
18	Rent I/C		0		0		0		0	0	0.00%
19	Collect for Others		0		0		0		0	0	0.00%
20	NSF Check Charge		0		0		0		0	0	0.00%
21	Application/Initiation Fee		1,736		1,736		1,736		1,736	0	0.00%
22	Usage Data		0		0		0		0	0	0.00%
23	Reconnect Fee		224		224		0		0	0	0.00%
24	Miscellaneous Service		0		0		0		0	0	0.00%
25	WW-Miscellaneous Service		0		0		0		0	0	0.00%
26	Total Other Revenue		\$ 4,429		\$4,429		\$4,675		\$4,675	\$0	0.00%
27											
28	Total Revenue		\$ 318,620		\$243,817		\$324,131		\$247,160	(\$76,971)	-23.75%

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
 EASTERN ROCKCASTLE (Residential)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Residential:																		
2	<u>Minimum Charge:</u>																		
3	5/8" Monthly	7,206		28.28	\$203,795	7,206		\$15.00	\$108,095	7,356		\$28.28	\$208,028	7,356		\$15.00	\$110,340	(\$97,688)	-46.96%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	<u>Volumetric Charges:</u>																		
17	First Block		10,752	\$0.0000	\$0		10,752	\$6.3640	\$68,423		10,752	\$0.0000	\$0		10,752	\$6.3640	\$68,423	\$68,423	0.00%
18	Second Block		8,773	11.53	101,149		8,773	6.3640	55,830		8,773	11.5300	101,149		8,773	6.3640	55,830	(45,319)	-44.80%
19	Third Block		0	0.00	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
20	Fourth Block		0	0.00	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
21	Fifth Block		0	0.00	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
22	Sixth Block		0	0.00	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
23	Credits		100		(1,049)		100		(1,049)				0		0		0	0	0.00%
24																			
25	Total		<u>19,624</u>		<u>\$303,895</u>		<u>19,624</u>		<u>\$231,299</u>		<u>19,524</u>		<u>\$309,177</u>		<u>19,524</u>		<u>\$234,593</u>	<u>(\$74,584)</u>	<u>-24.12%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
EASTERN ROCKCASTLE (Commercial)

Witness Responsible: **Melissa Schwarzell**

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Commercial:																		
2	Minimum Charge:																		
3	5/8" Monthly	231		\$28.28	\$6,528	231		\$15.00	\$3,462	264		\$28.28	\$7,466	264		\$15.00	\$3,960	(\$3,506)	-46.96%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	4		178.17	790	4		119.50	530	0		178.17	0	0		119.50	0	0	0.00%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		444	\$0.0000	\$0		444	\$5.7120	\$2,538		444	\$0.0000	\$0		444	\$5.7120	\$2,538	\$2,538	0.00%
18	Second Block		244	11.5300	2,813		244	5.7120	1,394		244	11.5300	2,813		244	5.7120	1,394	(1,419)	-50.44%
19	Third Block		0	11.5300	0		0	5.7120	0		0	11.5300	0		0	5.7120	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
23	Credits		(15)		0		(15)		0				0		0		0	0	0.00%
24																			
25	Total		673		\$10,131		673		\$7,924		688		\$10,279		688		\$7,892	(\$2,387)	-23.22%

Kentucky American Water Company
 Test Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

EASTERN ROCKCASTLE (Industrial)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change	
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue			
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)					Meter Billings
1	Industrial:																			
2	<u>Minimum Charge:</u>																			
3	5/8" Monthly	0		\$0.00	\$0	0		\$15.00	\$0	0		\$0.00	\$0	0		\$15.00	\$0	\$0	0.00%	
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%	
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%	
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%	
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%	
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%	
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%	
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%	
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%	
12	Surcharge																	0	0.00%	
13																				
14																				
15																				
16	<u>Volumetric Charges:</u>																			
17	First Block		0	\$0.0000	\$0		0	\$4.7500	\$0		0	\$0.0000	\$0		0	\$4.7500	\$0	\$0	0.00%	
18	Second Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
19	Third Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
20	Fourth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
21	Fifth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
22	Sixth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%	
23	Credits		0		0		0		0		0		0		0		0	0	0.00%	
24																				
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
EASTERN ROCKCASTLE (Other Public Authority)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue		
1	Other Public Authority:																		
2	<u>Minimum Charge:</u>																		
3	5/8" Monthly	0		\$0.00	\$0	0		\$15.00	\$0	0		\$0.00	\$0	0		\$15.00	\$0	\$0	0.00%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	<u>Volumetric Charges:</u>																		
17	First Block		0	\$4.3466	\$0		0	\$5.1910	\$0		0	\$0.0000	\$0		0	\$5.1910	\$0	\$0	0.00%
18	Second Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
19	Third Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
23	Credits		0		0		0		0		0		0		0		0	0	0.00%
24																			
25	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
EASTERN ROCKCASTLE (Sale for Resale)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales ('000 Gal)	Proposed Rate	Total Revenue		
1	Sale for Resale:																		
2	Minimum Charge:																		
3	5/8" Monthly	0		\$0.00	\$0	0		\$15.00	\$0	0		\$0.00	\$0	0		\$15.00	\$0	\$0	0.00%
4	3/4" Monthly	0		0.00	0	0		22.40	0	0		0.00	0	0		22.40	0	0	0.00%
5	1" Monthly	0		0.00	0	0		37.30	0	0		0.00	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		74.70	0	0		0.00	0	0		74.70	0	0	0.00%
7	2" Monthly	0		0.00	0	0		119.50	0	0		0.00	0	0		119.50	0	0	0.00%
8	3" Monthly	0		0.00	0	0		224.00	0	0		0.00	0	0		224.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		373.40	0	0		0.00	0	0		373.40	0	0	0.00%
10	6" Monthly	0		0.00	0	0		746.70	0	0		0.00	0	0		746.70	0	0	0.00%
11	8" Monthly	0		0.00	0	0		1,194.70	0	0		0.00	0	0		1,194.70	0	0	0.00%
12	Owenton				0				0				0				0	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		0	\$0.0000	\$0		0	\$4.7600	\$0		0	\$0.0000	\$0		0	\$4.7600	\$0	\$0	0.00%
18	Second Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
19	Third Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
23	SFR-Intercompany		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
24	Credits		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
25	Special Contract		0	0.0000	0		0	0.0000	0		0	\$0.0000	0		0	0.0000	\$0	0	0.00%
26	Total		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
EASTERN ROCKCASTLE (Fire)

Witness Responsible: Melissa Schwarzell

Discovery\PSC\Support\PSCDR2_NUM011\KAWC 2018 Rate Case - Revenue - E. Rockcastle DR11.xlsx\Sch M
 Exhibit 37, Schedule M-3

Line #	Connection Size	Base Period at Present Rates			Base Period at Proposed Rates			Test Year at Present Rates			Test Year at Proposed Rates			Dollar Change	Percentage Change
		Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue	Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue		
1	Private Fire Service:														
2	Hydrant	0	\$0.00	\$0	0	\$80.12	\$0	0	\$0.00	\$0	0	\$80.12	\$0	\$0	0.00%
3	2"	0	0.00	0	0	9.16	0	0	0.00	0	0	9.16	0	0	0.00%
4	4"	0	0.00	0	0	36.92	0	0	0.00	0	0	36.92	0	0	0.00%
5	6"	0	0.00	0	0	83.04	0	0	0.00	0	0	83.04	0	0	0.00%
6	8"	0	0.00	0	0	147.62	0	0	0.00	0	0	147.62	0	0	0.00%
7	10"	0	0.00	0	0	230.72	0	0	0.00	0	0	230.72	0	0	0.00%
8	12"	0	0.00	0	0	332.71	0	0	0.00	0	0	332.71	0	0	0.00%
9	14"	0	0.00	0	0	479.07	0	0	0.00	0	0	479.07	0	0	0.00%
10	16"	0	0.00	0	0	590.78	0	0	0.00	0	0	590.78	0	0	0.00%
11															
12															
13	Credits						0						0		
14	Total	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>
15															
16	Volumetric Charges:														
17	First Block	0	\$0.0000	\$0	0	\$0.0000	\$0	0	\$0.0000	\$0	0	\$0.0000	\$0	\$0	0.00%
18															
19															
20	Public Fire Protection:														
21	Public Fire Hydrants	0	\$0.00	\$0	0	\$49.16	\$0	0	\$39.90	\$0	0	\$49.16	\$0	\$0	0.00%
22															
23		<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>
24															
25	Credits	0		0			0			0			0		
26															
27	Total Fire			<u>\$0</u>			<u>\$0</u>			<u>\$0</u>			<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
EASTERN ROCKCASTLE (Miscellaneous)

Witness Responsible: **Melissa Schwarzell**

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period				Base Period				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales 0			Meter Billings	Sales 0			Meter Billings	Sales 0			Meter Billings	Sales 0				
1	Miscellaneous:																		
2	Minimum Charge:																		
3	5/8" Monthly	0		\$0.00	\$0	0		\$0.00	\$0	0		\$0.00	\$0	0		\$0.00	\$0	\$0	0.00%
4	3/4" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
5	1" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
6	1-1/2" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
7	2" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
8	3" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
9	4" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
10	6" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
11	8" Monthly	0		0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		0	\$4.2975	\$0		0	\$0.0000	\$0		0	\$0.0000	\$0		0	\$0.0000	\$0	\$0	0.00%
18	Second Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
19	Third Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
23	Credits		0		165		0		165		0		165		0		165	0	0.00%
24																			
25	Total		<u>0</u>		<u>\$165</u>		<u>0</u>		<u>\$165</u>		<u>0</u>		<u>\$0</u>		<u>0</u>		<u>\$0</u>	<u>\$0</u>	<u>0.00%</u>

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 12.** Refer to the application, Exhibit 37, Schedule N, typical bill comparison under present and proposed rates. Provide a revised Schedule N for all customer classes and service areas that reflect the current rates as prescribed in Kentucky-American's current tariff on file with the Commission.

Response:

Please see the clarifications below, which aim to explain Exhibit 37, Schedule N as filed in the original application. The current tariff on file with the Commission is reflected on all pages of this schedule except for the pages that include the North Middletown customers. Those pages reflect the rates provided in the North Middletown adoption notice filed December 21, 2018.

Exhibit 37, Schedule N Pages	Customer Groups	Uses the current tariff on file with the Commission?
2- 7	All customers (including North Middletown)	Yes, blended from tariff sheets No. 29, 30, 31, and 33, as well as the current rates being used by North Middletown (as provided in the adoption notice)
8-13	All current single tariff customers	Yes, from Tariff Sheets No. 29, 31, and 33
14-15	Eastern Rockcastle	Yes, from Tariff Sheet No. 30
16-18	North Middletown	Uses the current rates being used by North Middletown (as provided in the adoption notice) except for public fire, for which Tariff Sheet No. 33 was used.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 13.** Refer to the application, Exhibit 37, Schedule M-2.
- a. Explain why the present rates for both the test period and base period are not the same for each customer class, as well as why these present rates are not reflective of what is prescribed in Kentucky-American's current tariffs on file with the Commission.
 - b. File a revised Schedule M-2 for all customer classes and service areas using the current rates from Kentucky-American's tariff for both the test period and base period present rates.

Response:

- a. There are a few reasons the rates are not the same between the base and test period for all classes and customer groups shown on Exhibit 37, Schedule M-2. Please see clarifications below:
 - All Customers Except Eastern Rockcastle and North Middletown (the single tariff group, on pp 15 – 22)
 - Timing: For these customers, the base year is a blend of rates, while the test year is all at the rates authorized in Case No. 2018-00042. The base year is blended because it contains six months of actual data ending August 2018 (which was tarified at the rates authorized in Case No. 2015-00418) and six months of forecasted data ending February 2019 (which was forecasted at the tarified rates made effective September 1, 2018 in Case No. 2018-00042).
 - All Customers (pp 7-14)
 - This schedule, which combines all of the rates for the Eastern Rockcastle, North Middletown, and current single tariff group, varies between the base and forecasted period for two reasons
 - Timing for the single tariff group, as described above
 - Acquisition: the test year prices include the addition of the North Middletown group, which effects the overall blended rate.
 - Eastern Rockcastle (pp. 23-30): rates do not change between the base and test year
 - North Middletown (pp. 31-38): rates are shown only for the test year, due to acquisition at end of base year

The rates used on these schedules are the tarified rates for the various time periods of the base and forecasted test period for the single tariff group and the

Eastern Rockcastle group. The rates for the North Middletown group are those provided with the adoption notice filed December 21, 2018.

- b. As noted in response to part a of this question, the M-2 schedules for North Middletown and Eastern Rockcastle, as originally filed, used only the current rates for those customers. The Company presumes with this clarification that no revision is required. For the other two groups “All Customers Except Eastern Rockcastle and North Middletown” and “All Customers”), revised schedules are attached. The M-2 schedule for “All Customers Except Eastern Rockcastle and North Middletown” (the single tariff group) now shows the base period only at the tariffed rates made effective September 1, 2018 in Case No. 2018-00042 and eliminates the amount on line 11 which reflected base period deferrals and amortizations associated with the Tax Cuts and Jobs Act. The M-2 schedule for “All Customers” now combines the original Eastern Rockcastle and North Middletown schedules with this revised “All Customers Except Eastern Rockcastle and North Middletown” to arrive at the results for “All Customers”.

Kentucky American Water Company
 Forecast Year Operating Revenues at Present Rates vs Proposed Rates
 Case No. 2018-00358
 Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN
 REVISED BASE PERIOD TO SHOW GROUP AT 9/1/18 RATES
 AND WITH NO TCJA DEFERRALS OR AMORTIZATIONS ON LINE 11

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-2

Discovery\PSC\Support\PSCDR2_NUM013\KAWC 2018 Rate Case - Revenue - KY American.xlsx\Sch M

Line #	Class/ Description	Base Period at Present Rates		Base Period at Proposed Rates		Test Year at Present Rates		Test Year at Proposed Rates		Dollar Change	Percentage Change
		Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue		
1	Monthly Billing:										
2											
3	Residential	5,607,871	\$46,709,235	5,607,871	\$57,698,575	5,594,439	\$46,991,859	5,594,439	\$58,042,434	\$11,050,575	23.52%
4	Commercial	3,747,824	21,362,594	3,747,824	26,703,421	3,796,367	21,631,116	3,796,367	27,036,880	5,405,764	24.99%
5	Industrial	651,882	2,646,940	651,882	3,258,199	617,725	2,515,892	617,725	3,095,858	579,966	23.05%
6	Other Public Authority	1,119,903	5,456,726	1,119,903	6,821,432	1,165,872	5,703,375	1,165,872	7,123,901	1,420,526	24.91%
7	Sale for Resale	448,274	1,786,325	448,274	2,181,405	389,754	1,541,317	389,754	1,897,359	356,042	23.10%
8	Private Fire Service:	3,138	2,652,408	3,138	2,981,578	0	2,664,721	0	3,011,136	346,415	13.00%
9	Public Fire Service	0	3,575,546	0	4,409,187	0	3,591,958	0	4,425,580	833,622	23.21%
10	Miscellaneous	5,887	72,937	5,887	72,937	3,153	60,281	3,153	60,281	0	0.00%
11	Other Water Revenue	0	0	0	0	0	0	0	0	0	0.00%
12	Total	11,584,778	\$84,262,711	11,584,778	\$104,126,733	11,567,310	84,700,519	11,567,310	\$104,693,429	\$19,992,910	23.60%
13											
14	Miscellaneous Revenues:										
15	Other Water Revenue		\$ -		\$0		\$0		\$0	0	0.00%
16	Late Payment Fee		795,958		795,958		781,545		781,545	0	0.00%
17	Rent		96,878		96,878		96,878		96,878	0	0.00%
18	Rent I/C		154,930		154,930		154,930		154,930	0	0.00%
19	Collect for Others		0		0		0		0	0	0.00%
20	NSF Check Charge		30,804		30,804		30,840		30,840	0	0.00%
21	Application/Initiation Fee		763,945		763,945		763,945		763,945	0	0.00%
22	Usage Data		47,194		47,194		51,538		51,538	0	0.00%
23	Reconnect Fee		582,885		582,885		598,864		598,864	0	0.00%
24	Miscellaneous Service		0		0		0		0	0	0.00%
25	WW-Miscellaneous Service		0		0		0		0	0	0.00%
26	Total Other Revenue		\$ 2,472,594		\$2,472,594		\$2,478,539		\$2,478,539	\$0	0.00%
27											
28	Total Revenue		\$ 86,735,305		\$106,599,327		\$87,179,058		\$107,171,968	\$19,992,910	22.93%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Residential)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue		
1	Residential:																		
2	Minimum Charge:																		
3	5/8" Monthly	1,404,177		\$12.49	\$17,538,171	1,404,177		\$15.00	\$21,062,655	1,419,565		\$12.49	\$17,730,367	1,419,565		\$15.00	\$21,293,475	\$3,563,108	20.10%
4	3/4" Monthly	4		18.74	82	4		22.40	99	0		18.74	0	0		22.40	0	0	0.00%
5	1" Monthly	23,800		31.23	743,259	23,800		37.30	887,721	24,807		31.23	774,723	24,807		37.30	925,301	150,578	19.44%
6	1-1/2" Monthly	156		62.45	9,747	156		74.70	11,659	156		62.45	9,742	156		74.70	11,653	1,911	19.62%
7	2" Monthly	1,415		99.92	141,366	1,415		119.50	169,068	1,404		99.92	140,288	1,404		119.50	167,778	27,490	19.60%
8	3" Monthly	0		187.35	0	0		224.00	0	0		187.35	0	0		224.00	0	0	0.00%
9	4" Monthly	0		312.25	0	0		373.40	0	0		312.25	0	0		373.40	0	0	0.00%
10	6" Monthly	36		624.50	22,482	36		746.70	26,881	36		624.50	22,482	36		746.70	26,881	4,399	19.57%
11	8" Monthly	12		999.20	11,990	12		1,194.70	14,336	12		999.20	11,990	12		1,194.70	14,336	2,346	19.57%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		5,581,623	\$5.0590	\$28,237,430		5,581,623	\$6.3640	\$35,521,448		5,594,439	\$5.0590	\$28,302,267		5,594,439	\$6.3640	\$35,603,010	\$7,300,743	25.80%
18	Second Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
19	Third Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	6.3640	0		0	0.0000	0		0	6.3640	0	0	0.00%
23	Credits		26,248		4,708		26,248		4,708				0		0		0	0	0.00%
24																			
25	Total		<u>5,607,871</u>		<u>\$46,709,235</u>		<u>5,607,871</u>		<u>\$57,698,575</u>		<u>5,594,439</u>		<u>\$46,991,859</u>		<u>5,594,439</u>		<u>\$58,042,434</u>	<u>\$11,050,575</u>	<u>23.52%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

Witness Responsible: Melissa Schwarzell

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Commercial)

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Commercial:																		
2	Minimum Charge:																		
3	5/8" Monthly	55,178		\$13.63	\$752,071	55,178		\$15.00	\$827,664	54,975		\$13.63	\$749,309	54,975		\$15.00	\$824,625	\$75,316	10.05%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	29,049		34.07	989,698	29,049		37.30	1,083,526	29,094		34.07	991,233	29,094		37.30	1,085,206	93,973	9.48%
6	1-1/2" Monthly	2,128		68.17	145,043	2,128		74.70	158,937	2,112		68.17	143,975	2,112		74.70	157,766	13,791	9.58%
7	2" Monthly	23,916		109.04	2,607,762	23,916		119.50	2,857,920	23,968		109.04	2,613,471	23,968		119.50	2,864,176	250,705	9.59%
8	3" Monthly	12		204.47	2,454	12		224.00	2,688	12		204.47	2,454	12		224.00	2,688	234	9.54%
9	4" Monthly	366		340.77	124,583	366		373.40	136,512	360		340.77	122,677	360		373.40	134,424	11,747	9.58%
10	6" Monthly	171		681.50	116,796	171		746.70	127,970	168		681.50	114,492	168		746.70	125,446	10,954	9.57%
11	8" Monthly	132		1,090.40	143,631	132		1,194.70	157,370	132		1,090.40	143,933	132		1,194.70	157,700	13,767	9.56%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		3,746,368	\$4.4120	\$16,528,974		3,746,368	\$5.7120	\$21,399,252		3,796,367	\$4.4120	\$16,749,572		3,796,367	\$5.7120	\$21,684,849	\$4,935,277	29.47%
18	Second Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
19	Third Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.7120	0		0	0.0000	0		0	5.7120	0	0	0.00%
23	Credits		1,456		(48,418)		1,456		(48,418)				0				0	0	0.00%
24																			
25	Total		3,747,824		\$21,362,594		3,747,824		\$26,703,421		3,796,367		\$21,631,116		3,796,367		\$27,036,880	\$5,405,764	24.99%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

Witness Responsible: Melissa Schwarzell

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Industrial)

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter	Sales ('000 Gal)	Proposed Rate	Total Revenue	Customer Meter	Sales ('000 Gal)	Current Rate	Total Revenue	Customer Meter	Sales ('000 Gal)	Proposed Rate	Total Revenue		
		Billings				Billings				Billings				Billings					
1	Industrial:																		
2	Minimum Charge:																		
3	5/8" Monthly	77		\$13.63	\$1,050	77		\$15.00	\$1,155	72		\$13.63	\$981	72		\$15.00	\$1,080	\$99	10.09%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	48		34.07	1,635	48		37.30	1,790	48		34.07	1,635	48		37.30	1,790	155	9.48%
6	1-1/2" Monthly	24		68.17	1,636	24		74.70	1,793	24		68.17	1,636	24		74.70	1,793	157	9.60%
7	2" Monthly	264		109.04	28,767	264		119.50	31,527	264		109.04	28,787	264		119.50	31,548	2,761	9.59%
8	3" Monthly	0		204.47	0	0		224.00	0	0		204.47	0	0		224.00	0	0	0.00%
9	4" Monthly	120		340.77	40,892	120		373.40	44,808	120		340.77	40,892	120		373.40	44,808	3,916	9.58%
10	6" Monthly	108		681.50	73,602	108		746.70	80,644	108		681.50	73,602	108		746.70	80,644	7,042	9.57%
11	8" Monthly	0		1,090.40	0	0		1,194.70	0	0		1,090.40	0	0		1,194.70	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		651,882	\$3.8340	\$2,499,316		651,882	\$4.7500	\$3,096,440		617,725	\$3.8340	\$2,368,359		617,725	\$4.7500	\$2,934,195	\$565,836	23.89%
18	Second Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
19	Third Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7500	0		0	0.0000	0		0	4.7500	0	0	0.00%
23	Credits		0		42		0		42		0		42		0		42	0	0.00%
24																			
25	Total		<u>651,882</u>		<u>\$2,646,940</u>		<u>651,882</u>		<u>\$3,258,199</u>		<u>617,725</u>		<u>\$2,515,892</u>		<u>617,725</u>		<u>\$3,095,858</u>	<u>\$579,966</u>	<u>23.05%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020

ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Other Public Authority)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Current Rate	Total Revenue	Customer Meter Billings	Sales (‘000 Gal)	Proposed Rate	Total Revenue		
1	Other Public Authority:																		
2	Minimum Charge:																		
3	5/8" Monthly	1,582		\$13.63	\$21,561	1,582		\$15.00	\$23,728	1,500		\$13.63	\$20,445	1,500		\$15.00	\$22,500	\$2,055	10.05%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	2,128		34.07	72,515	2,128		37.30	79,390	2,184		34.07	74,409	2,184		37.30	81,463	7,054	9.48%
6	1-1/2" Monthly	355		68.17	24,203	355		74.70	26,521	384		68.17	26,177	384		74.70	28,685	2,508	9.58%
7	2" Monthly	4,705		109.04	513,086	4,705		119.50	562,305	4,860		109.04	529,934	4,860		119.50	580,770	50,836	9.59%
8	3" Monthly	12		204.47	2,454	12		224.00	2,688	12		204.47	2,454	12		224.00	2,688	234	9.54%
9	4" Monthly	526		340.77	179,184	526		373.40	196,342	540		340.77	184,016	540		373.40	201,636	17,620	9.58%
10	6" Monthly	146		681.50	99,499	146		746.70	109,018	168		681.50	114,492	168		746.70	125,446	10,954	9.57%
11	8" Monthly	24		1,090.40	26,170	24		1,194.70	28,673	24		1,090.40	26,170	24		1,194.70	28,673	2,503	9.56%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		1,120,135	\$4.0530	\$4,539,907		1,120,135	\$5.1910	\$5,814,620		1,165,872	\$4.0530	\$4,725,278		1,165,872	\$5.1910	\$6,052,040	\$1,326,762	28.08%
18	Second Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
19	Third Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	5.1910	0		0	0.0000	0		0	5.1910	0	0	0.00%
23	Credits		(232)		(21,853)		(232)		(21,853)				0				0	0	0.00%
24																			
25	Total		1,119,903		\$5,456,726		1,119,903		\$6,821,432		1,165,872		\$5,703,375		1,165,872		\$7,123,901	\$1,420,526	24.91%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Sale for Resale)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period at Present Rates				Base Period at Proposed Rates				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue	Customer		Current Rate	Total Revenue	Customer		Proposed Rate	Total Revenue		
		Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)			Meter Billings	Sales ('000 Gal)				
1	Sale for Resale:																		
2	Minimum Charge:																		
3	5/8" Monthly	0		\$13.63	\$0	0		\$15.00	\$0	0		\$13.63	\$0	0		\$15.00	\$0	\$0	0.00%
4	3/4" Monthly	0		20.46	0	0		22.40	0	0		20.46	0	0		22.40	0	0	0.00%
5	1" Monthly	0		34.07	0	0		37.30	0	0		34.07	0	0		37.30	0	0	0.00%
6	1-1/2" Monthly	54		68.17	3,681	54		74.70	4,034	60		68.17	4,090	60		74.70	4,482	392	9.58%
7	2" Monthly	58		109.04	6,285	58		119.50	6,887	48		109.04	5,234	48		119.50	5,736	502	9.59%
8	3" Monthly	0		204.47	0	0		224.00	0	0		204.47	0	0		224.00	0	0	0.00%
9	4" Monthly	54		340.77	18,413	54		373.40	20,176	60		340.77	20,446	60		373.40	22,404	1,958	9.58%
10	6" Monthly	49		681.50	33,515	49		746.70	36,722	48		681.50	32,712	48		746.70	35,842	3,130	9.57%
11	8" Monthly	0		1,090.40	0	0		1,194.70	0	0		1,090.40	0	0		1,194.70	0	0	0.00%
12	Owenton				0				0								0	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		437,975	\$3.8370	\$1,680,509		437,975	\$4.7600	\$2,084,760		379,262	\$3.8370	\$1,455,229		379,262	\$4.7600	\$1,805,289	\$350,060	24.06%
18	Second Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
19	Third Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	4.7600	0		0	0.0000	0		0	4.7600	0	0	0.00%
23	SFR-Intercompany		0	0.0000	15,096		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
24	Credits		0	0.0000	5,654		0	0.0000	5,654		0	0.0000	0		0	0.0000	0	0	0.00%
25	Special Contract		10,299	2.2500	23,172		10,299	2.2500	23,172		10,491	\$2.2500	\$23,606		10,491	2.2500	\$23,606		
26	Total		448,274		\$1,786,325		448,274		\$2,181,405		389,754		\$1,541,317		389,754		\$1,897,359	\$356,042	23.10%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Fire)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Connection Size	Base Period at Present Rates			Base Period at Proposed Rates			Test Year at Present Rates			Test Year at Proposed Rates			Dollar Change	Percentage Change
		Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue	Number of Connections	Current Rate	Total Revenue	Number of Connections	Proposed Rate	Total Revenue		
1	Private Fire Service:														
2	Hydrant	14,851	\$70.90	\$1,052,929	14,851	\$80.12	\$1,189,854	14,880	\$70.90	\$1,054,992	14,880	\$80.12	\$1,192,186	\$137,194	13.00%
3	2"	879	8.11	7,129	879	9.16	8,052	900	8.11	7,299	900	9.16	8,244	945	12.95%
4	4"	5,508	32.67	179,949	5,508	36.92	203,359	5,748	32.67	187,787	5,748	36.92	212,216	24,429	13.01%
5	6"	11,473	73.49	843,115	11,473	83.04	952,677	11,616	73.49	853,660	11,616	83.04	964,593	110,933	12.99%
6	8"	3,804	130.64	496,934	3,804	147.62	561,523	3,840	130.64	501,658	3,840	147.62	566,861	65,203	13.00%
7	10"	152	204.18	31,035	152	230.72	35,069	156	204.18	31,852	156	230.72	35,992	4,140	13.00%
8	12"	72	294.43	21,199	72	332.71	23,955	72	294.43	21,199	72	332.71	23,955	2,756	13.00%
9	14"	0	423.96	0	0	479.07	0	0	423.96	0	0	479.07	0	0.00%	
10	16"	12	522.81	6,274	12	590.78	7,089	12	522.81	6,274	12	590.78	7,089	815	12.99%
11															
12															
13	Credits						0						0		
14	Total	<u>36,750</u>		<u>\$2,638,564</u>	<u>36,750</u>		<u>\$2,981,578</u>	<u>37,224</u>		<u>\$2,664,721</u>	<u>37,224</u>		<u>\$3,011,136</u>	<u>\$346,415</u>	<u>13.00%</u>
15															
16	Volumetric Charges:														
17	First Block	3,138	\$4.4120	\$13,844	3,138	\$0.0000	\$0	0	\$4.4120	\$0	0	\$0.0000	\$0	\$0	0.00%
18															
19															
20	Public Fire Protection:														
21	Public Fire Hydrants	90,026	\$39.90	\$3,592,037	90,026	\$49.16	\$4,425,678	90,024	\$39.90	\$3,591,958	90,024	\$49.16	\$4,425,580	\$833,622	23.21%
22															
23		<u>90,026</u>		<u>\$3,592,037</u>	<u>90,026</u>		<u>\$4,425,678</u>	<u>90,024</u>		<u>\$3,591,958</u>	<u>90,024</u>		<u>\$4,425,580</u>	<u>\$833,622</u>	<u>23.21%</u>
24															
25	Credits	3,098		(16,491)			(16,491)			0			0		
26															
27	Total Fire			<u>\$6,227,954</u>			<u>\$7,390,765</u>			<u>\$6,256,679</u>			<u>\$7,436,716</u>	<u>\$1,180,037</u>	<u>18.86%</u>

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS EXCEPT EASTERN ROCKCASTLE AND NORTH MIDDLETOWN (Miscellaneous)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/ Description	Base Period				Base Period				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer		Sales 0	Current Rate	Total Revenue	Customer		Sales 0	Current Rate	Total Revenue	Customer		Sales 0	Proposed Rate	Total Revenue			
		Meter Billings					Meter Billings					Meter Billings					Meter Billings		
1	Miscellaneous:																		
2	Minimum Charge:																		
3	5/8" Monthly	28		\$13.63	\$383	28		\$13.63	\$383	48		\$13.63	\$654	48		\$13.63	\$654	\$0	0.00%
4	3/4" Monthly	0		\$20.46	0	0		20.46	0	0		20.46	0	0		20.46	0	0	0.00%
5	1" Monthly	262		\$34.07	8,930	262		34.07	8,930	288		34.07	9,812	288		34.07	9,812	0	0.00%
6	1-1/2" Monthly	0		\$68.17	0	0		68.17	0	0		68.17	0	0		68.17	0	0	0.00%
7	2" Monthly	0		\$109.04	0	0		109.04	0	0		109.04	0	0		109.04	0	0	0.00%
8	3" Monthly	177		\$204.47	36,257	177		204.47	36,257	192		204.47	39,258	192		204.47	39,258	0	0.00%
9	4" Monthly	0		\$340.77	0	0		340.77	0	0		340.77	0	0		340.77	0	0	0.00%
10	6" Monthly	0		\$681.50	0	0		681.50	0	0		681.50	0	0		681.50	0	0	0.00%
11	8" Monthly	0		\$1,090.40	0	0		1,090.40	0	0		1,090.40	0	0		1,090.40	0	0	0.00%
12	Surcharge																	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		8,171	\$3.3480	\$27,357		8,171	\$3.3480	\$27,357		3,153	\$3.3480	\$10,557		3,153	\$3.3480	\$10,557	\$0	0.00%
18	Second Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
19	Third Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
23	Credits		(2,284)		10		(2,284)		10		0		0		0		0	0	0.00%
24																			
25	Total		<u>5,887</u>		<u>\$72,937</u>		<u>5,887</u>		<u>\$72,937</u>		<u>3,153</u>		<u>\$60,281</u>		<u>3,153</u>		<u>\$60,281</u>	<u>\$0</u>	<u>0.00%</u>

Kentucky American Water Company
Forecast Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358
Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS - REVISED BASE PERIOD TO SHOW SINGLE TARIFF GROUP AT 9/1/18 RATES
AND NO TCJA DEFERRALS OR AMORTIZATIONS ON LINE 11

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-2

Line #	Class/ Description	Base Period at Present Rates		Base Period at Proposed Rates		Test Year at Present Rates		Test Year at Proposed Rates		Dollar Change	Percentage Change
		Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue	Sales ('000 Gal)	Total Revenue		
1	Monthly Billing:										
2											
3	Residential	5,627,495	\$47,013,130	5,627,495	\$57,929,874	5,631,655	\$47,551,194	5,631,655	\$58,459,636	\$10,908,442	22.94%
4	Commercial	3,748,497	21,372,725	3,748,497	26,711,346	3,798,369	21,663,948	3,798,369	27,068,049	5,404,101	24.95%
5	Industrial	651,882	2,646,940	651,882	3,258,199	617,725	2,515,892	617,725	3,095,858	579,966	23.05%
6	Other Public Authority	1,119,903	5,456,726	1,119,903	6,821,432	1,165,872	5,703,375	1,165,872	7,123,901	1,420,526	24.91%
7	Sale for Resale	448,274	1,786,325	448,274	2,181,405	426,827	1,711,089	426,827	2,078,310	367,221	21.46%
8	Private Fire Service:	3,138	2,652,408	3,138	2,981,578	0	2,664,721	0	3,011,136	346,415	13.00%
9	Public Fire Service	0	3,575,546	0	4,409,187	0	3,611,110	0	4,449,177	838,067	23.21%
10	Miscellaneous	5,887	73,102	5,887	73,101	3,153	60,281	3,153	60,281	0	0.00%
11	Other Water Revenue	0	0	0	0	0	0	0	0	0	0.00%
12	Total	11,605,075	\$84,576,902	11,605,075	\$104,366,122	11,643,601	\$85,481,610	11,643,601	\$105,346,348	\$19,864,738	23.24%
13											
14	Miscellaneous Revenues:										
15	Other Water Revenue		\$ -		\$0		\$0		\$0	0	0.00%
16	Late Payment Fee		798,427		798,427		784,484		784,484	0	0.00%
17	Rent		96,878		96,878		96,878		96,878	0	0.00%
18	Rent I/C		154,930		154,930		154,930		154,930	0	0.00%
19	Collect for Others		0		0		0		0	0	0.00%
20	NSF Check Charge		30,804		30,804		30,840		30,840	0	0.00%
21	Application/Initiation Fee		765,681		765,681		765,681		765,681	0	0.00%
22	Usage Data		47,194		47,194		51,538		51,538	0	0.00%
23	Reconnect Fee		583,109		583,109		598,864		598,864	0	0.00%
24	Miscellaneous Service		0		0		0		0	0	0.00%
25	WW-Miscellaneous Service		0		0		0		0	0	0.00%
26	Total Other Revenue		\$ 2,477,023		\$2,477,023		\$2,483,215		\$2,483,215	\$0	0.00%
27											
28	Total Revenue		\$ 87,053,925		\$106,843,144		\$87,964,825		\$107,829,563	\$19,864,738	22.58%

Kentucky American Water Company
Test Year Operating Revenues at Present Rates vs Proposed Rates
Case No. 2018-00358

Base Year for the 12 Months Ended February 28, 2019 and Forecast Year for the 12 Months Ended June 30, 2020
ALL CUSTOMERS (Miscellaneous)

Witness Responsible: Melissa Schwarzell

Exhibit 37, Schedule M-3

Line #	Class/Description	Base Period				Base Period				Test Year at Present Rates				Test Year at Proposed Rates				Dollar Change	Percentage Change
		Customer Meter Billings	Sales 0	Current Rate	Total Revenue	Customer Meter Billings	Sales 0	Current Rate	Total Revenue	Customer Meter Billings	Sales 0	Current Rate	Total Revenue	Customer Meter Billings	Sales 0	Proposed Rate	Total Revenue		
1	Miscellaneous:																		
2	Minimum Charge:																		
3	5/8" Monthly	28		\$13.63	\$383	28		\$13.63	\$383	48		\$13.63	\$654	48		\$13.63	\$654	\$0	0.00%
4	3/4" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
5	1" Monthly	262		\$34.07	8,930	262		34.07	8,930	288		34.07	9,812	288		34.07	9,812	0	0.00%
6	1-1/2" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
7	2" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
8	3" Monthly	177		\$204.47	36,257	177		204.47	36,257	192		204.47	39,258	192		204.47	39,258	0	0.00%
9	4" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
10	6" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
11	8" Monthly	0		\$0.00	0	0		0.00	0	0		0.00	0	0		0.00	0	0	0.00%
12	Surcharge				0				0				0				0	0	0.00%
13																			
14																			
15																			
16	Volumetric Charges:																		
17	First Block		8,171	\$3.3480	\$27,357		8,171	\$3.3479	\$27,356		3,153	\$3.3479	\$10,557		3,153	\$3.3479	\$10,557	\$0	0.00%
18	Second Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
19	Third Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
20	Fourth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
21	Fifth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
22	Sixth Block		0	0.0000	0		0	0.0000	0		0	0.0000	0		0	0.0000	0	0	0.00%
23	Credits		(2,284)		175		(2,284)		175		0		0		0		0	0	0.00%
24																			
25	Total		<u>5,887</u>		<u>\$73,102</u>		<u>5,887</u>		<u>\$73,101</u>		<u>3,153</u>		<u>\$60,281</u>		<u>3,153</u>		<u>\$60,281</u>	<u>\$0</u>	<u>0.00%</u>

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 14.** Refer to the O'Neill Testimony, page 5, line 11. For the recurring projects, Kentucky-American states that for the forecast period, estimates are made based on current year pricing. Confirm that there is no inflationary escalation included in this estimation. If this cannot be confirmed, provide the inflationary escalation factor percentage.

Response:

There is no inflationary escalation included in the estimates provided for the forecast period.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

15. Refer to the O'Neill Testimony, page 9. Provide the variance between the budget and actual Net Capital Investment for 2018. If this is not available, provide as soon as it is available.

Response:

KAWC Net Capital Investment Budget vs Actual Capex for 2012 through 2018				
(Does not include Centrally Sponsored Projects)				
Year	Budget	Actual	Variance	
2012	\$19,574,649	\$17,982,728	(\$1,591,921)	-8.10%
2013	\$23,746,110	\$25,963,291	\$2,217,181	9.30%
2014	\$18,882,745	\$18,585,688	(\$297,057)	-1.60%
2015*	\$30,354,368	\$30,751,906	\$397,538	1.31%
2016**	\$22,987,514	\$23,110,940	\$123,426	0.54%
2017	\$23,619,450	\$24,757,070	\$1,137,620	4.82%
2018	\$22,586,099	\$26,053,168	\$3,467,069	15.35%
Cumulative	\$161,750,935	\$167,204,791	\$5,453,856	3.37%

* An additional \$5,066,000 was authorized and added to the capital budget

** An additional \$3,500,000 was authorized and added to the capital budget

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Brent E. O'Neill

- 16.** Refer to the O'Neill Testimony, page 47. Provide all workpapers and calculations and state all assumptions that show how the proposed tap fees were calculated.

Response:

Please see attached.

Personal or sensitive information was discovered on this page. At the filers request this page has been removed. A redacted copy of this page will be provided to replace the original.

Idm 3/4/2019

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 17.** Refer to the O'Neill Testimony, page 47, lines 14–23, which states that the proposed tap fees were determined using a three-year average and that in previous cases the utility used a five-year average. Provide the proposed tap fees calculated on a five-year average. Provide all workpapers and calculations and state all assumptions relied upon to determine the amount of the tap fees.

Response:

Based on a five-year average, absent consideration of federal tax law changes, the proposed tap fees would be:

¾" x 5/8" meter	\$1,220 (decreased from current fee \$1,280)
1" meter	\$2,030 (decreased from current fee \$2,201)
2" meter	\$4,304 (decreased from current fee \$4,238)

The methodology used is the same as was used in the determination of the three-year average that was proposed. The costs reflect the installation cost of the contractor that is used to install the services, KAWC oversight, and material pricing. Please refer to the attachment for the calculations as provided in Commission staff second request number 16.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 18.** Refer to the application, Exhibit 2, page 34 of 63. Given that the Commission ruled in Administrative Case No. 313 that Taxable Class A and B water utilities should not gross-up Contributions in Aid of Construction and customer advances, explain why the Commission should approve the following proposed language: “Rates may be grossed up for state and federal income taxes.”

Response:

Subsequent to the ruling in Administrative Case No. 313, enactment of the Small Business Jobs Protection Act of 1996 exempted contributions in aid of construction and customer advances received by water and wastewater utilities from federal taxation, thus eliminating the need to gross up tapping fees for federal income taxes. This exemption was eliminated by passage of the Tax Cuts and Jobs Act (TCJA) on December 22, 2017. The proposed language allows the Company to recover the tax expense associated with tapping fees from the cost causers. If the gross-up is not permitted, the Company should be permitted to recover this tax expense through base rates.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

- 19.** Refer to the Direct Testimony of Kevin Rogers (Rogers Testimony), page 30, which states that the chemical adjustment is \$750,000. Also, refer to Kentucky-American's response to Staff's First Request, Item 1, KAWC_2018_Rate_Case_-_Chemicals_Exhibit.xlsx, Exhibit Tab, Row 9, Column E, which states that the chemicals adjustment is \$985,429. Reconcile this difference.

Response:

The chemical adjustment is \$985,429. The intent of Kevin Rogers' testimony is to point out the chemical production process change cost over \$750,000 of the total \$985,429 adjustment. However, the expected chemical production process change for the fully forecasted test year is \$525,034, the remainder of the \$925,429 adjustment relates to the 2019 price changes, three-year average usages and system delivery changes for the other chemicals.

The details of \$2,887,866 are found in KAWC 2018 Rate Case - Chemicals Exhibit Support 2019.xlsx and KAWC 2018 Rate Case - Chemicals Exhibit Support 2020.xlsx.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: James S. Pellock

20. Refer to the application, the Direct Testimony of James S. Pellock (Pellock Testimony), page 11, line 12. Provide the four projects and their individual amortization amounts.

Response:

	Cost	Amortization Period		Monthly	Base Period	Forecasted
		From	To	Amortization	Amount	Amount
Tates Creek Tank Repair	\$68,802	Feb-05	Jan-20	\$382.23	\$4,587	\$2,676
Sadieville Tank Repair	26,720	Feb-05	Jan-20	148.44	1,781	1,039
Cox Street Tank Repair	34,194	Feb-05	Jan-20	189.97	2,280	1,330
Long Ridge Tank Painting	145,756	Feb-05	Jan-20	809.76	9,717	5,668
	\$275,472				\$18,365	\$10,713

Forecasted amounts above reflect the final seven months of amortization for each project.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kevin N. Rogers, James Pellock

- 21.** Refer to the Rogers Testimony, page 13, lines 21–22, which states that Kentucky-American seeks to enhance its maintenance activities. Provide a list and description of each maintenance activity Kentucky-American wishes to enhance. With each, provide support for the need for the enhanced maintenance activity and the associated increase in expenditures.

Response:

The Company is adding resources in an effort to establish and sustain a more cost-effective level of service to best serve the long-term interest of our customers. Service needs and related resource requirements are consistent with meeting regulatory requirements, tariff requirements, industry standards, service requests, customer needs, and providing support to the business operations in the most cost-effective way.

Two additional positions in field services are being recruited to increase our leak detection and investigation capabilities to help reduce our unaccounted for water loss. We currently have one temporary employee hired and are seeking a second temporary employee while we concurrently recruit for the two permanent employees. KAW does not track the cost of each specific maintenance activity, but the expected labor expense related to these activities is anticipated to be \$83,196.

A Production Maintenance Tech Trainee position is being recruited to follow a defined entry level training program in maintenance of water treatment production facilities and equipment to become a proficient Technician. This role will observe and assist in performing both corrective and preventative maintenance at all production facilities, collect, compile and record equipment data. Additionally, the resource will help us main the production facilities being constructed, recently completed or acquired (Richmond Road and Kentucky River Station 1 chemical buildings, North Middletown tanks). KAW does not track the cost of each specific maintenance activity, but the expected labor expense related to these activities is anticipated to be \$63,199.

Two additional positions in field services have been hired allowing us to permanently add resources to address the 16.7% increase in line locate tickets related to construction work being done by others in our service territory. This volume of work is expected to continue for the foreseeable future. KAW does not track the cost of each specific maintenance activity, but the expected labor expense related to these activities is anticipated to be \$85,128

Three additional positions in field service have been hired to address meter changes and meter repair. These positions are assigned to follow up on work orders generated when a meter reading is not transmitted during our meter reading process, and complete length of service meter changes. KAW does not track the cost of each specific maintenance activity, but the expected labor cost related to these activities is anticipated to be \$230,617.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

- 22.** Refer to the Rogers Testimony, pages 28, lines 8–22 and page 29, lines 1–5, which state that there are four purchased power expense impact adjustments but only list three. Provide the fourth purchased power expense impact.

Response:

Although the Rogers testimony could be clearer on this point, it does identify all four adjustments. The first adjustment combines two items: the new I-75 booster station *and* any system delivery changes.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

- 23.** Refer to the Rogers Testimony, page 29, lines 15–17. Provide support for the 2019 price changes for chemical costs.

Response:

Please refer to KAWC Rate Case – Chemicals Exhibit Support 2020.xlsx and Chemicals Exhibit Support 2019.xlsx files, tab “2019 Chemical Pricing” for the actual 2019 chemical pricing.

Please refer to Attachment 1. Portions of the attachment are confidential and are being provided pursuant to a petition for confidential protection. The attachment delineates actual chemical pricing comparison between 2018 and 2019. Below are some reasons for chemical pricing changes.

- National trucker shortage and freight increases
- Robust economy both domestic and international have impacts on supply/demand
- Some consolidation in the industry, suppliers dropping out
- Geopolitical realities and trade wars, tariffs on many elements indigenous to chemicals
- Stiffer rules, taxes, costs associated with transporting and controlling hazardous chemicals
- There are more stringent environmental controls on the effluent charges emitted when certain chemicals are processed

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 24.** Refer to the Schwarzell Testimony, page 14, lines 12–13. Confirm that the pro forma service cost does not include an escalation rate.

Response:

The pro forma service cost of \$399,519 does not include an escalation rate.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Gregory P. Roach

- 25.** Refer to the Direct Testimony of Gregory P. Roach (Roach Testimony), page 5, line 10. Explain why the cooling degree days are maximized at 90 degrees.

Response:

When evaluating numerous climatic data series as potential independent variables in our weather normalization trend models, KAWC often create series that are subsets of other series such as Cooling Degree Days over 90 degrees in order to identify climatic variables that have the greatest explanatory capability of the variance in the dependent variable, average usage per customer. Cooling Degree Days over 90 degrees was one of those subset variables we employed in order to maximize the statistical significance and capability of the model.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Gregory P. Roach

- 26.** Refer to the Roach Testimony, page 12, Table GPR-3.
- a. Provide a detailed explanation for the 0.46 percent increase in the average residential use.
 - b. Provide a detailed explanation for the 1.45 percent decrease in the average commercial use.

Response:

- a. The difference in the results from the modeling employed in 2015 rate case to the 2018 rate case lie mainly in 1) different independent variables used in the model and 2) changing from a cross sectional to time series modeling approach in the 2018 Rate Case.
- b. In order to provide clarity, Mr. Roach has updated Table GPR-3 to correct for a sign issue related to the Commercial Customer model differences. That update is attached. As with the difference between the residential models in the 2015 Rate Case and the 2018 Rate Case, the difference in the modeling results for the Commercial customers lie mainly in 1) different independent variables used in the model and 2) changing from a cross sectional to time series modeling approach in the 2018 Rate Case.

Table GPR-3			
Kentucky American Water Company			
Comparison of Trend Results Prior vs. Revised Approach			
Residential and Commercial Customer Models			
Decline	Prior	Revised	Difference
	Residential		
%	-2.48%	-2.02%	0.46%
gpcy	-1,211	-987	224
gpcm	-100.92	-82.25	18.7
gpcd	-3.32	-2.70	0.61
	Commercial		
%	-2.04%	-0.59%	1.45%
gpcy	-8,084	-2,522	5,562
gpcm	-673.67	-210.17	463.5
gpcd	-22.15	-6.91	15.24

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Kurt Kogler

27. Refer to the Direct Testimony of Kurt Kogler (Kogler Testimony), page 11, which provides the cost share for Kentucky-American's group insurance program, specifying that employees pay 24 percent and Kentucky-American pays 76 percent. Provide a breakdown of cost share for medical, dental, vision, life, disability, and any other group insurance offered by Kentucky-American that comprises the 24 percent and 76 percent paid by employees and Kentucky-American, for both the base and forecast test years.

Response:

Mr. Timothy Willig's Direct Testimony provides additional information about the 24% employee/76% employer cost share as a percentage of base pay referenced on page 11 of Mr. Kogler's Direct Testimony.

Specific cost share breakdown on a premium basis by benefit type for employee and employer contributions for base and forecasted test years were provided in KAW_R_PSCDR1_NUM037_121218.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kurt Kogler, Jim Pellock

- 28.** Refer to the Kogler Testimony, page 13, which explains that employees hired prior to 2006 are eligible for a defined benefit “pension” plan, while those hired after 2006 are eligible for a defined contribution plan consisting of employer matching of employees qualified deferred pay as well as a fixed contribution of 5.25 percent of qualifying pay. Further, employees in the defined benefit plan are eligible to participate in the defined contribution plan, but at a lower matching formula and with no 5.25 percent fixed contribution. Provide the total contributions made by Kentucky-American to the defined contribution plan for employees also eligible for the defined benefit plan for both the base and forecast test years.

Response:

Employees in the defined benefit plan (Pension) may receive matching contributions if they contribute to the 401k, although a lower matching formula is used. Please see the Company’s matching contribution expense below for 37 defined benefit plan participants who choose to contribute to the 401(k) plan.

401(k) Match – 50% match on up to 5% of base salary or hourly wages contributed

KAWC Base Year (3/1/18-2/28/19) Expense = \$41,957

KAWC Forecast Test Year (7/1/19-6/30/20) Expense = \$38,433

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: James S. Pellock, Kurt Kogler

- 29.** Refer to the Kogler Testimony, page 14, which describes Kentucky-American's employee stock purchase plan.
- a. Explain why Kentucky-American is increasing the discount for employee stock purchases from 10 percent to 15 percent.
 - b. Confirm that Kentucky-American does not contribute to the employee acquisition of the common stock purchased by employees. If this cannot be confirmed, provide the contribution amount for the base and forecast test years.
 - c. Confirm that Kentucky-American does not pay the difference in cost that comprises the discount offered to employees. If this cannot be confirmed, provide the contribution amount for the base and forecast test years.

Response:

- a. American Water regularly reviews benefit offerings for competitive alignment. The employee stock purchase plan ("ESPP") discount was changed after consulting a number of data sources and benchmarks such as the National Association of Stock Plan Professionals – one of the leading organizations for the stock and executive compensation professions.

We found that 15% discounts were very common – with approximately 72% of survey respondents offering this level of discount. We also looked at market data to understand the prevalence of the "lookback" feature (the practice of comparing the stock price at the beginning and end of the purchase period and selecting the lower of the prices). Although lookbacks are still common – we found that this option is less likely to be offered as the discount percentage increases. While there are examples of companies offering the "lookback" at a discount level of 15% - we made the decision to eliminate this feature as we increased the discount offering.

- b. The Company does not make a cash contribution for the employees' acquisition of common stock.
- c. Employees who choose to participate in a purchase period elect a contribution of 1% to 10% or \$5 to \$2,500 of per pay-period, after-tax compensation, subject to a maximum of \$25,000 per year. Under the ESPP plan, participants acquire shares of American Water common stock at a 15% discount. Kentucky American

expenses an amount equal to the 15% discount associated with the KAWC employee acquisition of American Water common stock via the ESPP. Referencing the direct testimony of James Pellock (page 10), the expense in the base period is \$14,837 and the expense in the forecasted test year is \$17,549.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: James S. Pellock

- 30.** Refer to the Pellock Testimony, page 5, lines 5–8. Provide any other wage increases other than the pro-rated increases of 2.85 percent in April 2019 and 2.90 percent in April 2020.

Response:

For the base year, the Company also included a wage increase of 2.75% for the union contract effective 11/1/2019.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kurt Kogler, Robert V. Mustich

- 31.** Refer to Kentucky-American's response to Staff's First Request, Item 33, page 8, the 2018 Determination of Company Performance.
- a. Confirm that Kentucky-American's Annual Performance Plan is weighted equally (i.e., 50 percent each) toward reaching the financial and non-financial goals of American Water Works Company, Inc. (American Water).
 - b. Confirm that if American Water's financial goals are not met Kentucky-American's employees will not receive any incentive pay rewards.

Response:

- a. The Annual Performance Plan is weighted as follows: Safety & People (15% weighting), Customer (15%), Environmental Leadership (10%), Technology & Operational Efficiency (10%), and Growth, as measured by Earnings per Share ("EPS") (50%). See page 3 of the 2018 Annual Performance Plan document previously provided in response to PSC 1-33. The Company's performance compensation plans align the interest of our customers, employees and shareholders. The operational components measure performance that can most directly influence customer satisfaction, health and safety, environmental performance, and operational efficiency, which affect the Company's financial performance (e.g., long-term cost savings or avoided costs). Importantly, to achieve performance pay financial goals, such as targeted EPS performance, demands attention to operating efficiency. That is, unless the utility controls or reduces its operating costs, it cannot achieve a targeted EPS. Well-grounded financial measures keep the organization focused on improved performance at all levels of the organization, particularly in increasing efficiency, decreasing waste, and boosting overall productivity. Those improvements benefit customers directly.
- b. Under the provisions of the Annual Performance Plan, there are no APP payments to employees if EPS falls below 90% of target. All of the metrics operate on a sliding scale that includes a threshold (minimum) level of performance and a maximum level. If some, but less than all of the performance goals are achieved, the funding is diminished accordingly. No funding pool is created if the financial threshold (minimum) performance measure is not achieved to ensure the financial viability of the plan. See pages 3 and 11 of the 2018 Annual Performance Plan document previously provided in response to PSC 1-33.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kurt Kogler, Robert V. Mustich

- 32.** Refer to Kentucky-American's response to Staff's First Request, Item 33.a, which states that the performance plans "keep employees focused on improved performance at all levels of the organization, particularly in increasing efficiency, decreasing waste, and boosting overall productivity." Provide all studies and analyses that quantify the impact that Kentucky-American's and American Water Works Service Company's (Service Company) incentive compensation programs have on the following:
- a. Increasing efficiency;
 - b. Decreasing waste; and
 - c. Boosting productivity.

Response:

See response to Item 34 of this request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: James S. Pellock

33. Refer to Kentucky-American's response to Staff's First Request, Item 33, page 39 of 39.

- a. Confirm that Kentucky-American's forecasted salaries and wages expenses is \$477,257 for the Annual Performance Plan and \$15,274 for the Long-Term Performance Plan.
- b. Identify, by position, each Kentucky-American employee who is eligible to participate in the Annual Performance Plan. For each position listed, provide the Annual Performance Plan budgeted for the forecasted period and the Annual Performance Plan available to each employee, if different from the forecasted amount.
- c. Identify, by position, each Kentucky-American employee who is eligible to participate in the Long-Term Performance Plan. For each position listed, provide the Long-Term Performance Plan budgeted for the forecasted period and the Long-Term Performance Plan available to each employee, if different from the forecasted amount.
- d. Using the table below, provide the requested Annual Performance Plan information for each Kentucky-American employee for the calendar Years 2013-2018.

Employee Name/Position (a)	Calendar Year		Difference	
	Annual Performance Plan Available (b)	Awarded (c)	Dollar (b)-(c)	Percentage ((b)-(c) ÷ (b))

- e. Using the table below, provide the requested Long-Term Performance Plan information for each Kentucky-American employee for the calendar Years 2013-2018.

Employee Name/Position (a)	Calendar Year		Difference	
	Long Term Performance Plan Available (b)	Awarded (c)	Dollar (b)-(c)	Percentage ((b)-(c) ÷ (b))

Response:

- a. The amounts provided in response to PSC 1-33, page 39 of 39 are the calendar year 2018 amounts expected to be paid in March 2019. Please see below for the APP and LTPP forecasted test year amounts for salary and wages expense.

	Kentucky-American Water Company Forecasted Year 7/1/19-6/30/20	
	<u>Total</u>	
Annual Performance Plan	\$	577,022
Long-Term Performance Plan		<u>16,105</u>
	\$	<u>593,127</u>

- b - e. Please refer to the attachment for Kentucky-American performance pay information. A portion of the attachment is confidential and is filed pursuant to a Petition for Confidential Protection.

Kentucky American Water Company
Annual Performance Pay (APP)

Employee / Position (a)		2013 Plan				2014 Plan				2015 Plan			
		APP		Difference		APP		Difference		APP		Difference	
		Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%
[REDACTED]	Employee Number	\$53,713	\$32,620	\$21,093	39%	\$55,055	\$58,358	(\$3,303)	-6%	\$55,095	\$0	\$55,095	100%
	Job					8,902	11,128	-2,226	-25%	13,363	9,080	4,283	32%
										2,683	0	2,683	100%
										3,522	0	3,522	100%
		15,461	9,586	5,875	38%	15,886	15,886	0	0%	15,898	15,394	504	3%
										3,330	0	3,330	100%
		3,214	1,639	1,575	49%	3,262	3,262	0	0%	3,264	832	2,432	75%
										2,960	0	2,960	100%
										3,020	0	3,020	100%
										2,481	0	2,481	100%
		8,415	4,292	4,123	49%	8,541	7,260	1,281	15%	8,548	0	8,548	100%
										2,891	0	2,891	100%
										0	3,696	-3,696	
										2,919	0	2,919	100%
		7,808	4,372	3,436	44%	7,964	6,371	1,593	20%	7,969	0	7,969	100%
		7,085	4,464	2,621	37%	7,346	6,611	735	10%	7,352	7,175	177	2%
										3,001	0	3,001	100%
		8,817	6,172	2,645	30%	19,786	15,829	3,957	20%	9,000	17,066	-8,065	-90%
		7,689	4,075	3,614	47%	7,823	7,823	0	0%	7,829	6,384	1,445	18%
										2,376	0	2,376	100%
	6,707	4,225	2,482	37%	7,143	7,500	-357	-5%	7,148	1,848	5,300	74%	
									2,998	0	2,998	100%	
	8,180	5,235	2,945	36%	8,405	8,405	0	0%	8,411	0	8,411	100%	
									2,668	0	2,668	100%	
									2,314	0	2,314	100%	

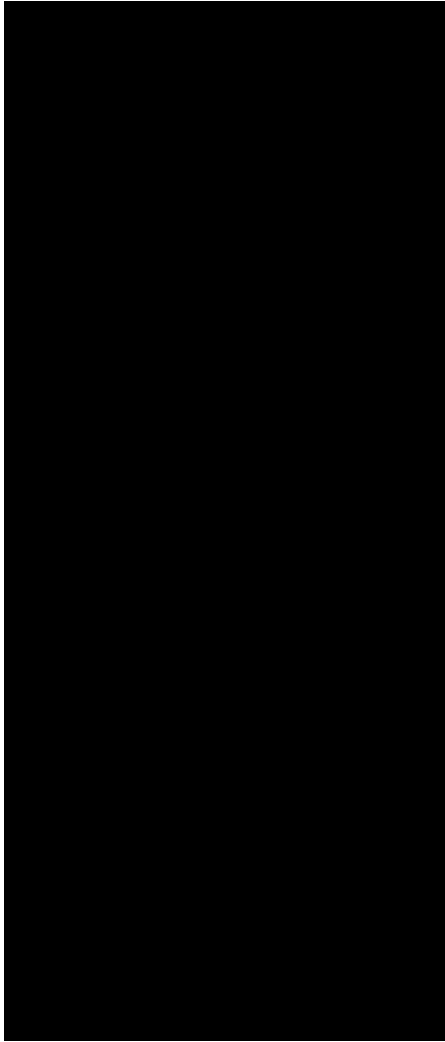
Kentucky American Water Company
Annual Performance Pay (APP)

Employee Number	Employee / Position (a) Job	2013 Plan				2014 Plan				2015 Plan			
		APP		Difference		APP		Difference		APP		Difference	
		Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%
		31,331	39,112	-7,781	-25%	32,193	32,193	0	0%	32,215	0	32,215	100%
										2,381	0	2,381	100%
										3,013	6,599	-3,586	-119%
										2,723	6,550	-3,827	-141%
										6,920	7,233	-313	-5%
										2,741	0	2,741	100%
										2,574	0	2,574	100%
										2,741	0	2,741	100%
		13,728	9,610	4,118	30%	14,140	16,968	-2,828	-20%	14,150	0	14,150	100%
										2,868	0	2,868	100%
										3,098	0	3,098	100%
		6,943	4,790	2,153	31%	7,904	9,485	-1,581	-20%	7,191	9,499	-2,308	-32%
		6,857	3,771	3,086	45%								
		24,702	18,032	6,670	27%					25,523	0	25,523	100%
		6,396	4,157	2,239	35%	7,500	7,118	382	5%	6,657	7,500	-843	-13%
	VP Operations (Large 2)									0	27,940	-27,940	
										2,780	0	2,780	100%

Kentucky American Water Company
Annual Performance Pay (APP)

Employee / Position (a)		2013 Plan				2014 Plan				2015 Plan					
		APP		Difference		APP		Difference		APP		Difference			
Employee Number	Job	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%		
[REDACTED]										0	2,893	-2,893			
											2,781	0	2,781	100%	
											2,205	0	2,205	100%	
											2,212	0	2,212	100%	
											0	13,367	-13,367		
				7,006	4,904	2,102	30%	7,328	7,328	0	0%	7,333	7,205	128	2%
												2,711	0	2,711	100%
												2,500	1,252	1,248	50%
												6,000	3,616	2,384	40%
												9,500	7,980	1,520	16%
								14,642	14,642	0	0%	14,652	13,547	1,106	8%
												2,083	2,130	-47	-2%
												2,502	2,575	-73	-3%
										0	8,160	-8,160			
										0	6,394	-6,394			

Kentucky American Water Company
Annual Performance Pay (APP)

Employee / Position (a)		2013 Plan				2014 Plan				2015 Plan					
		APP		Difference		APP		Difference		APP		Difference			
		Employee Number	Job	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%
															
Total		\$242,052	\$173,906	\$68,148	28%	\$238,486	\$240,880	(\$2,394)	-1%	\$335,595	\$183,541	\$152,054	45%		

Kentucky American Water Company
Annual Performance Pay (APP)

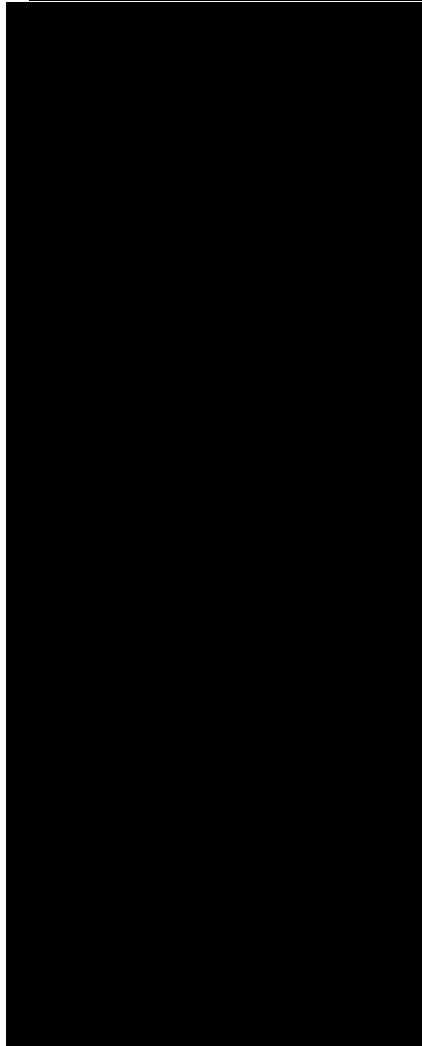
Employee / Position (a)		2016 Plan				2017 Plan				2018 Plan (1)				
		APP		Difference		APP		Difference		APP		Difference		
		Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	
Employee Number	Job	32,856	0	32,856	100%									
		-												
		0	3,745	(3,745)	-100%	2,501	2,575	-74	-3%	2,638		2,638		
		-												
		6,603	12,693	(6,090)	-92%	6,798	12,197	-5,399	-79%	15,513		15,513		
		0	9,071	(9,071)	-100%	6,748	0	6,748	100%	7,024		7,024		
		7,238	10,018	(2,780)	-38%	7,452	7,655	-203	-3%	7,813		7,813		
		0	2,923	(2,923)	-100%	2,854	0	2,854	100%					
		0	4,889	(4,889)	-100%	2,700	2,865	-165	-6%	2,849		2,849		
		0	2,652	(2,652)	-100%	1,966	1,813	153	8%	2,064		2,064		
		0	4,568	(4,568)	-100%	2,854	2,714	140	5%	3,011		3,011		
		-												
		-												
		-												
		14,545	0	14,545	100%									
		-												
		0	3,635	(3,635)	-100%	2,439	2,487	-47	-2%	2,548		2,548		
		0	3,387	(3,387)	-100%	2,246	2,290	-44	-2%	2,346		2,346		
		0	4,625	(4,625)	-100%	2,993	2,885	108	4%	3,111		3,111		
		-												
		-												
		0	9,412	(9,412)	-100%	3,227	0	3,227	100%	7,305		7,305		
		0	3,761	(3,761)	-100%	2,634	2,969	-335	-13%	2,765		2,765		
		-												
		-												
		0	4,945	(4,945)	-100%	2,868	2,939	-71	-2%	3,011		3,011		
		8,265	24,393	(16,128)	-195%	13,632	14,106	-474	-3%	19,196		19,196		
		0	4,363	(4,363)	-100%	2,274	2,201	73	3%	2,374		2,374		
		0	3,216	(3,216)	-100%	2,125	0	2,125	100%	2,189		2,189		
		0	3,628	(3,628)	-100%	2,420	0	2,420	100%	2,528		2,528		
0	3,142	(3,142)	-100%	2,102	1,958	144	7%	2,229		2,229				
-														
0	2,964	(2,964)	-100%	1,982	1,661	321	16%	2,101		2,101				
7,505	11,541	(4,037)	-54%	7,727	0	7,727	100%	12,182		12,182				
0	44,820	(44,820)	-100%	28,784	32,922	-4,138	-14%	30,547		30,547				
-														
-														
-														
0	5,291	(5,291)	-100%	2,930	3,018	-88	-3%	3,092		3,092				
-														

VP Operations (Large 2)

Kentucky American Water Company
Annual Performance Pay (APP)

Employee / Position (a)		2016 Plan				2017 Plan				2018 Plan (1)			
		APP		Difference		APP		Difference		APP		Difference	
		Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%
[REDACTED]	Employee Number	Job	0	9,143	(9,143)	-100%	6,121	5,965	156	3%	6,409	6,409	
			-										
			0	5,546	(5,546)	-100%	2,937	2,727	210	7%	3,104	3,104	
			0	4,491	(4,491)	-100%	2,325	2,584	-259	-11%	2,456	2,456	
			-										
			0	3,954	(3,954)	-100%	2,321	2,787	-466	-20%	2,668	2,668	
							7,740	0	7,740	100%			
			7,589	0	7,589	100%	7,798	0	7,798	100%			
			0	6,283	(6,283)	-100%	2,893	3,022	-129	-4%	3,097	3,097	
			-										
			2,687	10,846	(8,159)	-304%	5,534	7,406	-1,872	-34%	10,499	10,499	
			-										
			15,061	22,937	(7,876)	-52%	15,356	14,986	370	2%	21,468	21,468	
			-										
			-										
			-										
			2,577	3,943	(1,367)	-53%	2,640	2,608	32	1%	5,603	5,603	
							0	9,189	-9,189	-100%			
			-				0	12,789	-12,789	-100%			
			6,804	20,941	(14,137)	-208%	11,702	12,716	-1,013	-9%	16,559	16,559	
		-											
		0	3,050	(3,050)	-100%	2,036	2,356	-320	-16%	5,062	5,062		
		6,804	10,464	(3,660)	-54%	7,005	5,757	1,248	18%	7,345	7,345		
		0	4,788	(4,788)	-100%	2,666	2,574	92	3%	2,840	2,840		
		0	4,806	(4,806)	-100%	3,332	6,935	-3,603	-108%	3,507	3,507		

Kentucky American Water Company
Annual Performance Pay (APP)

Employee / Position (a) Employee Number Job		2016 Plan				2017 Plan				2018 Plan (1)				
		APP		Difference		APP		Difference		APP		Difference		
		Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	
						0	2,383	-2,383	-100%					
		0	13,164	(13,164)	-100%	0	20,114	-20,114	-100%	24,153		24,153		
						0	1,964	-1,964	-100%	2,291		2,291		
						0	2,531	-2,531	-100%	2,817		2,817		
						0	2,885	-2,885	-100%	3,688		3,688		
						0	6,089	-6,089	-100%	11,023		11,023		
						0	1,627	-1,627	-100%					
		Total		\$250,269	\$472,949	(\$222,680)	-89%	\$326,031	\$370,485	(\$44,449)	-14%	422,322	\$0	\$422,322

Note: APP for a calendar year is paid in March of the following year, for example the 2013 APP was paid in March of 2014.

(1): 2018 APP payment is made in March 2019.

**Kentucky American Water Company
Long Term Performance Pay (LTTP)**

Employee / Position (a)		2013 Plan				2014 Plan				2015 Plan			
		Long Term		Difference		Long Term		Difference		Long Term		Difference	
		Performance Plan				Performance Plan				Performance Plan			
Employee Number	Job	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%
[REDACTED]	[REDACTED]	\$57,329	\$57,329	\$0	0%	\$55,819	\$55,819	\$0	0%	\$56,219	\$55,509	\$710	1%
		16,612	16,612	0	0%	16,218	16,218	0	0%	16,436	5,596	10,840	66%
		1,091	1,091	0	0%								
	VP Operations (Large2)												
Total		\$75,032	\$75,032	\$0	0%	\$72,037	\$72,037	\$0	0%	\$72,655	\$61,105	\$11,550	16%

**Kentucky American Water Company
Long Term Performance Pay (LTPP)**

Employee / Position (a)		2016 Plan				2017 Plan				2018 Plan (1)			
		Long Term		Difference		Long Term		Difference		Long Term		Difference	
		Performance Plan	Awarded	Dollar	%	Performance Plan	Awarded	Dollar	%	Performance Plan	Awarded	Dollar	%
Employee Number	Job	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%	Available	Awarded	Dollar	%
		\$56,741	\$0	\$56,741	100%								
		16,428	0	16,428	100%								
	VP Operations (Large2)	0	30,378	(30,378)	-100%	14,686	11,056	3,630	25%	15,274	12,603	2,671	17%
Total		\$73,169	\$30,378	\$42,791	58%	\$14,686	\$11,056	\$3,630	25%	\$15,274	\$12,603	\$2,671	17%

(1): Awarded LTPP showing is the balance accrued as of September 2018

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Kurt Kogler, Robert V. Mustich, Melissa Schwarzell

- 34.** In Case No. 2004-00103, the Commission disallowed for ratemaking purposes the costs associated with the Annual and Long-Term Performance Plans because of the lack of any study or analysis that quantified the program's benefits.¹ In this proceeding, Kentucky-American lists benefits its customers receive from the employee variable compensation plans.²
- a. Provide a copy of all studies and analyses that Kentucky-American has performed or commissioned that qualify the benefits the ratepayers derive from the Annual and Long-Term Performance Plans.
 - b. If Kentucky-American and/or the Service Company have not performed or commissioned such studies or analysis, explain why they have not done so.
 - c. If Kentucky-American is unable to document the benefits of its variable employee compensation plans, explain why Kentucky-American's ratepayers should bear the cost of these plans.

Response:

a., b. & c. The performance measures themselves are a quantification of the benefits to customers. By rewarding superior performance in every function, all of these aspects of overall performance provide direct and tangible benefits to our customers. KAWC's performance compensation is not only a means of focusing its employees on the organization's goals, but also a means of measuring attainment of those goals.

Customers derive a direct benefit from our focus on the key measures in the program. Further, well-grounded financial measures keep the organization focused on improved performance at all levels of the organization, particularly in increasing efficiency, decreasing waste, and boosting overall productivity. All of these aspects of overall performance benefit customers by recognizing superior performance in every function. This superior performance supporting our improved O&M efficiency is the result of having a workforce that is incented to find smarter, more efficient ways to deliver water and wastewater services. Finally, a financially healthy utility focused on efficiency and customer satisfaction is able to attract the capital investments necessary to provide safe and reliable service, and to maintain the technological expertise necessary to operate the Company and comply with

¹ Case No. 2004-00103, *Adjustment of the Rates of Kentucky-American Water Company* (Ky. PSC Feb. 28, 2005), Final Order at 49.

² Kentucky-American's Response to Staff's First Request, Item 33.a.

increasing water quality standards. A financially healthy utility is very much in the interest of KAWC's customers, as it helps ensure KAWC the ability to provide safe and reliable service at the lowest reasonable cost.

KAWC's performance in these areas, incentivized by its short-term variable pay plans, makes clear the focus on operational improvements that benefit customers:

APP Operational Metrics	2017	2018
OSHA Recordable Incident Rate	3.7	2.03
OSHA Days Away/Restricted or Job Transfer Rate	3.7	1.36
Customer Satisfaction Survey ³	1 st Quartile	1 st Quartile
Drinking Water Quality ³	5x better than industry average	11x better than industry average
O&M Efficiency Ratio	33.6	33.5

For example, fewer OSHA incidents indicate improved safety for customers and employees. No one can credibly dispute the benefits of improved safety. Further, reduced accidents reduce the attendant costs—workers' compensation, damage repair, etc.—which mitigates the operating costs that customers pay through rates. KAWC continues to improve its performance in reporting near misses, another illustration of the Company's high-performing safety culture. KAWC's commitment to water quality is evident through its optimization and water quality improvement efforts described by Mr. Rogers in his direct testimony (p. 5-9) and it did not receive a notice of violation in either year. The Company's safety and water quality performance reflect an engaged workforce that is focused on providing safe, reliable and affordable service to KAWC's customers.

Further, improved operational efficiency equates to controlled or reduced operating costs. This mitigates the operating costs that customers ultimately pay through rates. Cost control performance pay metrics benefit customers for these reasons. Where KAWC can reduce operating expenses, it can increase investment in infrastructure without increasing rates, because every dollar of operating expenses saved can fund approximately \$8 of investment. Therefore, customers also benefit from KAWC's

³ American Water's overall performance, which includes KAWC's performance, is considered in these categories for APP purposes.

enhanced ability to invest in the infrastructure that it needs to meet its service obligations to customers.

Given the capital intensive nature of water and wastewater operations, it is appropriate to consider the impact of financial performance on the availability of internally-generated funds and maintaining credit ratings at a level necessary to access capital at reasonable rates. The use of internal capital or low-cost debt mitigates the Company's financing costs for its substantial ongoing investment in new and replacement facilities. In addition, attention to cost controls is determinative to a considerable extent in achieving financial goals and the resulting positive impact on financial metrics can help the Company mitigate its requested rate increase. Consequently, when financial performance is achieved through efficiency, as is the case for KAWC, the interests of customers and shareholders are aligned.

In addition, Willis Towers Watson conducted a comprehensive assessment of benchmark jobs that represent approximately 63% of the population of KAWC's employees as of September 28, 2018 (Mustich direct testimony, p. 5). The study clearly demonstrates that KAWC's overall test year direct compensation cost level for employees is between 11-14% below the market median (Mustich direct testimony, p. 6-7). In other words, even if the full level of performance compensation is recognized, KAWC's total direct compensation expense is still below the market median. Moreover, KAWC's test year direct compensation cost level for employees would be 17-20% below the market median if KAWC employees did not receive performance compensation (Mustich direct testimony, p. 7-8). The Willis Towers Watson study, therefore, demonstrates that KAWC's employees are below or at the low end of the range of market median for each element of compensation, overall compensation, and total remuneration even when performance compensation is included (Mustich direct testimony, p. 8).

When determining the reasonableness of compensation, the primary focus should be the reasonableness of the Company's overall compensation. In view of the fact that, even when performance compensation is included, the compensation levels for many of KAWC's employees are below the mid-point of the compensation range for similar positions in the area, there is no evidence that the Company's employees are overpaid. It is the corporate philosophy of American Water that compensation is best set through a combination of base and performance pay. This philosophy has been informed by experts in the compensation field who advise American Water management on compensation philosophy. If the expense is reasonably incurred and in line with what other industries are paying for a similar service, it is prudently incurred. It should, therefore, go without saying that, if the Company's overall compensation levels are reasonable and in line with or below the market, regardless of the combination of fixed and variable payments that the employees earn, then the Company's overall compensation expense must be reasonable. Given Mr. Mustich's testimony that KAWC's employee costs are lower than the market for such employees, irrespective of performance compensation, it should be clear that employee costs are reasonable. Indeed, without our performance compensation, our

costs would arguably be unreasonably below the applicable labor market and insufficient to retain our qualified workforce in the long run. Our performance compensation plan is not an addition to reasonable compensation; our performance compensation plan makes our compensation reasonable.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kurt Kogler, Robert V. Mustich, Patrick Baryenbruch

- 35.** Provide all analyses and studies that quantify the benefits Kentucky-American ratepayers receive from the variable employee compensation plans that are provided to the Service Company employees.

Response:

Service Company shares the same performance compensation measures¹ as Kentucky-American. Service Company's performance is measured based on American Water's overall performance, which includes KAWC's performance. See the response to Item PSC 2-34. In addition, as Company witness Baryenbruch explains, Service Company provides services to American Water's affiliates, including KAWC, at cost and at prices that are more advantageous than could be obtained in the market place; and Service Company costs are reasonable inclusive of variable compensation.

¹ Safety & People (15% weighting), Customer (15%), Environmental Leadership (10%), Technology & Operational Efficiency (10%), and Growth, as measured by Earnings per Share ("EPS") (50%)

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Melissa L. Schwarzell

- 36.** Refer to Kentucky-American's response to Staff's First Request, Item 1, KAWC_2018_Rate_Case_-_Support_Services_Exhibit.xls, Labor & Related Tab, Column 11, Total RYE 6/30/20 Labor & Related Expense. This Exhibit indicates that labor costs for the Service Company is \$6,528,362 in the forecasted period. Separately identify the amount of Annual and Long-Term Performance Plans that is included in the forecasted Service Company labor costs.

Response:

The Annual Performance Plan and Long-Term Performance Plan included in the forecasted period is \$696,641 and \$480,641, respectively. Please see the table below for a breakdown by category.

	Forecasted Year 7/1/19-6/30/20		
	Water	Sewer	Total
Annual Performance Plan	\$ 695,884	\$ 757	\$ 696,641
Long-Term Performance Plan	480,118	522	480,641
	<u>\$1,176,002</u>	<u>\$1,279</u>	<u>\$1,177,281</u>

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Melissa L. Schwarzell

- 37.** Identify, by position, each Service Company employee who is eligible to participate in the Annual Performance Plan. For each position listed, provide the Annual Performance Plan budgeted for the forecasted period and the amount allocated to Kentucky-American.

Response:

The Service Company forecast of the Annual Performance Plan (APP) program is not forecasted and allocated by position. The Service Company employees eligible to participate in the APP program are all full-time and part-time employees. Please see the confidential attachment for the employee levels and applicable percentage for each level available to be awarded. The attachment is being provided pursuant to a petition for confidential protection. Also, see the response to KAW_R_PSCDR2_NUM036_012519 for the total amount of APP pay forecasted by the Company.

**ATTACHMENT TO KAW_R_PSCDR2_NUM037_012519
FILED UNDER SEAL PURSUANT TO THE PETITION FOR
CONFIDENTIAL TREATMENT FILED ON
JANUARY 25, 2019**

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 38.** Identify, by position, each Service Company employee who is eligible to participate in the Long-Term Performance Plan. For each position listed, provide the Annual Performance Plan budgeted for the forecasted period and the amount allocated to Kentucky-American.

Response:

The Company presumes that the request for budgeted information refers to Long-Term Performance Plan, not Annual Performance Plan. The Service Company allocation of the Long-Term Performance Plan (LTPP) program is not allocated in the forecasted period specifically by position nor is eligibility determined by position. Instead, full-time, nonunion employees with a salary level 50 through 75 are eligible to participate. Please see the salary level table provided in response to KAW_R_PSCDR2_NUM037_012519. The individual award grant amount is based on a percentage of base salary, granted in the form of an equity award (stock options). Also, see the response to KAW_R_PSCDR2_NUM036_012519 for the total amount of LTPP forecasted by the Company.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Patrick L. Baryenbruch

- 39.** Refer to Direct Testimony of Patrick L. Baryenbruch, page 3, lines 17–19. Explain whether Kentucky-American also compared the cost per customer for the Service Company with the cost per customer of other water companies. If so, provide this comparison. If not, explain why not.

Response:

No, Mr. Baryenbruch does not include water companies in the comparison group because there is no publicly available source of cost data for water service companies. Few water companies have a centralized service company arrangement. Those that do are not overseen by a single regulatory authority that requires standard informational filings as does the FERC for the electric utility industry. If a similar source existed for water service companies, Mr. Baryenbruch would have included them in his cost per customer comparison.

The vast majority of test year Service Company charges to KAWC are for administrative and general (A&G)-related services. These are the expenses that are benchmarked by Mr. Baryenbruch. His experience has shown that A&G services involve similar processes across different types of utilities. A&G functions include the following:

- Executive Management
- Legal
- Human Resources
- Audit Services
- Finance
- Accounting
- Taxes
- Budgeting and Reporting
- Information Technology
- Supply Chain
- Rates and Regulatory
- External Affairs
- Customer Services

Utility service companies provide these services in a similar way and, therefore, valid cost comparisons can be made across utility industry types.

Take, for instance, accounting services. Regardless of utility type, the work of accountants revolves around their assigned set of general ledger accounts; they ensure

transactions have been processed and properly posted to their accounts, reconcile accounts to subsidiary ledgers, prepare journal entries, compile budget versus actual data, research variances and prepare cost performance reports for operating managers. These activities take place in water utilities in the same way as in electric utilities.

Investor-owned utilities of any type have similar processes for tax accounting and compliance. They all have to deal with federal and state income, property, sales and use taxes. In general, tax personnel are responsible for determining tax provisions and preparing and filing various tax returns.

Information technology services cover a broad range of activities that are also generally quite similar among utilities. Employees are provided with workstations, email, Microsoft Office, phone service, internet connections and access to financial, human resources and various other corporate applications. Many of the same applications are used by different utilities. For example, American Water uses the enterprise resource planning system called SAP. My electric utility clients Dominion Energy and Southern California Edison use the same system. Another similar system is PowerPlant, a project and asset accounting system used by American Water and by my electric utility client Duke Energy.

Information technology hardware and software is operated and maintained in the same way regardless of utility type. Application systems run on the utility's own data center or on a cloud service provider. They are operated and maintained by the utility's IT organization or by an outside service provider. Thus, American Water's data center provides the same type of services as the data centers of electric service companies.

The processes and activities associated with delivering other A&G services, such as legal, procurement, human resources, customer services and executive management are likewise similar among different types of utilities.

For all these reasons, Mr. Baryenbruch believes his comparison provides a valid and useful way to put into perspective the A&G-related charges from American Water's service company compared to the cost of other utility service companies.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: James S. Pellock

- 40.** Using the table below, provide the requested Annual Performance Plan information for each Kentucky-American employee for the calendar Years 2013–2018.

Employee Name/Position (a)	Calendar Year		Difference	
	Annual Performance Plan Available (b)	Awarded (c)	Dollar (b)-(c)	Percentage ((b)-(c) ÷ (b))

Response:

Please refer to KAW_R_PSCDR2_NUM033_Attachment_Confidential. A portion of the attachment is confidential and is filed pursuant to a Petition for Confidential Protection.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: James S. Pellock

- 41.** Using the table below, provide the requested Long-Term Performance Plan information for each Kentucky-American employee for the calendar Years 2013–2018.

Employee Name/Position (a)	Calendar Year		Difference	
	Long Term Performance Plan Available (b)	Awarded (c)	Dollar (b)-(c)	Percentage ((b)-(c) ÷ (b))

Response:

Please refer to KAW_R_PSCDR2_NUM033_Attachment_Confidential. A portion of the attachment is confidential and is filed pursuant to a Petition for Confidential Protection.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kurt Kogler

- 42.** Refer to Kentucky-American's response to Staff's First Request, Item 33, 2018 Annual Performance Plan. State whether the forecasted employee incentive pay to be awarded under Kentucky-American's 2018 Annual Performance Plan is similar to the pay under the plan that the Commission disallowed in Case No. 2004-00103.
- a. If the incentive plan is the same, explain why Kentucky-American proposes to include its costs in the determination of rates in this proceeding.
 - b. If the incentive plan differs from that reviewed in Case No. 2004-00103, provide a comparative analysis listing the similarities and differences between the two incentive plans. Include detailed discussions for each similarity and difference noted in Kentucky-American's comparative analysis.

Response:

- a. The current performance plan, while similar, is not the same as the 2004 plans. Please see the Company's response to Item 34 of this request for an explanation of why KAWC proposes to include the costs in the determination of rates in this proceeding.
- b. Please see attachment for a copy to the Company's 2004 plan brochure. The Company's 2018 plan brochure is attached to the Company's response to Item 33 of Staff's First Request. The 2019 plan brochure has not yet been released. Approximately 40 KAWC employees participated in the 2004 APP. In 2019, APP eligibility has been extended to include all KAWC employees (both union and non-union).

The current performance plan differs from the 2004 and 2010 plans in several ways, including:

- Eligibility for the plan has changed and expanded.
 - In 2004, the plan was only open to exempt employees
 - In 2016, non-exempt (non-bargaining unit) employees became eligible
 - In 2017, part time employees became eligible
 - In 2019, bargaining unit employees became eligible

Expanding eligibility for the plan to all employees reflects management's belief that all employees contribute to efficiency, effectiveness, and customer satisfaction.

- In 2016, the name of the plan changed to Annual Performance Plan to emphasize performance.
- Other changes include the addition of external benchmarking for customer satisfaction and safety targets, including only base compensation in calculation of targets, movement to equal weighting of financial and non-financial performance and placing greater emphasis and alignment on business unit performance such that awards for Kentucky American employees are more heavily weighted on Kentucky American performance results than overall American Water results once the plan meets overall funding requirements.
- Plan metrics have also changed.

In 2004, Kentucky-American based awards upon the following performance criteria:

- financial (60 percent - Value Added and Free Cash Flow)
- operational (25 percent)
- individual (15 percent)

In 2010, Kentucky-American based awards upon the following performance criteria:

- financial (70 percent = Diluted Earnings Per Share (50%) + Operating Cash Flow 20%)
- operational (30 percent = Safety (7.5%) + Customer Satisfaction Survey (7.5%) + Environmental Compliance (7.5%) + Customer Service Quality (7.5%)).

The performance measures for 2018 are:

- financial (50 percent = Diluted Earnings Per Share)
- operational (50 percent) = Safety & People (15%) + Customer Satisfaction Survey (15%) + Environmental Leadership (10%) + Operational Efficiency Improvement (10%)).

- Another significant difference between the 2004 plan and the current plan is that the Company's current compensation plan targets total direct compensation (base, short-term variable compensation, and long-term variable compensation) at the median (50th percentile) of the market. The Company has submitted a report by Mr. Mustich that demonstrates its current target total direct compensation (base plus performance pay) is below the market median.

Under the current plans, the overall APP funding is based on achieving both operational and financial goals. The maximum award pool would be available if the Company's goals are achieved for all the overall performance metrics. If some, but less than all, of the performance goals are achieved, the funding

is diminished accordingly. No pool is created for less than the minimum financial threshold performance (90% of plan).

Rewarding Achievement

The 2004 Annual Incentive Plan



The 2004 American Water Annual Incentive Plan

The 2004 American Water Annual Incentive Plan (AIP) recognizes the opportunity and the accountability we share for achieving our goals. Your accomplishments have helped to build American Water's success to this point, and the AIP will reward you for the contribution you make to the achievement of our goals.

Who Is Eligible for the 2004 AIP

As in our previous plan, all full-time management, professional and technical employees (exempt from overtime) in American Water are eligible to participate in the 2004 AIP.

Eligible employees who join American Water before September 30 of a plan year (January 1 – December 31) are also eligible to participate in the plan on a prorated basis.

Eligible employees seconded from RWE/Thames Water will participate in the plan for the duration of their secondment.

Your Award Opportunity

Your award opportunity is based on your role. Your manager will confirm your award opportunity to you in writing.

If you are promoted during the plan year to a position with a higher award level, your opportunity will be prorated to reflect the full months at each award level. Similarly, if you are reclassified to a position with a lower AIP award level, your award opportunity will be prorated to reflect the full months at each award level.

What the Plan Measures

The AIP is designed to reward participants for the performance results they and the Company attain during the plan year. There are three performance components: financial, operational and individual.

- The **Financial** component includes two new measures – Value Added and Free Cash Flow I.

Goals will be set for the business unit in which you work based on the 2004 business plan. In 2003, goals were set at your work and at the next higher organizational level; in 2004, financial goals will only be based on your business unit level, e.g., California American.

- The **Operational** component includes performance measures tied to the American Water balanced scorecard through which customer service, environmental and health & safety measures and goals, as appropriate to your role, are the key performance indicators. Those in American Water Business Center roles in Voorhees will have a mix of financial and individual measures, but no Operational component.
- The **Individual** component includes objectives (Key Performance Indicators) within the company performance management process.

Financial Measures	Operational Measures	Individual Measures
<ul style="list-style-type: none"> ▪ Value Added ▪ Free Cash Flow I 	<p>Examples include:</p> <ul style="list-style-type: none"> ▪ Customer Service – This will make up 50% of the total operational component. This measure deals with services that directly benefit the customer. ▪ Environmental ▪ Health & Safety <p>...as applicable to your business unit and role</p>	<ul style="list-style-type: none"> ▪ 5 Key Performance Indicators (KPI's) to be agreed by AIP participant and their manager by the end of April.

A Note on “Value Added” and “Free Cash Flow I”

In the 2003 AIP Plan, the measures were Operating Result and Net Debt. For 2004, we've chosen Value Added and Free Cash Flow I as the measures for the Financial component of the AIP because they are critical gauges of our business success, and are now the standard used by RWE. Here's how we define these new terms.

- **Value Added**

- An established measure which reflects the contribution made by a business unit to the Group, relative to its cost of capital
- It is calculated using operating result and operating assets

- **Free Cash Flow I**

- An important operating figure that is also linked to net debt performance.
- It is defined as the cash flow from operating activities (after interest and tax) plus capital expenditure. It does not include the impact of financial restructuring or any impact of acquisitions or disposals.

Each measure has equal weighting and business plan performance will deliver half the relevant financial bonus element. Therefore, if only one measure is met, there could be a potential award under the plan.

Each performance measure has a straight-line payment profile, with the mid-point defining “on-target” performance, i.e. 100%. The slope of the payment profile is determined by reference to the volatility (inconsistency) associated with the measure. For Value Added, volatility is determined by potential variations in operating result; for Free Cash Flow I (“FCFI”), volatility is determined by Earnings Before Interest Tax Depreciation and Amortization (EBITDA).

In all cases, the 2004 plans have been adjusted for the capital expenditure challenge that we have set as a company.

How Your Award Is Weighted

Your award opportunity is based on up to three performance components, depending on your role. You can earn part of your award for each component independent of the others. That means you can receive an award based on all, some or none of the applicable components, depending on actual performance results.

Note that the American Water Board reserves the right to determine whether incentives are payable to any individual or group of individuals. The Board may withhold all incentive payments in exceptional circumstances, such as failing to meet minimum financial goals. In any case, individuals who do not meet our performance expectations will not be eligible to receive an incentive award.

The portion of your award opportunity you can earn for each component is reflected in weightings assigned to each, based on your role in the organization, as the following chart shows.

If your position is...	Your Financial component weighting is...	Your Operational component weighting is...	And your Individual component weighting is...
Regional Managing Directors & their direct reports*	70%	20%	10%
Business Center employees (Voorhees, Procurement, IT, Belleville, SSC)	70%	N/A	30%
Other eligible management and exempt employees	60%	25%	15%

* (Does not apply for administrative or short-term special assignment employees who report to Regional Managing Directors. Those individuals would fit under the "other eligible management and exempt employee category in the chart above.)

Note that award opportunities for all Business Center (Voorhees) roles will have a mix of Financial and Individual measures, but no Operational component.

Your manager will discuss these with you and confirm in writing the measures and weightings that apply to you.

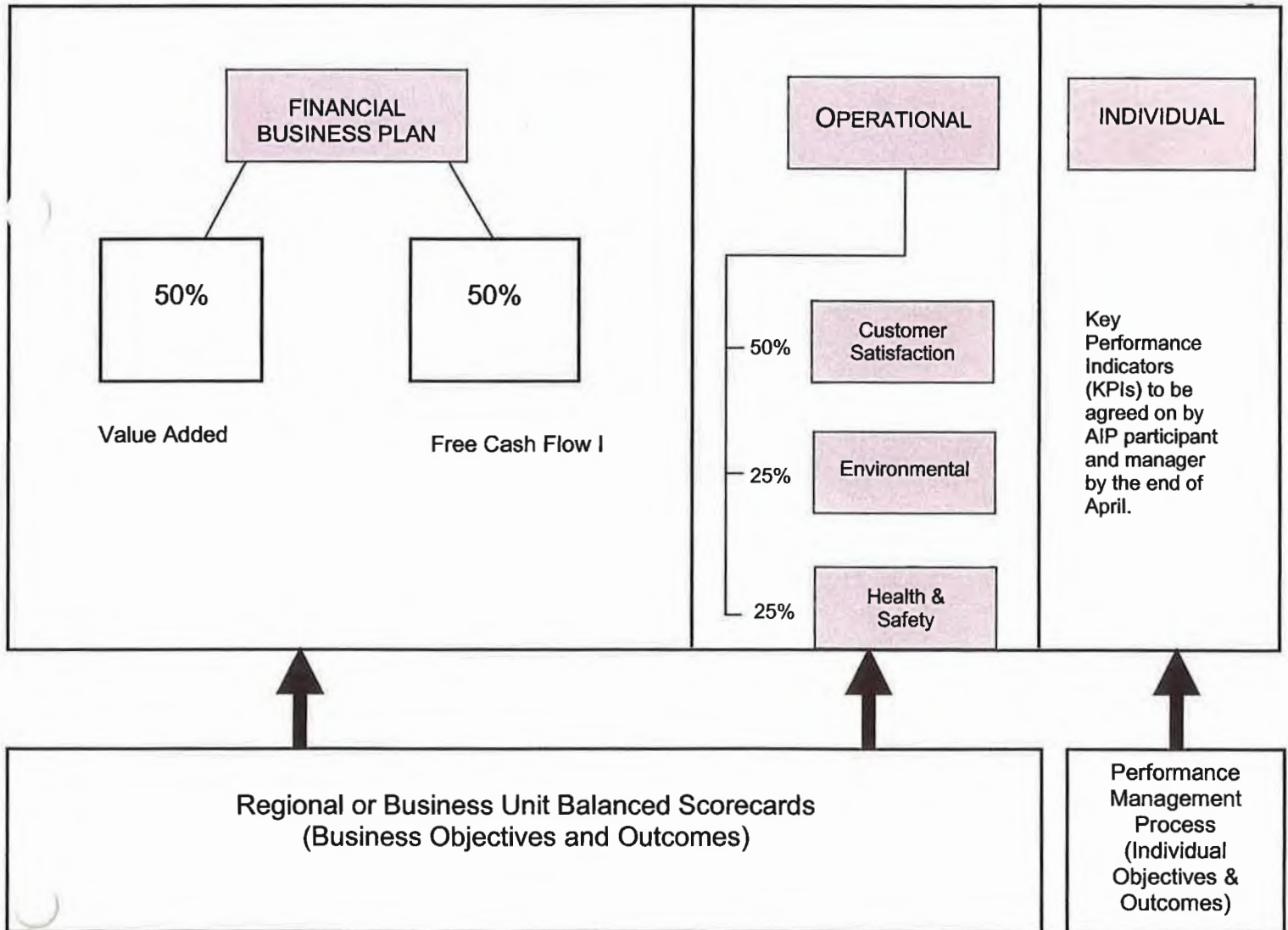
How the Weightings Come Together

Here is an **example** of how the three performance components and their weightings come together. As you can see, the measures within each component are also weighted.

The weightings within the financial component are always based on your business unit measures of Value Added and Free Cash Flow I, to determine the portion of the financial component award opportunity that is payable.

You will receive a graph for your business unit. Each will detail the percentage of your financial award opportunity payable at a given level of combined Value Added and Free Cash Flow I achievement, ranging from a minimum level of achievement that qualifies for an award up to the maximum level. The closer actual results come to target financial performance, the higher the award for the financial component.

EXAMPLE



Performance You Can Impact

We believe it's essential that participants be accountable for, measured on and rewarded for performance that they can directly impact or influence. That's why performance measures for the financial component are based on your local or "home" organization, i.e., the business unit where you work.

Similarly, the operational and individual measures and goals that apply to you will reflect your role. Your manager will review and discuss all applicable financial and operational measures and goals with you.

Individual Performance

The individual performance will be assessed using American Water's Performance Management and Development Review (PDR) process. This process has been revised to align with the new Balanced Scorecard. The first section of the PDR form contains a scorecard in which your individual Key Performance Indicators (KPIs) will be documented. KPIs are individual performance objectives. You will jointly identify and agree to your individual KPIs and relative weightings to be achieved during the year with your direct supervisor.

In overview, the PDR requires each individual to have 5 KPIs agreed at the beginning of 2004. The KPIs should be specific and measurable and linked to the Balanced Scorecard. Each KPI needs to be weighted (out of 100%) according to its importance relative to other KPIs. In this way excelling at your highest priority KPI, which has the heaviest weighting, will drive a bigger award. At least one of the KPIs should be linked to a personal development objective. At the beginning of 2005, a structured performance review will be conducted to determine how well individuals performed against their KPIs in 2004.

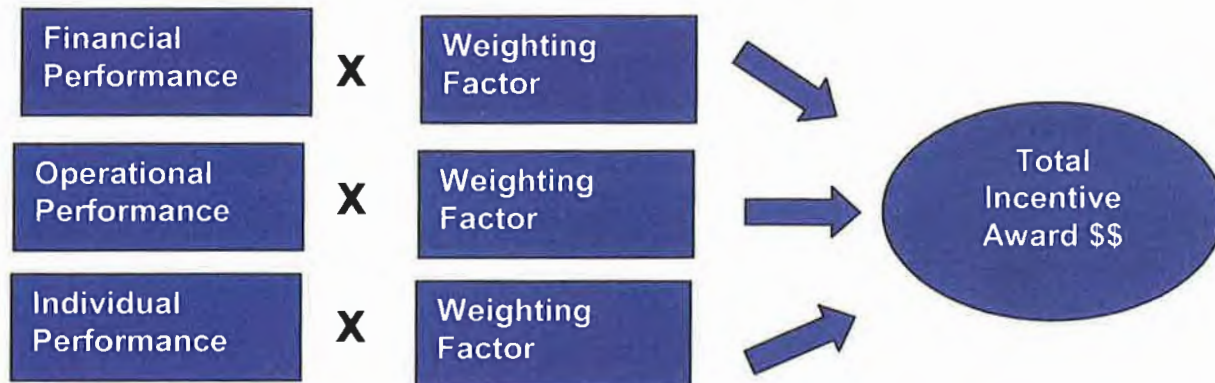
The percentage amounts paid for varying levels of achievement against each KPI should be as follows:

Performance Category	Percent Amounts
• Target not achieved	0 %
• Target partially achieved	25%
• Target largely achieved	75%
• Target fully achieved	100%
• Target exceeded	Up to 120%

Percentages other than these are possible. However, percentages must be expressed in 5% increments (so for example 50% would be a valid scoring, 51% would not). When targets are exceeded a percentage of up to 120% can be defined. This should be used only in cases of exceptional and outstanding performance against KPIs. If an individual received a "too soon to rate" on their PDR they would not be eligible for an AIP award.

How Your Payout Is Determined

At the end of the year, the amount for each component is based on performance against each goal within the component and its relative weighting. Here is a simplified way to think of it.



Target Bonuses

As part of American Water's alignment with RWE's incentive processes, the focus of the bonus communication in the future will be on "target bonus." Target bonus is defined as the bonus paid at 100% for both company and individual awards. This means business plan is achieved for the company and operational element, and the employee has met his/her objectives for the individual element.

It is theoretically possible in the design to generate a combination of company and individual performance that would allow greater bonuses than the agreed maximums. However, the Company will cap the awards at a maximum percentage. The following example will illustrate how the award is calculated.

EXAMPLE:

Regional Employee (other than a Regional Managing Director or their direct report) with an AIP target of 17.3% and 11.5% of their base pay. Example illustrates 100% achievement on each AIP performance component and how it totals each employee's AIP Target. Since it is possible to exceed 100% of each AIP component the company has established a maximum for plan participants. The "Maximum" column illustrates the maximum award for employee 1 and employee 2. ⁽¹⁾ Meet Business Plan + 100% of personal KPIs met. ⁽²⁾ Maximum is defined as exceeding Business Plan

	60% Financial Component		25% Operational Component	15% Individual Component	AIP Target ⁽¹⁾	Maximum ⁽²⁾
	Value Added	Free Cash Flow I	Operational	Individual		
Emp. 1	5.2%	5.2%	4.3%	2.6%	17.3%	22.5%
Emp. 2	3.5%	3.5%	2.9%	1.7%	11.5%	15.0%

⁽¹⁾ Meet Business Plan + 100% of personal KPIs met

⁽²⁾ Maximum is defined as exceeding Business Plan

Adjustments for uncontrollable events

The financial data included in the appendices has been prepared on the basis of the business plans agreed in 2003, using the assumptions set at that time. As in previous years, the actual results used for assessment will be amended to reflect the impact of events that are not considered to be within the control of local management. Any such amendments will require the explicit approval of the Water Division Finance Director, and where material the Board of RWE Thames Water plc, whose decision will be final. The following items are those most likely to be considered for amendment:

- The impact of movements in foreign exchange rates
- The impact of changes in intra-group recharges
- Disposal/acquisition of businesses not anticipated in the business plan, but subsequently mandated by the Board of Directors

Award Payments

To be eligible to receive an AIP award, you must be actively employed at the end of the plan year for which the award is earned. However, in case of disability, retirement, layoff or death during the plan year, a prorated award based on full months' participation in the plan may be payable. Note that no AIP awards are payable if termination is for cause.

If you become eligible to join the AIP during a plan year, any payout for that year will be prorated to reflect the number of full months you participated in the plan.

Awards are usually determined and paid in cash as soon as practical after RWE's release of financial results. Payments will be made by the end of the first quarter of the following year. Appropriate taxes will be withheld from awards.

The American Water Board reserves the right to determine whether incentives are payable to any individual or group of individuals. The Board may withhold all incentive payments in exceptional circumstances, such as failing to reach minimum financial goals. Individuals with poor performance will not be eligible to receive an incentive award.

Rewarding Achievement

Our AIP goals are challenging, but with your focus and contributions and effective teamwork, they can be achieved. Remember, your individual results do matter; our overall performance is the collective results of all AIP participants.

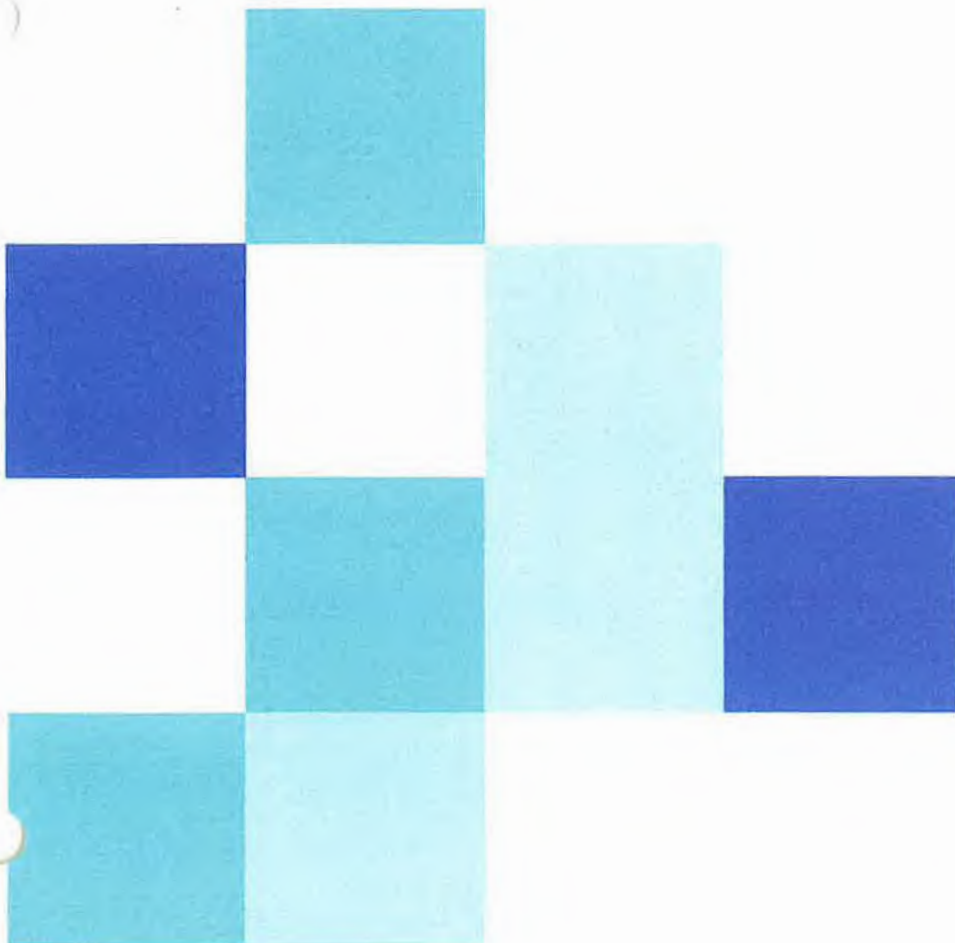
It's important that you clearly understand your goals, how we're performing against the goals, and how the AIP works so you know how you personally affect our performance. Be sure to talk to your manager or your local HR representative if you have questions.

This brochure describes the 2004 American Water Annual Incentive Plan. The Plan Administrator, whose decisions will be final and binding, will determine interpretations of the Plan. The Company reserves the right to amend, modify, or discontinue the Plan during the plan year or at any time in the future. Participation in the Plan does not convey any commitment to ongoing employment. If there are any differences between the information contained here and the Plan Document, the Plan Documents will govern.



The 2004 Annual Incentive Plan Questions and Answers

April 2004



Questions and Answers

Here are answers to a number of questions you may have about the 2004 Annual Incentive Plan (AIP). If you have additional questions after reading this, please see your manager or local HR representative.

Background and Rationale for the 2004 AIP

Why is American Water introducing a revised annual incentive plan?

Participants need to feel that they can directly affect or influence their goals. We want to make sure that the performance measures and the goals are meaningful to participants: the revised plan addresses that. As part of a global organization, we are moving toward practices that are consistent with RWE around the world.

When is the 2004 revised AIP effective?

The plan was effective on January 1, 2004. The performance year is January 1 through December 31.

How does the plan affect participants?

We expect the redesigned plan to provide a greater opportunity for excellence to be rewarded. The financial components will no longer be based on net debt and operating results. Further, if only one of the financial components is met – Value Added and Free Cash Flow 1 – there may possibly be a payment under the plan.

Awards continue to be based on actual base salary as of December 31 of the plan year.

Additionally, the plan reinforces line of sight between participants and the results on which payouts are based. All three components (financial, operational and individual) will have goals that can be directly impacted or influenced by participants.

What is meant by “business unit” in the AIP plan?

The business unit is the company entity that will be used for the basis for AIP plan. For individuals that work in Voorhees office, Shared Services and Belleville Lab, AIP results will be based on the Americas Region. For employees who work in one of the four Regional centers (Central, Northeastern, Western, Southeastern) the AIP measures will be based on results for that region. For individuals in regulated businesses below the Regional levels the results will be based on operating company performance (e.g., California-America, Missouri-American, Pennsylvania-American, etc.)

Eligibility

Who is eligible for the 2004 incentive plan?

All full-time management, professional and technical employees (exempt from overtime) are eligible to participate in the AIP.

Eligible employees seconded from RWE/Thames Water will participate in the plan for the duration of their secondment.

What other eligibility criteria are there?

Eligible employees who join American Water before September 30 of a plan year (January 1 – December 31) are also eligible to participate in the plan on a prorated basis.

In the event of a participant's disability, retirement, layoff or death during the year, a prorated award may be paid, based on the participant's full months of AIP participation.

Measures and Goals**Why did we select Value Added and Free Cash flow 1 as AIP financial measures?**

These measures are the most critical gauges of our business success and are consistent with RWE across the globe.

How do we define Value Added?

- An established measure which reflects the contribution made by a business unit to the Group, relative to its cost of capital
- It is calculated using operating result and operating assets

How do we define Free Cash Flow 1?

- An important operating figure that is also linked to net debt performance.
- It is defined as the cash flow from operating activities (after interest and tax) plus capital expenditure. It does not include the impact of financial restructuring or any impact of acquisitions or disposals.

What does "volatility" mean?

Volatility is the anticipated fluctuation in the business results. Some businesses have cycles with very high and low spikes in performance. These types would be considered to "high" volatility. Other businesses have fairly even and stable business cycles. These would be considered to have "low" volatility.

How will measurements and targets be established for Customer Service, Environmental and Health and Safety components in the AIP plan?

The company is currently developing a common approach to support these key measures. As they are completed, further information will be distributed to employees.

What are KPIs?

KPI is an abbreviation for Key Performance Indicator. KPIs are individual performance objectives that are linked to the company balanced scorecard. All individual KPIs will be established based on the overall American Water and Regional scorecards to ensure that employees have work objectives that link back to the overall objectives of the company.

The plan requires that one KPI be linked to a personal development objective, what would be considered an appropriate personal development objective?

For those individuals who've participated in a PDI assessment, a personal development objective could be one of the development needs listed in the feedback report. For those not participating in the PDI assessment it could be based on development needs identified in the new Behavioral Dictionary. For instance, Analysis and Problem-Solving skills may be key for some employees to meeting performance targets. In a case, where they do not have strong

performance in this area, a KPI could be established, which assists the individual develop better overall performance in this behavior, utilizing descriptions from the Behavioral Dictionary.

Example:

Development Needed: Employee needs to strengthen ability to analyze and resolve business issues. Asking probing questions to get to the root of a situation or problem and make decision based on critical reasoning.

Development Action: Prior to making decisions, gather further information on best practices and industry trends. Ask probing questions to get to the root of the situation or problem. Identify appropriate options and potential benefits and make recommendations based on reliable data and reasoning.

How are financial goals set?

The EMT approves the strategic business plan, which determines annual business plans for the units.

How are operational measures and goals established?

Operational goals and measures are also established by the EMT, working with local management to align the operational goals with business unit targets.

How likely are we to achieve targeted performance levels?

Targets are definitely challenging, but achievable if we maintain our focus. Our AIP goals are directly in our "line of sight" and to a large extent controllable by each of us.

How will my individual AIP goals be set?

You will work with your manager to agree on KPIs that directly support the overall company objectives.

Could my KPIs change during the year?

Possibly. The process involves regular review of your progress against your KPIs, so this would be covered in those reviews.

How were the weightings set?

Weightings reflect two sets of considerations:

- The first is the relative mix of financial, operational and individual goals as a component of your payout opportunity. Generally, the higher you are in the organization, the more heavily weighted your financial goals are. Achievement of our financial goals essentially allows us to make payouts under the plan. At the same time, the variable weighting of financial, operational and individual goals ensures that we appropriately balance our ability to pay with the recognition of group operational and individual accomplishments for which it's difficult to precisely quantify the impact on the bottom line.
- The second is the financial performance of your business unit. Your AIP target, which is 100% of plan is based on your business unit.

Why do the weightings differ for participants?

One of our key incentive principles is that participants should be measured on performance they can directly influence. The different weightings reflect this.

If we have a really strong year, will the goals be set that much higher next year?

To build long-term value, we need to focus on continuously improving our results. That is the reality of our business environment. We will set goals, but when we do achieve these challenging goals, we all share in the success through the AIP.

Award Potential**Do incentive award opportunities change for 2004?**

Award opportunities are still based on the participant's role. However, because the 2004 AIP bases individual award opportunities on the participant's actual base salary (rather than salary midpoint), participants with base salaries higher than the midpoint will now have a higher target; those with base salaries below the midpoint will have proportionately lower target opportunities. On the other hand, we feel that the updated plan design increases the likelihood of award payments.

How much will my own performance really affect my actual incentive award?

Individual performance has a meaningful effect on incentive awards. It's one component of your total opportunity. Depending on your role, it accounts for 15%-30% of your target incentive opportunity.

In cases of poor individual performance, no incentive award will be paid.

If I'm promoted during the year, will my award opportunity change?

It depends. If you are promoted to a role with a higher award percentage, then your award opportunity will be prorated based on the number of full months at the higher level.

If not, then you will continue to have the same award opportunity.

If I do well against my KPIs, but we don't make our operational or financial goals, will I still receive the portion of my award opportunity based on KPIs?

Possibly. Keep in mind that the American Water Board reserves the right to pay no incentive awards under certain circumstances, such as failing to meet financial targets.

How do the performance ratings in the PDR process link to the Performance Categories in the AIP plan?

The following is a performance rating equivalency chart. The AIP plan has two types of progressing categories to recognize gradations in performance.

PDR Rating	AIP Performance Category	Percentage Amounts
Does Not Meet	Target not achieved	0% - 20%
Progressing	Target partially achieved	25% - 70%
	OR Target largely achieved	75% - 95%
Meets Expectation	Target fully achieved	100%
Exceeds Expectation	Target exceeded	105% - 120%

Award Payments

Will a participant who becomes eligible for the AIP during the year be eligible for a prorated award?

Yes. If hired by September 30 of the plan year, eligible participants will participate on a prorated basis.

When will awards be distributed?

Typically, awards are determined and paid in cash as soon as practical after the end of the incentive plan year (December 31). Payments will be made by the end of the first quarter of the following year.

What happens if a participant leaves during the year?

A participant must normally be actively employed for the full incentive plan year (January 1 – December 31) for any award to be payable. However, in the case of the disability, retirement, layoff or death of a participant, a prorated award based on the number of full months' participation in the plan may be payable.

Will awards be taxed?

Appropriate taxes will be withheld from AIP awards for American nationals and expatriates.

What happens if there's a change in control?

In the event of a change in control, all awards that have been earned by participants will become payable on a pro-rated basis. The pro-rated award will be based on the greater of the awards earned for performance calculated through the quarter ending prior to the change in control event or target award amounts. All payments will be made in cash.

Communication

Who do I contact if I have questions about the program?

You should contact your manager first. If you still have questions after that, you can contact your local HR representative.

When will I get updates on business and operational results during the year?

Updates will be provided quarterly by your manager.

How and when will I get feedback on my KPIs?

You should meet formally with your manager for an early first quarter performance discussion, mid year and again early first quarter of 2005, but you should also be receiving informal feedback and coach from your manager throughout the year.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kurt Kogler

- 43.** Refer to the Rowe Testimony, page 9, lines 5–6, regarding recovery of employee incentive compensation costs in rate base. Also, refer to the Kogler Testimony, the Direct Testimony of Robert V. Mustich, and the Direct Testimony of Timothy Willig, generally. Finally, refer to Kentucky-American's response to Staff's First Request, Item 33, 2018 Annual Performance Plan. State whether the forecasted employee incentive pay being awarded under Kentucky-American's 2018 Annual Performance Plan is similar to the plan whose cost the Commission disallowed in Case No. 2010-00036.¹
- a. If the incentive plan is the same, explain why Kentucky-American proposes to include its costs in the determination of rates in this proceeding.
 - b. If the incentive plan differs from that reviewed in Case No. 2010-00036, provide a comparative analysis listing the similarities and differences between the two incentive plans. Include detailed discussions for each similarity and difference noted in Kentucky-American's comparative analysis.
 - c. Provide definitive quantitative evidence that demonstrates a benefit to ratepayers from Kentucky-American's short-term and long-term employee incentive compensation plans.

Response:

- a. The current performance plan, while similar, is not the same as the 2010 plans. Please see the Company's response to Item 34 of this request for an explanation of why KAWC proposes to include the costs in the determination of rates in this proceeding.
- b. Please see attachment for a copy to the Company's 2010 plan brochures. The Company's 2018 plan brochure is attached to the Company's response to Item 33 of Staff's First Request. The 2019 plan brochure has not yet been released. Please see the Company's response to Item 42 of this request for additional information regarding plan differences.
- c. Please see the Company's response to Item 34 of this request.

¹ Case No. 2010-00036, *Application of Kentucky-American Water Company for an Adjustment of Rates Supported by a Fully Forecasted Test Year* (Ky. PSC Dec. 14, 2010), Final Order at 29-33.



AMERICAN WATER

2010 Annual Incentive Plan Highlights Brochure



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THE 2010 AMERICAN WATER ANNUAL INCENTIVE PLAN

Your Performance — Your Award

At American Water, your performance counts. We rely on our employees' knowledge and skills to help the Company achieve its business objectives.

The American Water 2010 Annual Incentive Plan (AIP) is designed to give eligible exempt employees an annual opportunity to earn a cash award that recognizes and rewards their contributions to the Company's success. We continue to make adjustments to the AIP design to reinforce the link between Company and individual performance and award payouts. This means that Company and individual performance are both taken into account to determine cash awards under the plan.

Keeping up our momentum in 2010:

- We are continuing the funding approach that was used in 2009, which directly ties the amount of available cash for AIP payouts to Company performance against specific metrics. AIP funding for all eligible, exempt employees will depend on the Company's achieving its financial and non-financial goals.
- Your **individual performance continues to play a large role in determining the amount of your payout.** Employees who exceed their performance targets could receive higher payouts. Conversely, employees who under-perform and do not meet their performance targets could receive lower payouts or no payout at all. In short, *your* performance directly impacts the amount of *your* award.

The 2010 AIP is designed to challenge and motivate you to perform at your highest level, and promote the creation of value to the customer and shareholder. Read this brochure to learn about how the 2010 plan works and what it means for you.

The 2010 AIP	
Elements of the Program	
<ul style="list-style-type: none"> ■ AIP award pool funding is based on overall corporate performance against specific financial and non-financial goals (represented by the Corporate Multiplier), then allocated across organizational groups/functional areas — at senior management's discretion — depending on organizational group/functional area results. <ul style="list-style-type: none"> ○ AIP funding for all eligible exempt employees depends on the Company achieving its financial as well as non-financial goals. ○ A pre-determined financial threshold for Company performance must be met in order for funding and any award to be provided under the AIP. ■ Individual award payouts will be based on individual performance against specific goals (represented by the Individual Performance Factor) and paid from available organizational group/functional area funding. ■ For 2010, the Individual Performance Factor range is 0%-150%. Individual payouts will be capped at 150% of AIP target award. 	<ul style="list-style-type: none"> ■ Award opportunity (Target Award) is expressed as a percentage of base salary. (See Attachment B). <ul style="list-style-type: none"> ○ Actual payout may be lower or higher than target depending on Company and individual performance against specific goals. ■ Individual performance is assessed by your manager and measured against your pre-determined performance goals. ■ Your AIP will be distributed as a cash award in March. <ul style="list-style-type: none"> ○ You must be actively employed with American Water on the date awards are made to receive your 2010 AIP payout. ○ If you are disabled, retire, or die, you or your beneficiary may be eligible to receive an award prorated to reflect your service during the plan year. ■ If actual Company performance differs from forecasted Company performance, the American Water Board or its Designee has the right to adjust the award determination(s) and/or award payouts(s) prior to final approval.

Eligibility

- You are eligible for an AIP award opportunity if you are a regular, full-time exempt employee of American Water.
 - Regular, full-time exempt employees who join American Water on or before September 30, 2010 are also eligible to participate in the AIP on a prorated basis.
 - Employees transferred from nonexempt to exempt status on or after September 30th are not eligible in the current plan year.

- You must be an active employee with American Water on the date the payout is made in order to receive the award. In certain circumstances, such as disability, retirement or death, an award may be made — prorated to reflect your service during the plan year.
- If you are promoted during the plan year to a position with a *higher* AIP target level, or if you are reclassified/transferred to a position with a *lower* AIP target level, your award payout will be based on your new target level as of December 13, 2010.
- If you transfer from exempt status to nonexempt status during the current plan year or your job was reclassified to nonexempt status, you are not eligible for a 2010 AIP award.
- If your performance rating is “Unacceptable” or “Too Soon to Rate,” you will not receive a payout.

Why Is the Plan Based on Individual Performance?

Since the value (as reflected in our share price and our return to shareholders) and success of our business depend on the achievement of annual Company and individual performance goals, American Water recognizes the need to differentiate and reward the performance of employees who enable us to reach these goals. The 2010 AIP is designed to ensure that award payouts are directly tied to measurable contributions — both Company and individual — to American Water’s success.

DETERMINING AIP AWARDS

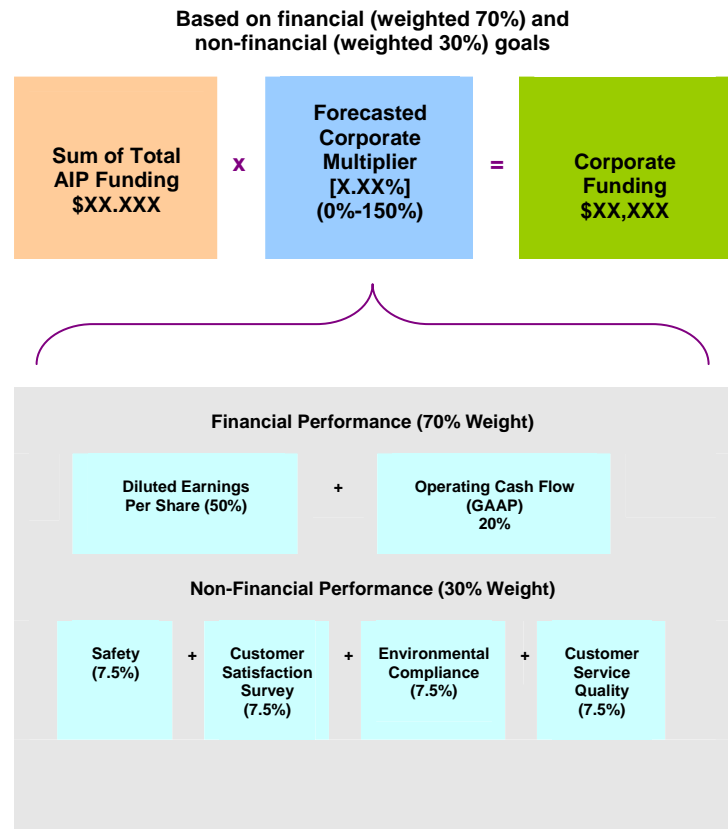
AIP award payouts depend on individual performance; they also depend on overall corporate performance and organizational group/functional area results (which determine award pool funding).

AIP awards will be determined according to the following three-step process:

Step 1:	Establish initial award pool based on overall corporate performance
Step 2:	Allocate overall corporate funding to organizational groups/functional areas, and adjust specific organizational group/functional area funding to reflect results
Step 3:	Determine AIP award based on individual performance; awards are paid from available organizational group/functional area funding

Step 1: Establish initial award pool based on overall corporate performance

Each year, American Water establishes funding for the AIP award pool. In 2010, the funding will be directly tied to Company performance and represented by the **Corporate Multiplier**. The Corporate Multiplier can range from 0% to 150% depending on how well the Company performed against the financial and non-financial goals described below. Note that a pre-determined **threshold** for Company performance - **2010 Diluted Earnings Per Share (EPS) must be at least 85% of target** - must be met in order for funding and any award to be provided under the AIP for Operating Cash Flow (20%) and Non-Financial Performance Factors (30%). 2010 Diluted Earnings Per Share (EPS) must be at least 90% of target for any EPS funding (50%) and award to be provided under the AIP.



- **Financial Metrics (Weighted 70%) (See Attachment A)**

- *Diluted Earnings Per Share (50%)* is a widely tracked measure of financial performance/profitability, and is calculated as follows:

$$\begin{array}{r}
 \text{Net Income to Common Stockholders} \\
 \div \\
 \text{Average Outstanding Shares (including dilutive securities such as} \\
 \text{stock options)} \\
 = \\
 \text{Diluted Earnings per Share}
 \end{array}$$

- *Operating Cash Flow (GAAP) (20%)* reflects the amount of cash generated from our operations and is used as an additional measure of profitability. Operating cash flow is calculated as follows:

$$\begin{array}{r}
 \text{Net Income} \\
 + \\
 \text{Depreciation and Amortization} \\
 - \\
 \text{Deferred Expenses} \\
 +/- \\
 \text{Changes in Payables and Receivables} \\
 = \\
 \text{Operating Cash Flow}
 \end{array}$$

- **Non-Financial Metrics (Weighted 30%)***

- Environmental Compliance Notices of Violation (NOVs) (7.5%)
 - Safety Performance (7.5%)
 - Customer Satisfaction Survey (7.5%)
 - Customer Service Quality Survey (7.5%)

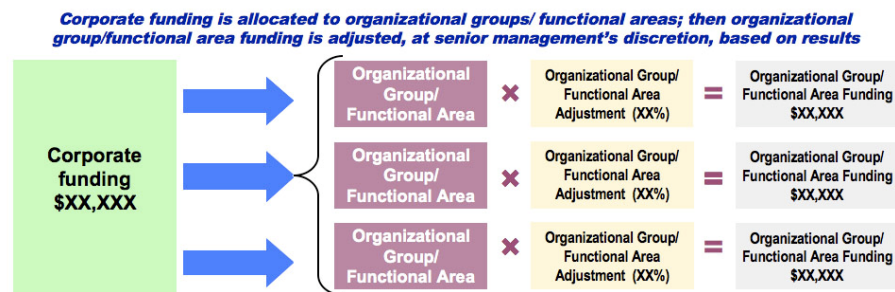
**These outcomes are based on a combination of surveys, end-of-year results, data and other annual reports (see Attachment A at the back of this brochure).*

Please note that AIP funding for all employees will depend on how well the Company achieves its financial goals as well as non-financial goals. A pre-determined financial threshold for Company performance must be met in order for funding and any award to be provided under the AIP.

The financial and non-financial metrics are added together to determine the Corporate Multiplier. So, even if certain metrics are not achieved, the funding may be reduced, but not eliminated altogether. However, if the Company's financial performance does not meet the threshold, the Corporate Multiplier will be reduced to zero, which would eliminate your award payout (as indicated in the examples on page 10). The Corporate Multiplier (and thus funding for payouts) may be adjusted to take into account "uncontrollable events" including — but not limited to — severe weather conditions that significantly impact financial results (i.e., hurricanes), impairment charges, dissolution or acquisition of businesses or costs related to public offerings.

Step 2: Allocate overall corporate funding to organizational groups/functional areas, and adjust specific organizational group/functional area funding to reflect results

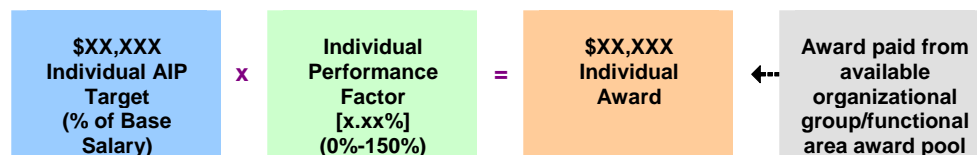
Once the overall corporate funding is determined as described under Step 1, senior management will allocate the Corporate funding to American Water's organizational groups and functional areas. The funding for each organizational group/functional area may be increased or decreased, at senior management's discretion, to reflect specific organizational group/functional area results.



Step 3: Determine individual AIP award based on (a) individual performance, and (b) available organizational group/functional area funding; awards are paid from available organizational group/functional area award pool

Your **AIP target award** (i.e., your award opportunity) is based on your job with the Company and is expressed as a percentage of your base salary. Your actual award payout may be higher or lower than target depending on whether individual and Company performance goals have been met, and your organizational group's/functional area's results. Contact your manager for information on your individual AIP Target Award.

Your individual performance factor is based on (a) your performance against specific targets, and (b) the amount of organizational group/functional area funding available



The sum of individual awards for a specific organizational group/functional area must not exceed the funding allocated to that organizational group/functional area

The **Individual Performance Factor** represents how well you achieve your annual individual performance goals. Your Individual Performance Factor (IPF) can range from 0% to 150%, depending on your performance for the plan year and the amount of organizational group/functional area funding available. This performance factor will then be multiplied by your Target Award to determine your 2010 AIP award payout. Individual payouts will be capped at 150% of AIP target award.

Individual AIP awards are then paid from the available organizational group/functional area award funding, which may impact the original (IPF%) determination. The sum of all individual awards within a given organizational group/functional area must not exceed its allocated pool of dollars.

WHAT THE 2010 AIP MEANS FOR YOU

Performance Ratings

Most people are motivated to do their best; therefore the better you perform, the greater your potential award will be under the Plan. It is your responsibility to maximize your award opportunity by achieving or exceeding your goals.

Each year, you and your manager identify four to six high priority and challenging performance targets, which represent where you can directly impact the Company's success. These performance targets and their weightings should be specific, measurable and aligned with the Company's performance targets. During your year-end performance review, you and your manager will discuss how well you performed against the established targets, and rate your performance using one of the following performance ratings:

2010 Performance Rating Scale	
Rating	Description
Exceptional	Contributions are widely recognized as extraordinary. Results far exceed all defined expectations, producing important and substantial impact on the Company, Division, Operating Company, Line of Business or Function.
Significant	Contributions are widely recognized as distinguished. Results exceed all or most expectations, producing a tangible and material impact on the Company, Division, Operating Company, Line of Business or Function.
Commendable	Contributions are widely recognized as meaningful. Results meet, and in some cases exceed expectations, producing a positive and desirable impact on the Company, Division, Operating Company, Line of Business or Function.
Adequate	Contributions are widely recognized as limited. Results generally meet but in some cases fall slightly short of expectations, producing inconsistent and marginal impact on the Company, Division, Operating Company, Line of Business or Function.
Unacceptable	Contributions are widely recognized as unsatisfactory. Results fall considerably short of expectations, producing negligible or no impact on the Company, Division, Operating Company, Line of Business or Function.
Too Soon to Rate	Contributions cannot be measured at this time because more time is needed to see a result.

Later, during the AIP process, your manager will use your rating to determine your Individual Performance Factor. Depending on how you performed during the year, you could potentially earn a higher payout than in previous years — or you could earn a lower payout or no payout at all (as the examples on the following page demonstrate). In other words, the AIP design gives you more power to impact the size of your award. It also means that you are more accountable for meeting your goals.

Award Payout Examples

Let's calculate possible award payouts for a sample AIP participant, under four possible scenarios:

AIP Participant Assumptions				
Salary Level	L07			
Annual Base Salary	\$90,000			
Individual AIP Target	\$13,500 (15% of Base Salary)			
Total AIP Funding *	\$20,000,000			
Total AIP Funding for Organizational Group*	\$2,000,000			
* The total is the sum of the target awards for the eligible employees.				
	Performance			
	Scenario 1	Scenario 2	Scenario 3	Scenario 4
■ Company	Above Target	Target	Threshold	Below Threshold
— Financial Performance Factor	1.39	0.94	0.50	0.00
— Non-Financial Performance Factor	0.77	1.12	0.50	0.00
■ Individual	Adequate	Exceptional	Significant	Commendable
— Individual Performance Factor	0.25	1.50	1.05	.90

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
STEP 1: Establish corporate funding based on overall corporate performance				
Total of AIP Targets (A)	\$20,000,000	\$20,000,000	\$20,000,000	\$20,000,000
Financial Performance Factor (i) (70% weight)	$1.39 \times 0.70 =$ 0.97	$0.94 \times 0.70 =$ 0.66	$0.50 \times 0.70 =$ 0.35	$0.00 \times 0.70 =$ 0.00
Non-Financial Performance Factor (ii) (30% weight)	$0.77 \times 0.30 =$ 0.23	$1.12 \times 0.30 =$ 0.34	$0.50 \times 0.30 =$ 0.15	$0.00 \times 0.30 =$ 0.00
i + ii = Corporate Multiplier (B)	1.20	1.00	0.50	0.00
A × B = Corporate Funding	$\$20,000,000 \times 1.20 =$ \$24,000,000	$\$20,000,000 \times 1.00 =$ \$20,000,000	$\$20,000,000 \times 0.50 =$ \$10,000,000	$\$20,000,000 \times 0.00 =$ \$0
STEP 2: Allocate overall corporate funding to organizational groups/functional areas; adjust specific organizational group/functional area funding to reflect results				
Organizational Group Pool (C) (Allocated from corporate funding)	\$2,400,000	\$2,000,000	\$1,000,000	\$0
Organizational Group Adjustment (D)	1.00 (Target)	.80 (Below Target)	1.20 (Above Target)	1.00 (Target)
C × D = Organizational Group Pool (adjusted based on results)	$\$2,400,000 \times 1.00 =$ \$2,400,000	$\$2,000,000 \times 0.80 =$ \$1,600,000	$\$1,000,000 \times 1.20 =$ \$1,200,000	$\$0 \times 1.00 =$ \$0
STEP 3: Determine individual award based on individual performance and available organizational group/functional area funding; awards are paid from available organizational group/functional area award pool				
Individual AIP Target (E)	\$13,500	\$13,500	\$13,500	\$13,500
Individual Performance Factor (F) (Range of 0 – 1.50)	0.25 (Adequate)	1.50 (Exceptional)	1.05 (Significant)	.90 (Commendable)
E × F = Individual Award	$13,500 \times 0.25 =$ \$3,375 (25% of AIP target)	$13,500 \times 1.50 =$ \$20,250 (150% of AIP target)	$13,500 \times 1.05 =$ \$14,175 (105% of AIP target)	$13,500 \times .90 =$ \$12,150 However, payout will be \$0, since award pool = \$0

As you can see, both Company and individual performance can significantly impact your final payout. Also, remember that the sum of individual awards for a specific organizational group/functional area must equal the funding allocated to that organizational group/functional area.

Note: If actual Company performance differs from forecasted Company performance, the American Water Board or its Designee has the right to adjust the award determination(s) and/or award payout(s) prior to final approval.

Please discuss the AIP with your manager to ensure you clearly understand how the formula works and how your performance impacts your potential award payout.

Receiving Your AIP Award

Awards will be paid in cash in March of the year following the year in which they are earned. If you're eligible for an award payout, please keep in mind that:

- The payout will be based on your annual base salary as of December 13, 2010 and subject to all federal, state and local income tax withholdings.
- The American Water Board, or its Designee, reserves the right to determine whether awards are payable to any individual or group of individuals; the Board may withhold all award payouts in certain circumstances.

Remember, it's your performance — and your award: The contributions you make to American Water's success throughout the year ultimately impact the size of your payout. Be sure to carefully review this brochure; then speak with your manager about the AIP and about what you can do to improve your performance and share the financial rewards of American Water's success.

FREQUENTLY ASKED QUESTIONS

Question	Answer
<p>How does the plan reward performance?</p>	<p>The AIP allows us to differentiate and reward the performance of employees who contribute to the achievement of the Company's goals. The 2010 AIP directly ties award payouts to measurable contributions (Company, organizational group/ functional area and individual) to American Water's success.</p>
<p>Who is eligible for the AIP?</p>	<p>All regular, full-time exempt employees are eligible to participate. If you join American Water on or before September 30, 2010, you are also eligible to participate in the plan on a prorated basis.</p>
<p>What do I have to do to receive an AIP award?</p>	<p>Any payout will depend largely on your performance, as well as on Company, organizational group/ functional area performance (including financial and non-financial), which determines funding.</p> <p>If your performance is rated "Adequate" or higher, you may receive an award payout — but only if threshold Company performance metrics have been met. If your performance rating is "Unacceptable" or "Too Soon to Rate," you will not receive a payout. To maximize your award opportunity, it's important to meet with your manager to establish meaningful performance goals, then work hard throughout the year to achieve those goals.</p> <p>If actual Company performance differs from forecasted Company performance, the American Water Board or its Designee has the right to adjust the award determination(s) and/or award payout(s) prior to final approval.</p>
<p>How is my AIP target award opportunity determined? How can I find out what it is?</p>	<p>Your AIP target award opportunity is based on your job and expressed as a percentage of your base salary. Please see your manager to learn more about your target award opportunity for 2010.</p>

Question	Answer
<p>How will my AIP award payout be calculated?</p>	<p>The size of the pool which funds your award is determined based on overall corporate performance and adjusted to reflect specific organizational group/functional area results. AIP funding for all eligible employees, will depend on the Company and/or organizational group/functional area achieving its non-financial as well as financial goals. Once individual awards are calculated, they are paid from the organizational group/functional area funding.</p> <p>If actual Company performance differs from forecasted Company performance, the American Water Board or its Designee has the right to adjust the award determination(s) and/or award payout(s) prior to final approval.</p>
<p>What is the minimum and maximum that could be paid under the plan (as a percent of target)?</p>	<p>AIP award payouts can range from zero, to a maximum of an Individual Performance Factor of 150%. Payouts are capped at 150% of AIP target award.</p>
<p>Will I receive an award payout if I meet my individual performance goals but the Company <i>does not</i> achieve minimum (threshold) performance?</p>	<p>No. A pre-determined financial threshold for Company performance must be met in order for funding and any award to be provided under the AIP.</p>
<p>What happens if I leave American Water before I receive my award payout?</p>	<p>To receive the award payout, you must be actively employed with American Water on the date the payment is to be made. If you are disabled, retire, or die during the plan year, you or your beneficiary may be eligible to receive an award, prorated to reflect your service during the year.</p>
<p>What happens if I change job positions within American Water during the plan year?</p>	<p>Your award payout will be based on your base salary and target level percentage as of December 13, 2010.</p>

This brochure is the 2010 American Water Annual Incentive Plan. The American Water Board or its Designee, whose decisions will be final and binding, will determine interpretations of the Plan. The Company reserves the right to amend, modify, or discontinue the Plan during the plan year or at any time in the future. Participation in the Plan does not convey any commitment to ongoing employment.

2010 AIP FINANCIAL PAYOUT CURVE

DILUTED EARNINGS PER SHARE (EPS)

<u>% Target Achieved</u>	<u>% Payout</u>
115%	150%
112%	140%
109%	130%
106%	120%
103%	110%
100%	100%
98%	90%
96%	80%
94%	70%
92%	60%
90%	50%
<90%	0%

OPERATING CASH FLOW

<u>% Target Achieved</u>	<u>% Payout</u>
115%	150%
112%	140%
109%	130%
106%	120%
103%	110%
100%	100%
97%	90%
94%	80%
91%	70%
88%	60%
85%	50%
<85%	0%

2010 AIP NON-FINANCIAL MEASURES

Environmental Compliance

For determining environmental compliance, AW will count Notices of Violation (NOV) for which the Company is responsible as described in the Environmental Non-Compliance Reporting Practice. For 2010 AW will continue to use the NOV target of 21.

NOVs	Award
11	150%
13	140%
15	130%
17	120%
19	110%
21	100%
23	90%
25	80%
27	70%
29	60%
30	50%
>30	0%

Safety Performance

Safety performance will be determined using the total OSHA Recordable Incident Rate (ORIR) for American Water. ORIR measures all injuries and illnesses requiring treatment beyond first aid for every 200,000 hours worked. For 2010 the target has been set at 4.5 which is 15% below the Bureau of Labor Statistics (BLS) Water Utility Average ORIR of 5.3.

ORIR	Award
3.5	150%
3.7	140%
3.9	130%
4.1	120%
4.3	110%
4.5	100%
4.7	90%
4.9	80%
5.1	70%
5.3	60%
5.5	50%
>5.5	0%

2010 AIP NON-FINANCIAL MEASURES

Service Quality

This metric is measured by the Service Quality Survey (SQS) which is conducted throughout the year for customers having had recent contact with an AW Customer Service Representative (CSR), Field Service Representative (FSR) or the web self service system. The score is based on survey question: "Overall, how satisfied were you with the outcome of your service contact?" taking the top two response categories (extremely satisfied or very satisfied) of a 5 point response scale (Extremely Satisfied, Very Satisfied, Somewhat Satisfied, Somewhat Dissatisfied, Very Dissatisfied). The AW target for 2010 is 85%.

SQS %	Award
90	150%
89	140%
88	130%
87	120%
86	110%
85	100%
84	90%
83	80%
82	70%
81	60%
80	50%
< 80	0%

Customer Satisfaction

This metric measures overall customer satisfaction through an annual survey containing the following question, "Overall, how satisfied have you been with (Company Name) in general during the past twelve months", which has a five-point response scale (Extremely Satisfied, Very Satisfied, Somewhat Satisfied, Somewhat Dissatisfied, Very Dissatisfied), response percentages in the top three categories are indicative of overall customer satisfaction levels and a 90% target has been set.

CSS%	Award
95	150%
94	140%
93	130%
92	120%
91	110%
90	100%
89	90%
88	80%
87	70%
86	60%
85	50%
<85	0%

2010 ANNUAL INCENTIVE PLAN TARGETS

EXEMPT POSITIONS	
Grade	AIP %
L5 – L6	20%
L7	15%
L8-L9	10%
L10 – L12	5%

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Robert V. Mustich, Kurt Kogler

- 44.** Provide all studies and analyses that quantify the impact that Kentucky-American's and Service Company's incentive compensation programs have on attracting new employees and employee retention.

Response:

Specific studies and analyses on the impact of incentive (variable) compensation on attracting new employees and employee retention have not been completed.

Willis Towers Watson's 2018 General Rate Case Total Remuneration Study (dated October 26, 2018) indicates short-term variable compensation programs are used by most investor owned utilities and publicly traded general industry companies to help attract, motivate and retain critically skilled employees. Kentucky-American's strategy to provide short-term variable compensation is consistent with the labor market competitors.

Variable compensation is an important management tool and allows management to reinforce measure and reward improvements in efficiency, decreasing waste and boosting productivity. Performance based plans provide employees with monetary recognition on performance factors.

Robert Mustich provided the following summary of Willis Towers Watson's 2018 General Rate Case Remuneration Study (dated October 26, 2018). "Overall, our analysis indicates that Kentucky American Water's total remuneration programs are comparable to and competitive with market practices of other similarly sized utilities and are therefore reasonable. Kentucky American Water, like all the companies it competes with for talent, has to provide a competitive total remuneration opportunity delivered via programs that benefit employees, customers and shareholders. Kentucky American Water attempts to achieve this goal with its balanced and competitive base salary, short-term and long-term variable compensation programs and benefits. My experience working with both utilities and general industry companies and the results of this study included indicate the programs at Kentucky American Water are within a broad range of market norms and are not excessive in design or level of pay."

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Kevin N. Rogers

- 45.** Refer to the Rogers Testimony, page 18, line 23 through page 9, line 2, which states that Kentucky-American identified 152 full-time positions as the appropriate staffing level for Kentucky-American operations. Describe the process used to determine the appropriate staffing level for Kentucky-American.

Response:

KAW frequently evaluates its staffing levels based on business conditions and workload. This evaluation includes planning our annual regulatory work, preventative maintenance and expectations for frequent seasonal shifts in workload based on weather, customer activity and other factors such as construction in our service territory that impact our assets. Additionally, as our organizational makeup changes through retirements, departures or terminations we evaluate the skill sets of our current team and identify new skills and resources needed. We continually strive to balance these needs by reviewing our organizational structure to cost effectively accomplish the work ahead of us and minimize costs to our customer.

Please also see pages 19 line 20 through page 23 line 2 of my testimony for an explanation of why KAWC is increasing its staffing level.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa Schwarzell

- 46.** Refer to the application, paragraph 5, which states that a QIP will result in less frequent general rate cases. Provide a comparative analysis with detailed discussion and supporting workpapers and assumptions to corroborate the contention that a QIP will result in less frequent general rate cases.

Response:

Please refer to response to Item 57 of this same request. All things being equal, KAWC should be able to extend the period between general rate case filings with the implementation of a QIP. For example, the Company will not need to file a general rate case to recover increased investment for an accelerated infrastructure replacement program but may need to file a general rate case for revenue shortfalls in an environment of falling sales.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Brent E. O'Neill

- 47.** Refer to the O'Neill Testimony, pages 22–24, which cites several studies from the American Water Works Association. Provide any studies addressing the current state of water and wastewater infrastructure specific to Kentucky-American.

Response:

Attached please find following studies in two attachments:

Attachment AWWA that includes the following AWWA reports referenced in pages 22-24 of O'Neill Testimony:

1. AWWA, 2001. *Dawn of the Replacement Era: Reinvesting in Drinking Water Infrastructure*. AWWA, Denver.
2. AWWA, 2012. *Buried No Longer: Confronting America's Water Infrastructure Challenge*. AWWA, Denver.

Attachment KAWC that includes the following studies/reports commissioned by Kentucky-American:

1. Condition Assessment and Long Term Plan, HDR, November 2015
2. KRS-1 Water Treatment Plant Treatment Master Plan, Hazen, April 2017
3. KAWC Hydraulic Efficiency Study – Treatment Plant High Service and finished Water Facilities, HDR, July 2016
4. KRS-1 Low Service Pumps and Transfer Pumps Evaluation, HDR, November 2018
5. KRS-1 Residuals Design Development Report, Stantec, March 2018

This attachment is confidential and is being provided pursuant to a petition for confidential protection.

Dawn of the Replacement Era

Reinvesting in Drinking Water Infrastructure

**An
Analysis
of Twenty
Utilities'
Needs for
Repair and
Replacement
of Drinking Water
Infrastructure**



American
Water Works
Association

Dedicated to Safe Drinking Water

***A Study Sponsored by
The AWWA Water Industry
Technical Action Fund***

May 2001

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Reinvesting in Drinking Water Infrastructure

Dawn of the Replacement Era

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Reinvesting in Drinking Water Infrastructure

Dawn of the Replacement Era

EXECUTIVE SUMMARY

The importance of safe drinking water to public health and the nation's economic welfare is undisputed. However, as we enter the 21st Century, water utilities face significant economic challenges. For the first time, in many of these utilities a significant amount of buried infrastructure—the underground pipes that make safe water available at the turn of a tap—is at or very near the end of its expected life span. The pipes laid down at different times in our history have different life expectancies, and thousands of miles of pipes that were buried over 100 or more years ago will need to be replaced in the next 30 years. Most utilities have not faced the need to replace huge amounts of this infrastructure because it was too young. Today a new age has arrived. We stand at the dawn of the replacement era.

Extrapolating from our analysis of 20 utilities, we project that expenditures on the order of \$250 billion over 30 years might be required nationwide for the replacement of worn-out drinking water pipes and associated structures (valves, fittings, etc). This figure does not include wastewater infrastructure or the cost of new drinking water standards. Moreover, the requirement hits different utilities at different times and many utilities will need to accelerate their investment. Some will see rapidly escalating infrastructure expenditure needs in the next 10–20 years. Others will find their investment decisions subject to a variety of factors that cause replacement to occur sooner or at greater expense, such as urban redevelopment, modernization, coordination with other city construction, increasing pipe size, and other factors.

Overall, the findings confirm that replacement needs are large and on the way. There will be a growing conflict between the need to replace worn-out infrastructure and the need to invest in compliance with new regulatory standards under the Safe Drinking Water Act. In addition, the concurrent demands for investment in wastewater infrastructure and compliance with new Clean Water Act regulations, including huge needs for meeting combined sewer overflow (CSO) and stormwater requirements, will compete for revenue on the same household bill.

Ultimately, the rate-paying public will have to finance the replacement of the nation's drinking water infrastructure either through rates or taxes. AWWA expects local funds to cover the great majority of the nation's water infrastructure needs and remains committed to the principle of full-cost recovery through rates. However, many utilities may face needs that are large and unevenly distributed over time. They must manage a difficult transition between today's level of investment and the higher level of investment that is required over the long term. Facing an inexorable rise in infrastructure replacement needs driven by demographic forces that were at work as much as 100 years ago, compounded by the negative effects of changing demographics on per-capita costs in center cities, many utilities face a significant challenge in keeping water affordable for all the people they serve.

Meeting this challenge requires a new partnership in which utilities, states, and the federal government all have important roles. Utilities need to examine their rate structures to assure long-term viability. States need to streamline their programs. And the federal government needs to significantly increase assistance for utilities.

To better understand this problem, the American Water Works Association undertook studies of 20 large and medium utilities. The findings and recommendations of this report provide the basis for this new partnership to achieve the goal to which we all aspire—the provision of safe and affordable drinking water for all Americans.

Findings:

- Water utilities must make a substantial reinvestment in infrastructure over the next 30 years. The oldest cast iron pipes, dating to the late 1800s, have an average life expectancy of about 120 years. Because of changing materials and manufacturing techniques, pipes laid in the 1920s have an average life expectancy of about 100 years, and pipes laid in the post-World War II boom can be expected to last about 75 years. The replacement bill for these pipes will be hard on us for the next three decades and beyond.
- Most utilities are just now beginning to face significant investments for infrastructure replacement. Indeed, it would have been economically inefficient to make large replacement investments before now. The utilities we studied are well managed and have made the right decisions. But the bills are now coming due, and they loom large.
- On average, the replacement cost value of water mains is about \$6,300 per household in today's dollars in the relatively large utilities studied. If water treatment plants, pumps, etc., are included, the replacement cost value rises to just under \$10,000 per household, on average.
- Demographic shifts are a significant factor in the economics of reinvestment. In some older cities, the per-capita replacement value of mains is more than three times higher than the average in this sample due to population declines since 1950.
- By 2030, the average utility in the sample will have to spend about three and a half times as much on pipe replacement due to wear-out as it spends today. Even so, the average utility will also spend three times as much on repairs in that year as it spends today, as the pipes get older and more prone to breakage.
- The water utilities studied concurrently face the need to replace infrastructure and upgrade treatment plants to comply with a number of new regulations to be implemented under the Safe Drinking Water Act. Many municipalities also face significant needs for investments in wastewater infrastructure and compliance. This concurrent demand significantly increases the financial challenge they face.
- Overall, in the 20 utilities studied, infrastructure repair and replacement requires additional revenue totaling about \$6 billion above current spending over the next 30 years. This ranges from about \$550 per household to almost \$2,300 per house-

hold over the period. These household impact figures do not include compliance with new regulations or the cost of infrastructure replacement and compliance for wastewater.

- The pattern and timing of the need for additional capital will be different in each community, depending on its demographically driven replacement “wave.”
- Household impacts will be two to three times greater in smaller water systems (\$1,100 to \$6,900 per household over 30 years) due to disadvantages of small scale and the tendency for replacement needs to be less spread out over time.
- Because of demographic changes, rate increases will fall disproportionately on the poor, intensifying the challenge that many utilities face keeping water affordable to their customers.

Recommendations:

America needs a new partnership for reinvesting in drinking water infrastructure. There are important roles at all levels of government.

1) Measures by Utilities and Local Governments

Although the AWWA analysis has looked at the infrastructure issue in the aggregate, many key issues must be addressed at the local utility level. Utilities should develop a comprehensive local strategy that includes:

- Assessing the condition of the drinking water system infrastructure.
- Strengthening research and development
- Working with the public to increase awareness of the challenge ahead, assess local rate structures, and adjust rates where necessary.
- Building managerial capacity.

2) Reform of State Programs

The states too have an important role to play in addressing our infrastructure funding needs. States may need to match an appropriate share of any new federal funds that are provided for infrastructure assistance. Moreover, states need to reform their existing programs to make them more effective. States should commit to:

- Respecting the universal eligibility of all water systems for federal assistance.
- Streamlining their programs for delivery of assistance and allow alternative procurement procedures that save money.
- Making their financing mechanisms more attractive by committing to grants and very low or negative interest loans.
- Using federal funds in a timely fashion or face the reprogramming of those funds to other states.

3) A Significant Increase in Federal Assistance

The federal government has a critical role to play in preventing the development of a gap in water infrastructure financing. AWWA recommends either changing and expanding the existing Drinking Water State Revolving Fund and other drinking water programs, or creating a new, infrastructure-focused fund. The federal role should include:

- Significantly increased federal funding for projects to repair, replace, or rehabilitate drinking water infrastructure.
- An increase in federally supported research on infrastructure management, repair and replacement technologies.
- Steps to increase the availability and use of private capital.

Reinvesting in Drinking Water Infrastructure

Dawn of the Replacement Era

Introduction

The importance of safe drinking water to the nation's public health and economic welfare is undisputed. About 54,000 community drinking water systems provide drinking water to more than 250 million Americans. By keeping water supplies free of contaminants that cause disease, our public water systems reduce sickness and related health costs as well as absenteeism in the workforce. By providing safe and sufficient supplies of water, America's public water systems create direct economic value across nearly every sector of the economy and every region of the country. However, significant economic changes are confronting the water profession as we enter the 21st Century. The new century poses new challenges in sustaining the infrastructure—particularly the underground pipes—that provides the broad public benefits of clean and safe water.

Recognizing that we are at the dawn of a major change in the economics of water supply, the American Water Works Association (AWWA) has undertaken an analysis of the infrastructure challenge facing utilities. The project involved correlating the estimated life of pipes with actual operations experience in a sample of 20 utility systems geographically distributed throughout the nation (see Figure 1). Projecting future investment needs for pipe replacement in those utilities yields a forecast of the annual replacement needs for a particular utility, based on the age of the pipes and how long they are expected to last in that utility. This analysis graphically portrays the nature of the challenge ahead of us. It also serves as the foundation for AWWA's call for a new national partnership to address the looming need to reinvest in our drinking water infrastructure.

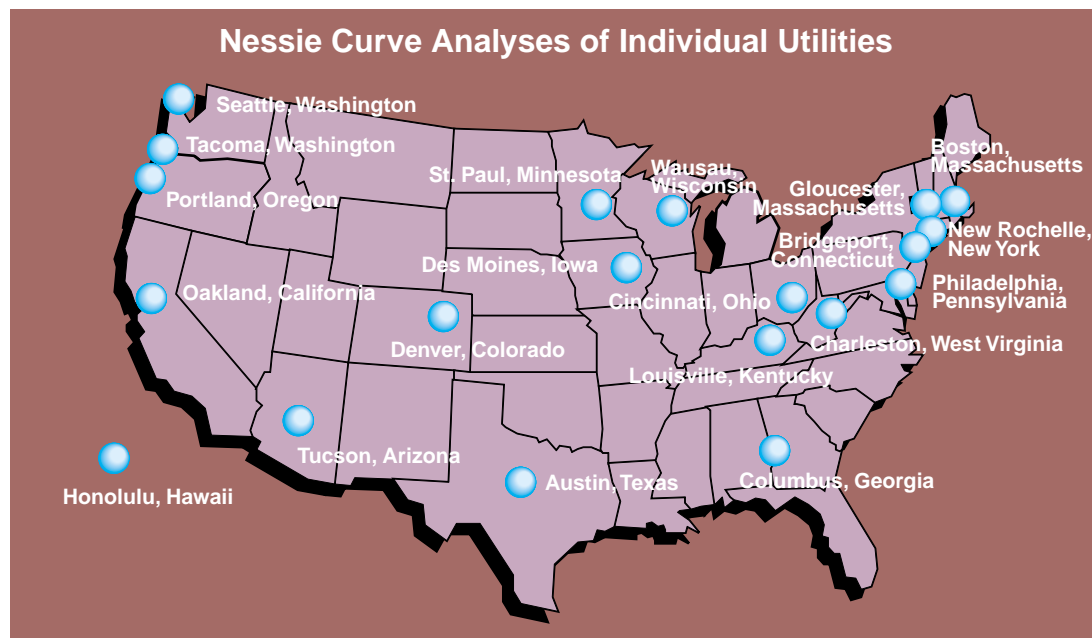


Figure 1

FINDINGS

Pipes are expensive, but invisible.

Most people do not realize the huge magnitude of the capital investment that has been made to develop the vast network of distribution mains and pipes—the infrastructure—that makes clean and safe water available at the turn of a tap. Water is by far the most capital intensive of all utility services, mostly due to the cost of these pipes, water infrastructure that is literally a buried treasure beneath our streets. But buried means out of sight. And as the old saying goes, out of sight means out of mind. Moreover, most of our pipes were originally installed and paid for by previous generations. They were laid down during the economic booms that characterized the last century's periods of growth and expansion. So not only do we take these pipes for granted because we can't see them, we also take them for granted because, for the most part, we didn't pay for them initially. What's more, they last a long time (some more than a century) before they cost us very much in maintenance expense near the end of their useful lives or ultimately need replacement. For the most part, then, the huge capital expense of the pipes is a cost that today's customers have never had to bear. It has always been there, but it's always been invisible to us.

The original pattern of water main installation from 1870 to 2000 in 20 utilities analyzed by AWWA is graphically presented in Figure 2. This graph reflects the total cost in current dollars of replacing the pipes laid down between 1870 and 1998 in the 20 utilities studied. It is a reflection of the development of these utilities, and in turn, mirrors the overall pattern of population growth in large cities across the country. There was an 1890s boom, a World War I boom, a roaring '20s boom, and the massive post-World War II baby boom.

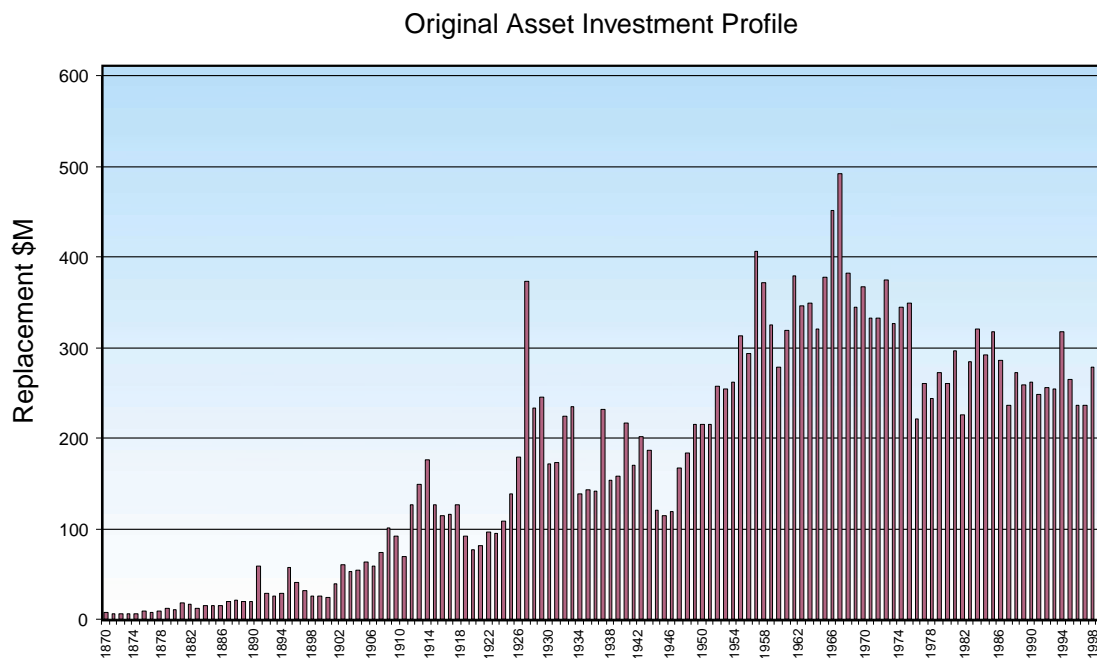


Figure 2

The cumulative replacement cost value of water main assets (that is, the cost of replacing water mains in constant year 2000 dollars) has increased steadily over the last century in our sample of 20 utilities. In aggregate across our sample of utilities, the replacement value of water mains in today's dollars is about \$6,300 per household. If water treatment plants, pumps, etc., are included, this figure rises to just under \$10,000 per household. This is more than three times what it was in 1930 in constant dollar terms. The difference is not due to inflation; rather, there is simply more than three times as much of this infrastructure today as there was in 1930, in order to support improved service standards and the changing nature of urban development.

In general, then, there is a lot more water infrastructure in place today on a per-capita basis, implying an increased per-capita share of the liability for replacing these assets as they wear out. This invisible replacement liability has been accumulating gradually over several generations of water system customers, managers and governing boards. They have not had to recognize this liability because the bill was not yet due. For many utilities, board/council/commission relationships and customer relationships have developed in recent decades in the absence of a recognized need for significant investment in replacing the utility's assets as they age and wear out.

Pipes are hearty, but ultimately mortal.

The oldest cast iron pipes—dating to the late 1800s—have an average useful life of about 120 years. This means that, as a group, these pipes will last anywhere from 90 to 150 years before they need to be replaced, but on average they need to be replaced after they have been in the ground about 120 years. Because manufacturing techniques and materials changed, the roaring '20s vintage of cast-iron pipes has an average life of about 100 years. And because techniques and materials continued to evolve, pipes laid down in the Post-World War II boom have an average life of 75 years, more or less. Using these average life estimates and counting the years since the original installations shows that these water utilities will face significant needs for pipe replacement over the next few decades.

The modern public water supply industry has come into being over the course of the last century. From the period known as the “Great Sanitary Awakening,” that eliminated waterborne epidemics of diseases such as cholera and typhoid fever at the turn of the last century, we have built elaborate utility enterprises consisting of vast pipe networks and amazing high-tech treatment systems. Virtually all of this progress has been financed through local revenues. But in all this time, there has seldom been a need to provide for more than modest amounts of pipe replacement, because the pipes last so very long. We have been on an extended honeymoon made possible by the long life of the pipes and the fact that our water systems are relatively young. Now that honeymoon is over. From now on and forevermore, utilities will face significant requirements for pipe repair, rehabilitation, and replacement. Replacement of pipes installed from the late 1800s to the 1950s is now hard upon us, and replacement of pipes installed in the latter half of the 20th Century will dominate the remainder of the 21st.

We believe that we stand today at the dawn of a new era—the replacement era—for water utilities. Over the next three decades, utilities will be in an adjustment period during which they will incorporate the costs of pipe replacement in routine utility spending. This will require significant adjustments in utility revenues. The magnitude of the need and the

invisibility of that need to the person on (top of) the street will make this a particularly challenging adjustment. The need for significantly greater investment in pipe replacement is all the more difficult to convey because it was never there before. It's hard to explain why it's going to cost more to do the same job in the future than it cost in the past.

Many water systems all across America have seen this day coming and have already begun to ramp up their expenditures on pipe rehabilitation and replacement. But for many utilities this problem is just emerging and is enormous in scope. For them the water supply business will never be the same.

Back to the future: pipe replacement needs are a “demographic echo.”

To understand the nature and scope of the emerging infrastructure challenge, AWWA undertook an analysis of 20 utilities throughout the nation. The analysis projects future investment needs for pipe replacement in the 20 utilities and provides a forecast called a “Nessie Curve.” The Nessie Curve is a graph of the annual replacement needs in a particular utility, based on when pipes were installed and how long they are expected to last in that utility before it becomes economically efficient to replace them. There are, of course, a number of factors that can require the replacement investment to be made earlier. In many cities, for example, there are urban redevelopment efforts or similar major construction projects that could require up-sizing or other modernization of the pipe network before the pipes reach the end of their useful lives.

Data on repair and replacement needs for each of the 20 cities in our sample is presented in Appendix A. This information is presented for each city as a “Nessie Curve,” that is, a projection of the city’s economically efficient investment in pipe repair and replacement, based on the city’s original pipe installation profile and how long the pipes last in that utility. The aggregate Nessie Curve for all 20 utilities is presented in Figure 3. The rising wave shape suggests why the curve is named after the Loch Ness Monster.

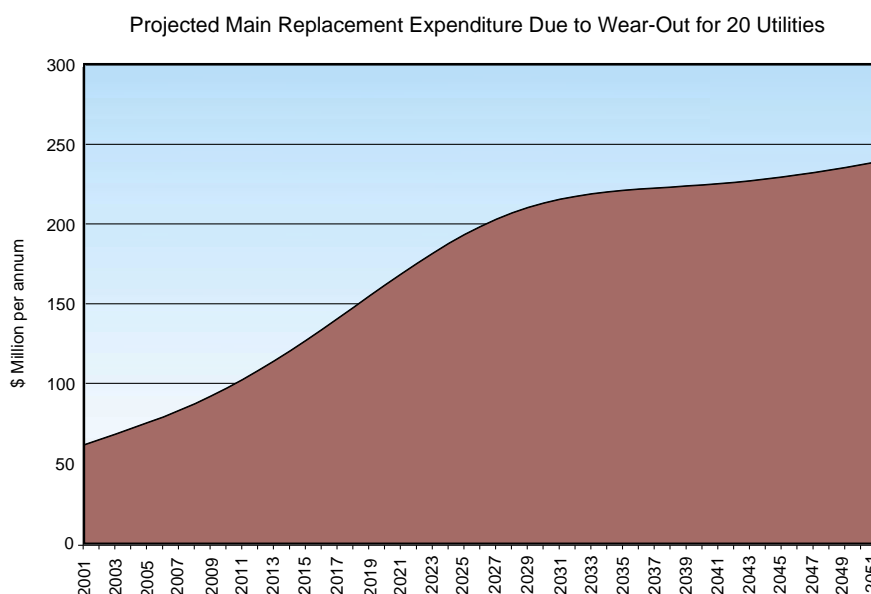


Figure 3

The Nessie Curve reflects an “echo” of the original demographics that shaped a particular utility. It is very similar to the echo of demographics that predicts future liabilities for the Social Security Trust Fund. Indeed, this is exactly the same type of problem that faces Social Security. Historical demographic trends—in our case, pipes laid down as long as a century ago—created a future financial obligation that is now coming due. By modeling the demographic pattern and knowing the life expectancy of the pipes, we can estimate the timing and magnitude of that obligation.

Just as in Social Security, a threat to affordability arises when there were powerful demographic and economic trends at work originally, but the liability arrives at a later time when the demographic and economic conditions have changed. In the water business, the challenge is magnified by pipes that last through several generations of customers before they need to be replaced.

Reflecting the pattern of population growth in large cities over the last 120 years, the Nessie Curves in Appendix A forecast investment needs that will rise steadily like a ramp, extending throughout the 21st Century. The curves show that replacement expenditures will have to rise steadily for the next 30 years. By 2030, the utilities in our sample of 20 will have to spend on average over three-and-a-half times as much per year as they do now (in constant dollars) to replace pipes that have reached the end of their economic lives. Some of the utilities in our sample will encounter the steepest part of the incline in the first 10 years. Others will encounter most of the rise over 20 years, while some will experience a sustained increase over 30 years.

Of course, every city has a different demographic history. In addition, numerous local factors will affect the life of a utility’s pipes and therefore its Nessie Curve. Each utility has a unique set of circumstances and therefore a different set of infrastructure funding challenges in the future. Nonetheless, demographics will produce the same type of lagged replacement schedule in any major city.

If that were not enough of a challenge, there is an important corollary. As pipe assets age, they tend to break more frequently. But it is not cost-effective to replace most pipes before, or even after, the first break. Like the old family car, it is cost-efficient for utilities to endure some number of breaks before funding complete replacement of their pipes.

Considering the huge wave of aging pipe infrastructure created in the last century, we can expect to see significant increases in break rates and therefore repair costs over the coming decades. This will occur even when utilities are making efficient levels of investment in replacement that may be several times today’s levels. In the utilities studied by AWWA, there will be a three-fold increase in repair costs by the year 2030 despite a concurrent increase of three and a half times in annual investments to replace pipes.

It is important to note that a Nessie Curve is a prediction, not a destiny. That is, a utility can choose to manage its infrastructure replacement needs in various ways. For example, the utility may accept increased break repair costs up to a point and delay the replacement of an old pipe, rehabilitate certain pipes to “buy time,” or adopt other asset management techniques to extend the life of the pipes as long as possible. Nevertheless, it appears inevitable that many utilities will face substantial increases in infrastructure investments over the next 30 years, to replace pipes laid down as long as 120 years ago.

A final observation from our sample of 20 Nessie Curves is that the large “demographic wave” of replacement needs is only just now upon us. We are just now at the time when there is a compelling need to significantly increase the levels of replacement spending in most utilities. Importantly, there is no evidence that utilities are “behind the curve” or that America is in ruins. That is not the nature of the challenge. We are not faced with making up for a historical gap in the level of replacement funding. In fact, break rates in our sample of 20 utilities are within a range that is considered representative of best management practices for water utilities, indicating that the utilities have made efficient decisions and managed well up to this point. The challenge is ramping up utility budgets to prevent a “replacement gap” from developing in the near future. Unfortunately, keeping up with replacement needs is about to get a lot harder than ever before, and it’s going to stay that way. We are coming face-to-face with a serious challenge that could become a crisis if we ignore it.

Water infrastructure is local and therefore vulnerable to demographic changes.

Water utilities are the last natural monopolies. The large investment required in pipe networks makes it impossible to have more than a single provider of water service within a given area. These large investments are also a major source of financial vulnerability for water utilities as the result of the very fixed nature of the assets and the very mobile nature of the customers. When populations grow, the infrastructure is expanded, but when people move away, the pipe assets and the liability for repair and replacement remain behind, creating a financial burden on the remaining customers.

Figure 4 is a plot of U.S. Census population data for Philadelphia from 1850 to 1996. Over the 100 years from 1850 to 1950, the population grew from 100,000 to 2 million people. But from 1950 to the end of the century, Philadelphia lost 25 percent of its population, dropping to 1.5 million. This picture tells a story that was replicated again and again

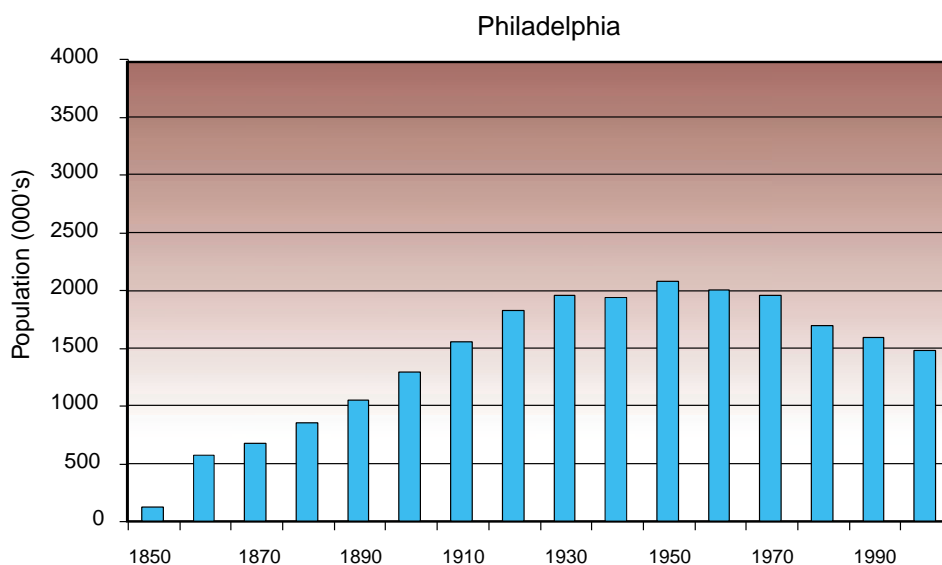


Figure 4

throughout the Rustbelt cities of the Northeast and Midwest. The effect is to significantly increase the burden of replacement funding on the remaining residents of the city.

As previously discussed, the average per-capita value of water main assets in place today across our sample of 20 utilities is estimated to be three times the amount that was present in 1930. In Philadelphia, however, that ratio is almost eight times the value in 1930 due to population declines since about 1950. This problem, known as “stranded capacity” (essentially, capital facilities that are not matched by rate revenue from current customers), is typical of Rustbelt demographics and adds considerably to the challenge of funding replacement in these cities.

Urban demographic history also explains many other dimensions of the infrastructure replacement challenge facing the water industry. Both gains and losses in urban populations created small system infrastructure problems in their wake. During the first half of the 20th Century, many of the people swelling the populations of the urban centers came from smaller rural towns, leaving small water system infrastructure behind to struggle with fewer customers. In the latter half of the century, the departure of big city residents for the suburbs fueled an explosion of new, small water systems in suburban areas. Today about half of all small water systems are within Standard Metropolitan Statistical Areas defined by the U.S. Census. Built in boom times, many of these suburban systems were not built to enduring standards, creating another liability. When these systems are absorbed by larger metropolitan systems, it is commonly necessary to completely rebuild them.

The pattern reflected in Sunbelt cities is the other side of the story from that in the Rustbelt. These cities are experiencing rapid growth and expansion which places capital financing demands upon them that are truly the opposite side of the coin. When water utilities are expanding, they must build some of the most expensive components—new source development, storage facilities, transmission mains, and treatment plants—in advance of population growth in order to serve people when they arrive. This is, in effect, another form of stranded capacity—capital facilities that must be paid for despite the fact the customers are not yet in place. Investor-owned utilities are, in fact, generally prohibited by state regulatory commissions from recovering such costs in rates.

Demographic change thus places financial strain on all our public water systems. It is the same whether they are large or small; urban or rural or suburban; and Rustbelt or Sunbelt. The inescapable fact is that water infrastructure is fixed while populations are mobile. The result is a form of “market failure”—an adverse side effect of market activity that creates an unfunded liability. America derives tremendous economic strength from the fact that it has a highly mobile labor force. When people move around, however, there are costs imposed on the local water infrastructure. It is the same whether it is people moving from rural towns to the city, from the city to the suburbs, or from the Rustbelt to the Sunbelt. Our labor mobility imposes a significant cost on water utilities on both the giving end and the receiving end of this market process, while the benefits are generally disseminated throughout the national economy.

Replacement of water treatment plants is also coming due.

Replacement of water treatment assets presents a different picture from that of the pipes, but greatly complicates infrastructure funding for utilities. Major investments in water and wastewater treatment plants were made in several waves following the growing understanding of public health and sanitary engineering that evolved during the 20th Century. Of course, the installation pattern of treatment assets also reflects major population growth trends. But whereas pipes can be expanded incrementally to serve growth, treatment must be built in larger blocks. Investments in treatment thus present a more concentrated financing demand than investments in pipes.

Treatment assets are also much more short-lived than pipes. Concrete structures within a treatment plant may be the longest lasting elements in the plant, and may be good for 50 to 70 years. However, most of the treatment components themselves typically need to be replaced after 25 to 40 years or less. Replacement of treatment assets is therefore within the historical experience of today's utility managers. Even so, many treatment plants built or overhauled to meet EPA standards over the last 25 years are too young to have been through a replacement cycle. Many are about due for their first replacement in the next decade or so.

The concurrent need to finance replacement of pipes and of treatment plants greatly increases the challenge facing utilities. Figure 5 presents a Nessie Curve showing both pipe replacement and treatment replacement needs for the Bridgeport Hydraulic Company. Similar Nessie curves for a number of other utilities are included in Appendix A.

The distinguishing characteristic of this graph is the manner in which spending for the replacement of pipes rises like a ramp over the first part of the century, pushing up the overall level of annual expenditure required. Whereas pipe repair and replacement are generally funded out of current revenues, treatment costs are typically debt-financed. As

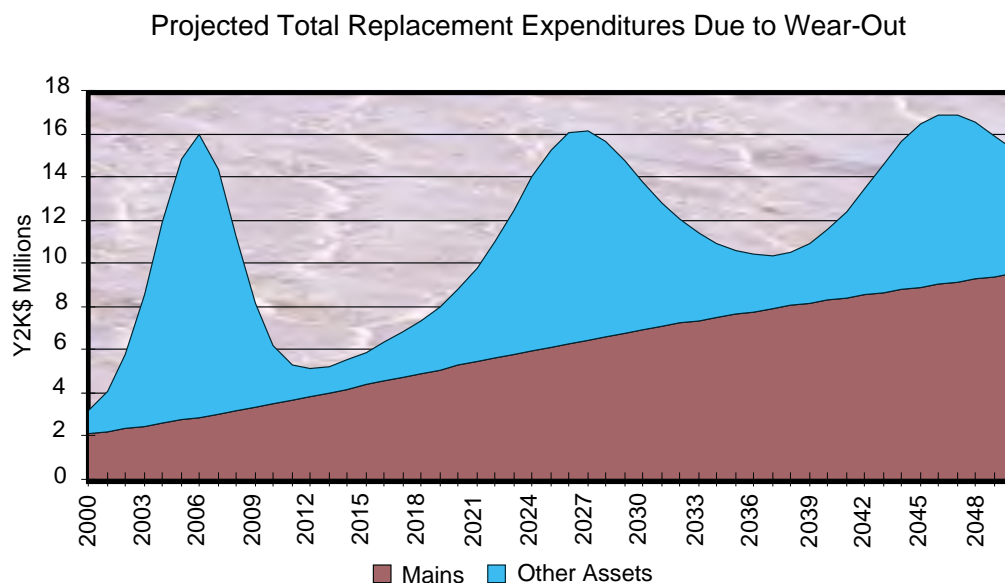


Figure 5

utilities face ever rising costs for repair and replacement of pipes, more and more of the utility's rate revenue will be required for those investments. This will leave the utility with increasingly weakened credit every time it gets to another "treatment hump," unless rates can be raised to match the slope of the curve. A final point to note about the treatment cost estimates used in developing Figure 5 and others like it in Appendix A is that these do not include the cost of new drinking water regulations likely to be implemented over the coming decades.

Increased expenditures are needed to climb the ramp and avoid a gap.

The Water Infrastructure Network (WIN) has developed a "gap analysis" to estimate the total increased spending that is required by water and wastewater utilities in order to avoid getting behind in funding infrastructure replacement over the next 20 years.¹ The first step in the WIN estimate is accomplished by extrapolating from Census data on historical utility expenditures for 20 years into the future. The resulting baseline expenditure forecast is then examined to see how much it must be increased in order to meet new expenditure "needs" for both new EPA compliance requirements and infrastructure repair and replacement over the same 20-year period. The "gap" between the baseline expenditure forecast and the future "needs" forecast is the amount of additional expenditure that must be forthcoming in order for water and wastewater utilities to maintain their critical infrastructure in a healthy condition.

The findings of this "gap analysis" indicate that the baseline expenditures of water utilities must be increased by about \$300 billion over 20 years to keep up with both compliance and infrastructure needs. In similar fashion, the baseline expenditure trend in wastewater utilities must be increased by about \$400 billion to meet such needs. Taken together, and accounting for the cost of capital, WIN has estimated that water and wastewater utilities together need to increase their investments in infrastructure by almost \$1 trillion over the next 20 years.

The WIN "gap analysis" is easily misunderstood. Many have interpreted it to mean that a trillion-dollar deficiency already exists. It is important to stress that the gap estimate represents the challenge ahead—the ramp that we must climb—in increasing utility expenditures in order to avoid such a deficiency. The AWWA Nessie Curve analysis of 20 utilities indicates that we are not now behind in maintaining our water infrastructure. There is no current crisis in these 20 utilities. Rather, they are challenged with finding significant additional funds over the next 30 years for investments in repair and replacement, in order to avoid getting behind.

Extrapolation from aggregate baseline trends, such as in the WIN gap analysis, is akin to "technical analysis" of the stock market using charts, graphs and trending techniques. Investment analysts typically like to supplement such "technical analysis" with "fundamental analysis" of the situation existing within individual companies. The AWWA Nessie Curve analysis provides this type of supplemental perspective on increased expenditure needs.

¹Water Infrastructure Network (WIN), Clean & Safe Water for the 21st Century, April 2000.

As illustrated in Figure 5, the Nessie Curve analysis indicates that expenditures on infrastructure repair and replacement must be significantly ramped-up over a period extending from 2000 through 2030. The steep rise is shown to level off after that, but it does not go away. Expenditures will have to continue to climb, albeit more gradually, throughout most of the rest of the 21st Century. This shape is the signature pattern of the new replacement era that we have entered. It is not a short-term “hump” that we have to get over. The shape of the challenge is that of a sustained rise in expenditures. This period of ramping-up is going to be a period of significant adjustments.

The Nessie Curves of the individual utilities shown in Appendix A present wide-ranging needs for increased expenditure for replacement of pipes and treatment assets due to wear-out. In the 20 utilities studied, such needs total about \$6 billion above current spending over the next three decades. On a household basis, needs range from \$550 to \$2,300 over 30 years. These figures do not include the prospective costs of numerous new SDWA regulations likely to be implemented over the coming decade, nor any costs from the wastewater or stormwater side of the urban utility business. Moreover, as seen in Appendix A, the utilities vary widely in the timing of these needs; some face sharp needs in the next 10 years, while others don't face their highest needs for 10 or 20 years. The slope and the “humpy” patterns of increasing capital requirements are unique to each utility.

Our sample of 20 utilities represents relatively large water utilities. On a per household basis, the total 20-year capital needs for replacement illustrated in our sample is about the same as that estimated by EPA for large water systems in their newly released Drinking Water Needs Survey.²

The EPA Drinking Water Needs Survey uses a site visit methodology and a large sampling program to document needs in small systems and is probably the best information available on small system needs. Extrapolating from EPA's estimated 20-year capital need for small systems, we project the total 30-year expenditure for infrastructure repair and replacement in small systems might be in a range of \$1,490 per household to \$6,200 per household.

The result of this “fundamental analysis” using Nessie Curves is not inconsistent with the order of magnitude of the need that WIN estimates to be facing water utilities (\$300 billion over 20 years). Extrapolation from our 20 sets of Nessie Curves suggests that the need might be on the order of \$250 billion nationally and extend over three decades. However, the Nessie Curve forecast is based on an assumption that pipes are left in the ground until their economic life is over. The reality in utility operation is that myriad other influences can cause the replacement need to arise sooner. These include urban redevelopment, modernization, coordination with other city construction schedules, increasing pipe size, and other factors.

² U.S. Environmental Protection Agency, 1999 Drinking Water Infrastructure Needs Survey (EPA 816-R-01-004), February 2001.

Addressing affordability is the heart of the challenge.

The central question for policy makers and utilities is whether the increased rate of infrastructure spending that utilities must face over the next 30 years can be financed by the utilities themselves at rates customers can afford. AWWA remains, committed to the principle that utilities should be self-sustaining through their rates. For many utilities, however, the degree of change involved in adapting to the dawning replacement era, the adverse effect of demographic change on per household costs, and the competing demand for investment in wastewater and other municipal services, will combine to present a significant affordability challenge.

There are two related dimensions to the affordability concern. First is the ability of utilities to finance the needed additional expenditures within their rates. Second is the impact of higher rates on households.

In developing this study, AWWA brought together a group of utility managers from across the country to discuss infrastructure issues. This group characterized the question from a local perspective as an “affordability gap” or a “reality gap” and defined it as “the difference between what you think you should be spending on infrastructure and what you or your customers can afford to spend in reality.” This characterization of the problem reflects the difficulty of obtaining significant utility rate increases. Rate increases are best received when implemented gradually in a number of installments over several years. Unfortunately, the rate increases required to meet the challenges of pipe replacement that utilities now face cannot be smoothly implemented in many cases.

There is small likelihood that the \$550 to \$2,300 per household projected to be required for infrastructure repair and replacement in our 20 utilities over the next 30 years can be spread evenly or taken on gradually over that period. As illustrated in Appendix A, some Nessie curves present a steeper funding challenge and some present a gentler slope due to local variations in the historical demographic trends. There are “humps” on the up-ramp for replacement of treatment plants and other equipment. Additional “humpy” expenditures for compliance with anticipated new regulations are not included. In small systems, the estimated \$1,490 to \$6,200 range of household impact is likely to be even more concentrated since the original demographics were themselves more concentrated.

Compliance-driven requirements to replace treatment plants and invest to meet new mandates will also dominate expenditures and push aside the more subtle need for investments in pipe replacement. This is exacerbated by the fact that the costs of water and wastewater service appear on the same bill in most communities. Thus, the needs to replace wastewater treatment plants and to replace wastewater lines compete with drinking water needs for the same consumer dollar. Sewer pipes generally impose higher unit replacement costs than water pipes, owing to their inherent characteristics (size, depth, etc.). Figure 6 presents a Nessie curve for a combined water and wastewater utility showing replacement funding needs for both water and wastewater pipes and other assets (treatment, pumping, etc.). The figure illustrates the typical relationship between water supply and wastewater costs—wastewater facilities cost noticeably more to replace.

The combined repair and replacement needs for water and wastewater infrastructure amount to a significant financing challenge in their own right. But the cost of compliance

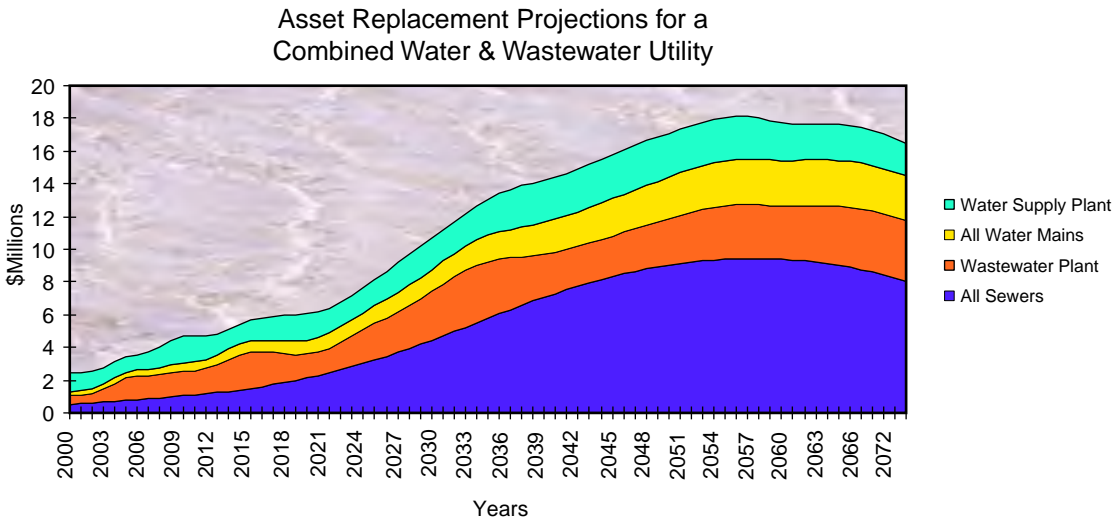


Figure 6

with combined sewer overflow (CSO) and stormwater regulations may dwarf everything else in water and wastewater utilities. The scale of the expenditure required in these programs may sweep everything else aside in some utilities, causing deferral of other needs and allowing a “gap” to open up. Note that CSO and stormwater compliance costs are not included in Figure 6.

To avoid an infrastructure gap, utilities are going to have to increase expenditures to keep up with both compliance requirements and infrastructure replacement. If rate increases do not keep pace with the increased rate of expenditures, the financial ratios used to evaluate a utility’s creditworthiness will deteriorate, making it more difficult and more expensive to raise capital.

If a utility attempts to balance a deficiency in allowable rates by deferring infrastructure expenditures, then the stage is set for an infrastructure investment gap to begin to develop, creating a future liability for the utility and its customers. With the new accounting requirements being implemented under the Governmental Accounting Standards Board Statement No. 34 (GASB 34), such a deferral of infrastructure expenditures will be reported to the financial markets and begin to impair the utility’s credit rating and ability to raise capital.

Since the Nessie Curve represents replacement timing based on the economic life of the pipes, it follows that deferral of replacement will produce higher overall costs due to increased repairs than would be the case if replacement occurred on time. If replacement is deferred too far beyond the economic trade-off point between replacement and repair costs, the repair cost burden will spiral upwards and have significant impacts on utility cash flows. Such a scenario will indeed impair a utility’s ability to repay debt and will be made plain to the credit markets by the new GASB 34 requirements.

In either of these scenarios—rates that don't keep up with expenditures or expenditures that don't keep up with needs—the bottom line is the same. If both expenditures and rate revenues cannot be increased at the required rate, then the utility's credit may be impaired, and it may face even higher costs as a result. For some utilities, there is the potential for this to become a vicious cycle—a financial trap. These systemic financial risks are the reason why we have a clear and present need for an enhanced partnership between utilities, states and the federal government. We need to provide the means to assist utilities “up the ramp and over the humps.” We need to minimize the credit risks utilities face over the next three decades as we make the adjustments in rates required to assure sustainability in the new replacement era.

The second, and all important, dimension of the affordability challenge is the bottom-line impact of increased water rates on household budgets. AWWA believes it is critical to avoid sudden and significant changes in rates that can induce “rate shock” among customers. The broader issue involved in rate shock ties back to the pivotal role of safe drinking water in promoting public health.

America has by far the safest drinking water in the world. Standards promulgated under the Safe Drinking Water Act aspire to the highest levels of technology and treatment optimization known to science. As we push farther into the limits of science and technology, we unavoidably encounter diminishing returns in terms of quantifiable health benefits at the same time that we must take on increasing marginal costs. Many new standards relate to very subtle health concerns that are difficult to substantiate and quantify. Yet, to be protective of health, there is a tendency to err on the side of safety, especially when the threats may relate to sensitive subpopulations such as children, the unborn, the elderly and the health-impaired.

This is where the issue of rate shock must be brought into focus as a public health concern. Whenever the sensitive subpopulations we are striving to protect are also among the low-income segment of the population and are forced to forego medical care or nutrition in order to pay their utility bills, we could be doing more harm than good. The fact that we are now entering a significantly more expensive replacement era in water infrastructure makes it all the more difficult to maintain the right balance in this aspect of public health. By some comparisons, it may appear that water is still cheap and there is room to increase water rates. But such comparisons are not relevant to low-income households. The only comparison that matters in these households is the size of the incremental increase. If it is large enough to trigger a budget substitution that negatively affects family health—for example, giving up a prenatal visit in order to pay a utility bill—then we may be losing ground.

Over the past decade, utilities have formed an increasingly closer partnership with EPA, states, the environmental community, the public health community and other groups to continue to make progress for public health despite significant scientific challenges. This partnership must now be broadened to address the financial challenges of infrastructure replacement in order to preserve the fruits of our labors in the public health arena.

RECOMMENDATIONS

Considering all of these facts, the American Water Works Association believes it is time for a new American partnership for clean and safe water. This partnership requires that all levels of government and utilities play a role in working through the significant challenges ahead. Specifically, we recommend:

1) Measures by Utilities and Local Governments

The infrastructure funding issue varies from place to place, reflecting the age, character and history of the community. Although AWWA has looked at the infrastructure issue in the aggregate, many key questions must be asked and answered at the local utility level. The development of a comprehensive local strategy can bring these elements into focus and create a new “reality” that will help make infrastructure repair and replacement more affordable. Such a comprehensive strategy includes:

- **Assessing the condition of the drinking water system infrastructure.** Over the last few decades, utilities around the world have been developing innovative new approaches to managing long-lived buried infrastructure. In North America and overseas, some utilities are already taking advantage of tools such as geographic information systems, using new information to advance the state of the art and aggressively managing infrastructure replacement. Planning tools can help identify and plan for needed investment decades in advance of the actual need for funds. We should learn from, adapt, and use such tools.
- **Strengthening research and development.** Although there is not likely to be a single “silver bullet” to solve infrastructure management problems, an impressive array of technological tools have been moving through the research and development process in recent years. Efforts to develop and deliver such tools should be strengthened.
- **Working with the public to increase awareness of the challenge ahead, assess local rate structures, and adjust rates as necessary.** For many years, water and wastewater utilities have been nicknamed “the silent service.” Utilities have quietly provided an extremely reliable supply of high-quality water at relatively low rates compared to other public utilities and services. Partly as a result, a large number of utilities, particularly smaller ones, do not have appropriate rate structures. The 1996 SDWA requirement for Consumer Confidence Reports provides a vehicle for many utilities to take the first step in broadening their dialogue with customers and the public at-large. Comprehensive, focused, and strategic communications programs serve the dual function of providing consumers with important information about their water systems and building support for needed investments in infrastructure.
- **Building the managerial capacity of many water systems.** Congress took new steps in the 1996 SDWA Amendments to assure the institutional capacity of small systems applying for state revolving fund loans. Much more remains to be done in this area. EPA, in conjunction with water associations, could sponsor training programs on appropriate rate structures, designed specifically to deliver assistance to small systems in planning for full cost recovery through rates.

2) Reform of State Programs

The states, too, have an important role to play in addressing our infrastructure funding needs. States may need to match an appropriate share of any new federal funds that are provided for infrastructure assistance. Moreover, they need to reform their existing programs to make them more effective. For example, some states have not allowed larger systems to access the existing state revolving fund, or have excluded investor-owned systems. Some states encumber their revolving funds with nonproductive red tape, charge high loan origination and other fees, or charge loan rates that are equivalent to market rates. Some states preclude the use of alternate procurement methods that minimize infrastructure procurement costs. For example, the “design/build” process for infrastructure procurement has been documented to save 20–40% of construction costs for new treatment plants in some cases. Public procurement laws in many states, while not explicitly banning design/build, mandate a process that prevents its use where local authorities have determined it would be advantageous.

The result is that, in many states, revolving loan funds have not proved to be useful or attractive even to drinking water utilities desperately in need of capital. States should commit to:

- Respecting the universal eligibility of all water systems for federal assistance.
- Streamlining their programs for delivery of assistance and allowing alternative procurement procedures that save money.
- Making their financing mechanisms more attractive by committing to grants and very low or negative interest loans.
- Using federal funds in a timely fashion or facing the reprogramming of those funds to other states.

3) A Significant Increase in Federal Assistance

After accounting for the cost savings that can come from best practices in asset management, the development of new technologies, efforts to increase ratepayer awareness and support, and possible alternative compliance scenarios, for many utilities there is likely to remain a gap between the required expenditure increases and the practical ability to raise water rates. This gap could grow over the next few decades as infrastructure built in the late-1800s to mid-1900s must be repaired, replaced, and rehabilitated at the same time that we are trying to enhance the level of water treatment under the Safe Drinking Water Act (SDWA).

AWWA remains committed to the principle that utility operations should be fully supported by rates. In the long run, the objectives must be to manage the costs of replacing pipes and treatment plants and ensure financial sustainability through local rate structures. However, many utilities are going to face a period of adjustment in adapting to the new reality of the replacement era described in this report. Many utilities and their customers will need additional assistance in working through extraordinary replacement needs in the next 20 years.

The difference between drinking water utilities’ current expenditures for infrastructure replacement and the needed level of expenditure is estimated by WIN to be about \$11 billion per year over the next 20 years. If the federal government were to provide half the cost of this gap, the federal share of total utility spending would amount to under 12 percent of total utility spending. For comparison, the federal share of investment in roads, bridges, and airports is 80 percent.

To prevent the development of a gap in critical water infrastructure financing, AWWA recommends either changing and expanding the existing Drinking Water State Revolving Fund and other drinking water programs or creating a new, infrastructure-focused fund. Such a fund should provide:

- Significantly increased federal funding.
- Clear eligibility of projects to repair, replace, or rehabilitate drinking water infrastructure.
- Universal eligibility of all water systems, both public and investor owned, regardless of size.
- Ability to make grants or loans in any combination and to use other financing tools to leverage public and private capital.
- Reasonable terms and conditions such as demonstration of system viability and ability to repay a loan.
- Streamlined procedures for those accessing the funds.

Research is a critical component of a comprehensive federal program on infrastructure. Research stimulates the development of new techniques and unleashes American ingenuity. It offers the chance to save billions of dollars over the years to come through more efficient management, repair, and replacement technologies. The federal government should significantly increase its support for research on infrastructure management, repair and replacement technologies, methods for extending pipe life, and other means of advancing the art while lowering the cost of infrastructure management.

Finally, the federal government should take other important steps to better access and leverage public and private capital. Congress should consider:

- Development of a national water infrastructure financing bond bank similar to Fannie Mae.
- Tax code and other reforms to increase the availability and use of private capital. This could include steps such as the removal of constraints on private activity bonds, development of subsidized bond insurance, provision of federal loan guarantees, and improved investment tax credit incentives.

CONCLUSION

Considering when pipes were laid down in many water systems and how long they can be expected to last, it is clear that a new age—the replacement era—has arrived for water utilities. Over the next 30 years, infrastructure replacement needs will compete with compliance needs for limited resources. Clearly, infrastructure needs and compliance with the Safe Drinking Water Act can't be approached as separate issues, but need to be addressed together.

Only in the true spirit of a new partnership, as outlined in this report, can we think most broadly about these issues. Only in this spirit can we achieve the goals to which we all aspire: the provision of safe and affordable water to all Americans.

Reinvesting in Drinking Water Infrastructure

Dawn of the Replacement Era

APPENDIX A

20 Sets of Nessie Curves

This appendix presents results of infrastructure expenditure needs analyses conducted for 20 water utilities across the United States. The “Nessie Curve” technique employed in this study produces a forecast of water main and other asset repair and replacement expenditure requirements based on how those assets “wear out” over the course of their economic life. While this study has focused on projecting economically efficient replacement and repair costs from wear-out, there are other reasons why assets might be replaced sooner, such as needs relating to urban redevelopment, system improvements, coordination with other city construction, and increasing pipe size. The curves also focus only on existing assets and take no account of new assets needed to support growth or compliance with new SDWA regulations in the coming decades.

For each utility, results are summarized in several Nessie Curves illustrating different perspectives. For each utility there is an estimate of the total replacement cost value of the utility’s assets in today’s dollars. There is also an indication of whether the utility was studied with respect to mains only, or whether it was studied with respect to a wider range of assets (including treatment plants). In viewing the charts, it is important to remember whether the utility is an “apple” (mains only) or an “orange” (all assets).

The charts presented cover the next 50 years, primarily to better illustrate the characteristic shapes of the replacement “echo” while also identifying differences in the timing of major replacement requirements between the participating utilities. All values are constant year 2000 dollars. The forecasts assume zero inflation.

The first chart is entitled, “Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr).” In this graph, the total cost for replacement and repair due to aging is projected over the next 50 years at the household level.

The second chart, entitled “Projected Total Expenditures Due to Wear-Out” is similar to the first chart, showing the relative requirements for replacement expenditures and repair expenditures for the assets studied in each utility, expressed in total dollar outlays for the utility.

For the utilities that were studied with respect to all assets, there is a third chart on the page entitled, “Projected Total Replacement Expenditures Due to Wear-Out.” This chart projects replacement investment only, showing the relative contributions to 50-year replacement needs of mains versus other assets (treatment, pumping, etc.). For utilities that were studied only with respect to mains, this third chart is omitted from the summary page for that utility.

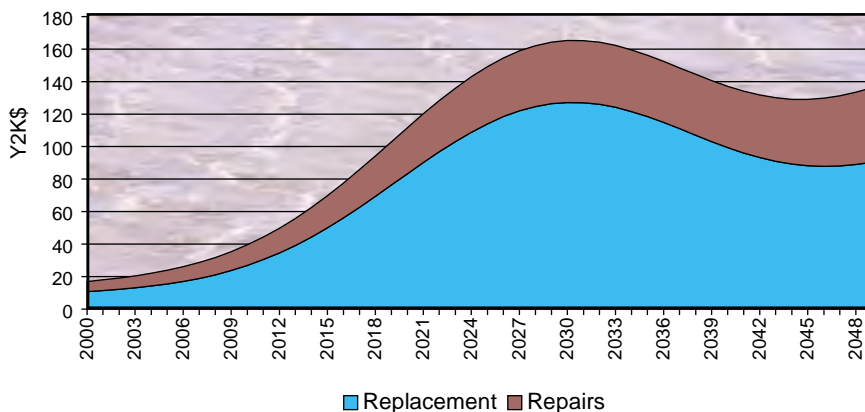
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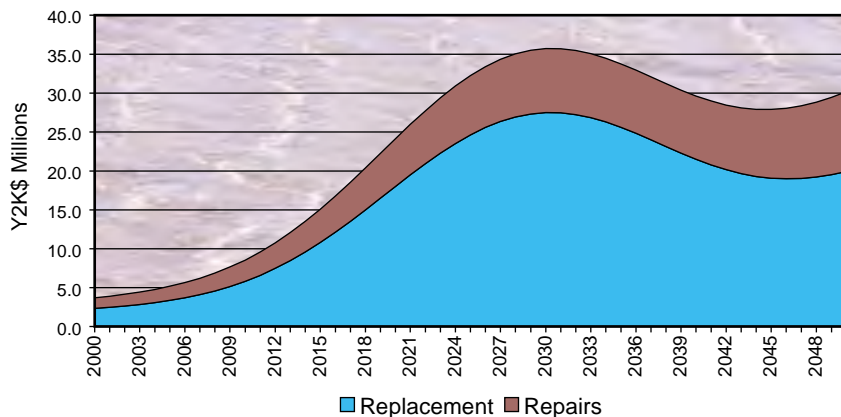
Austin, Texas

Asset Sets Modeled: Water Mains —
Estimated Replacement Value \$2,348 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



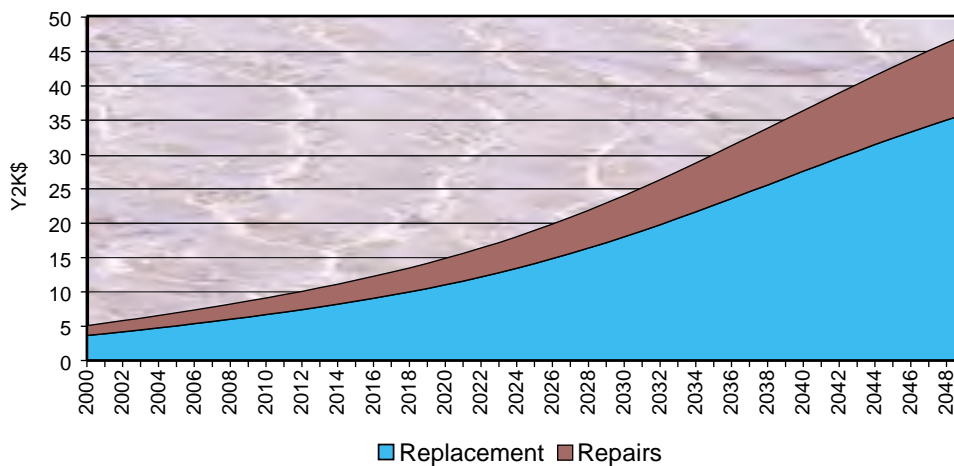
Projected Total Expenditures Due to Wear-Out



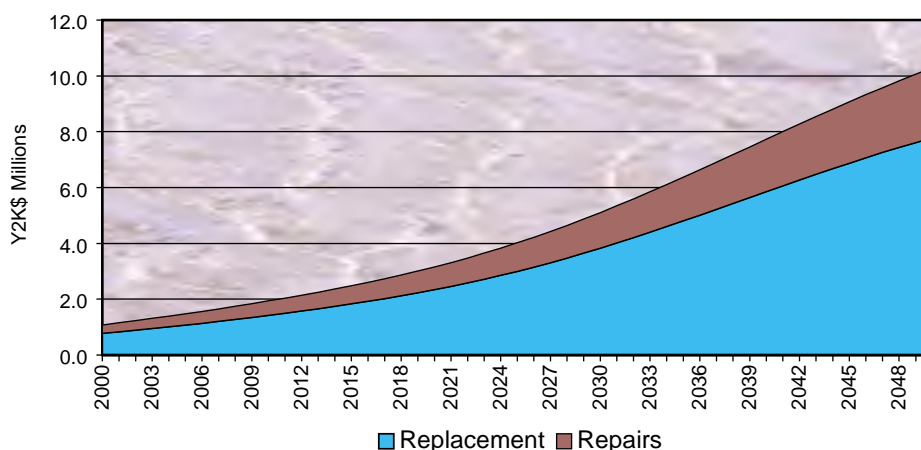
Boston, Massachusetts

Asset Sets Modeled: Water Mains —
Estimated Replacement Value \$694 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



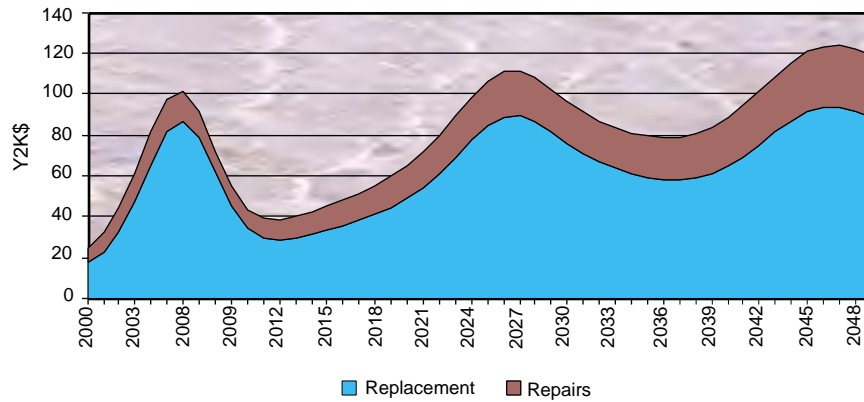
Projected Total Expenditures Due to Wear-Out



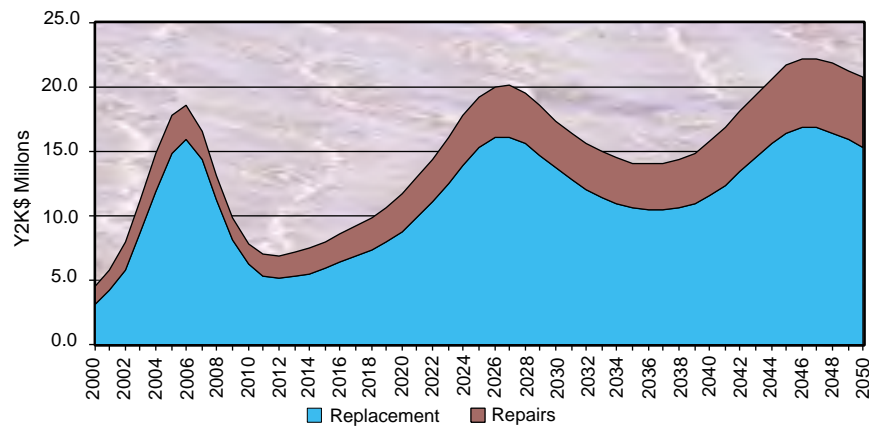
BHC, Bridgeport, Connecticut

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$1,663 M

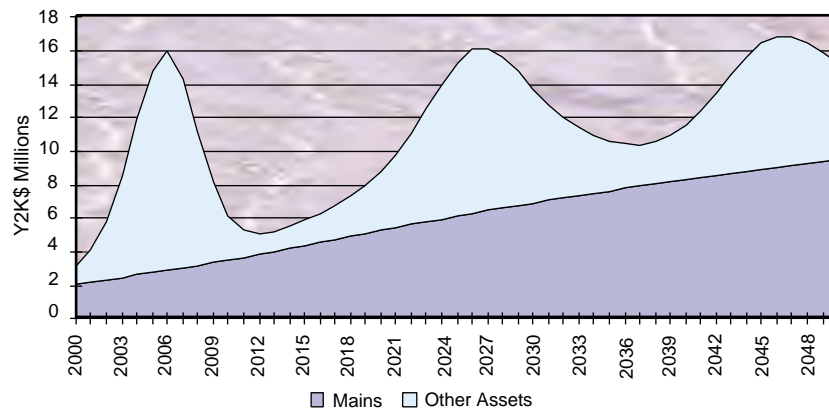
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



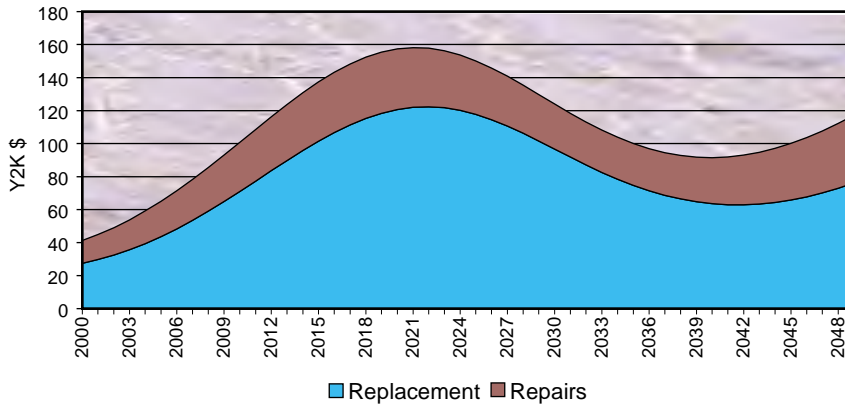
Projected Total Replacement Expenditures Due to Wear-Out



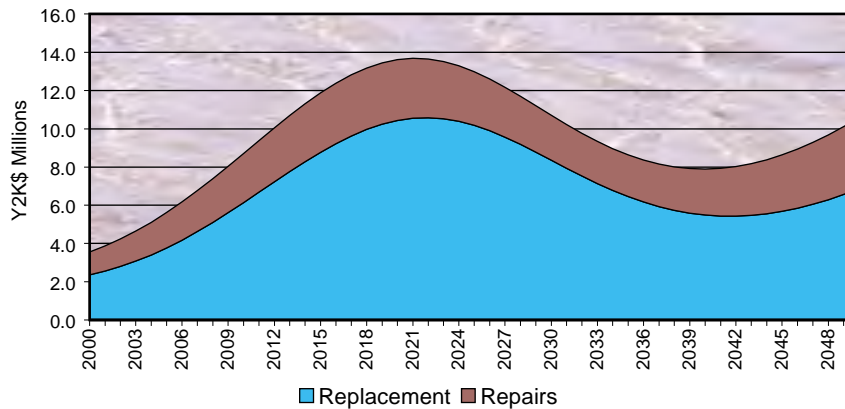
West Virginia American, Charleston, WV

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$650 M

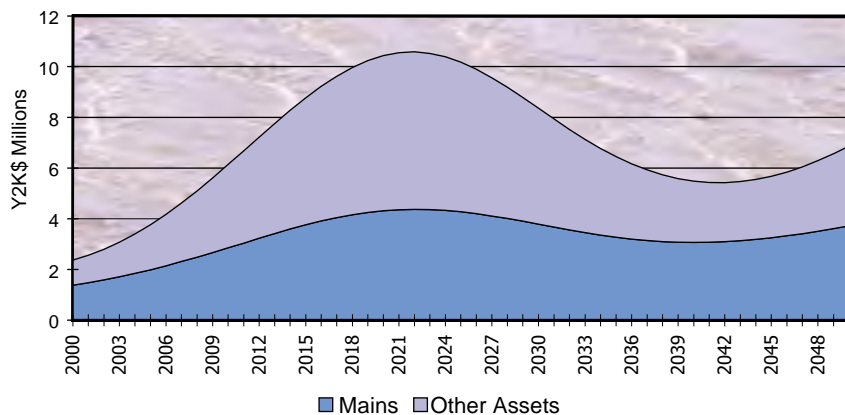
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



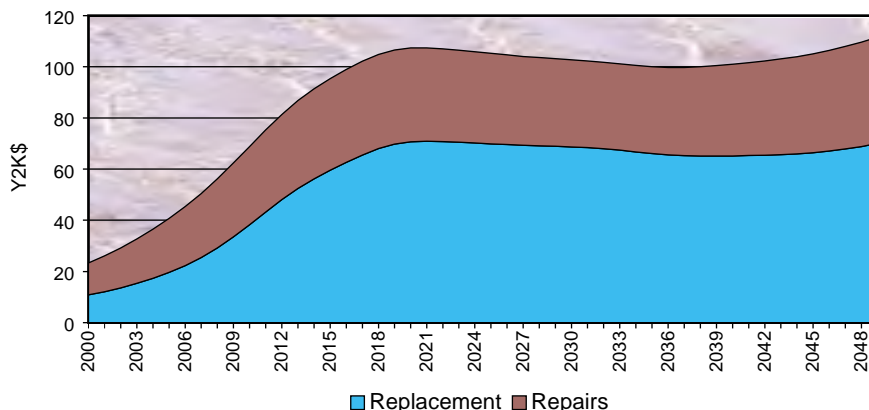
Projected Total Replacement Expenditures Due to Wear-Out



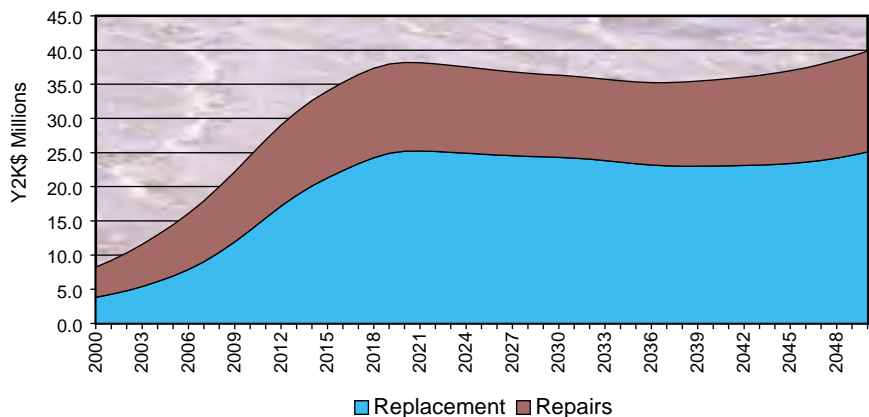
Cincinnati, Ohio

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$2,042 M

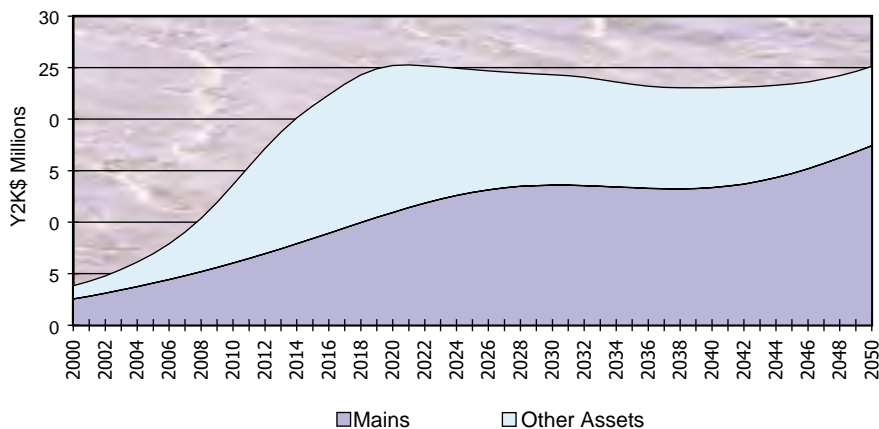
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



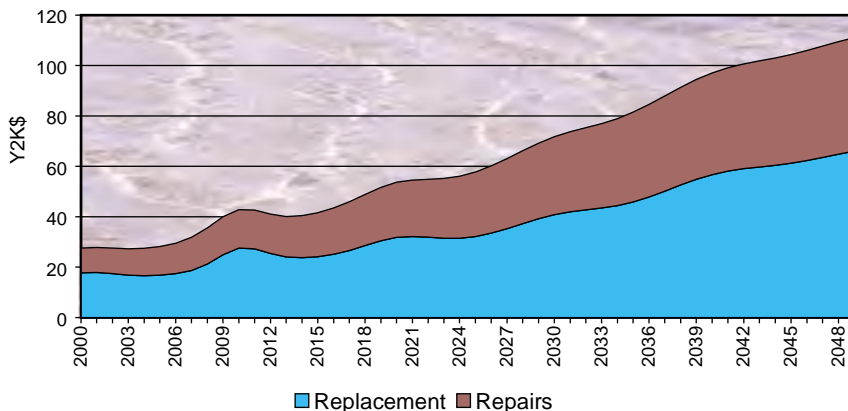
Projected Total Replacement Expenditures Due to Wear-Out



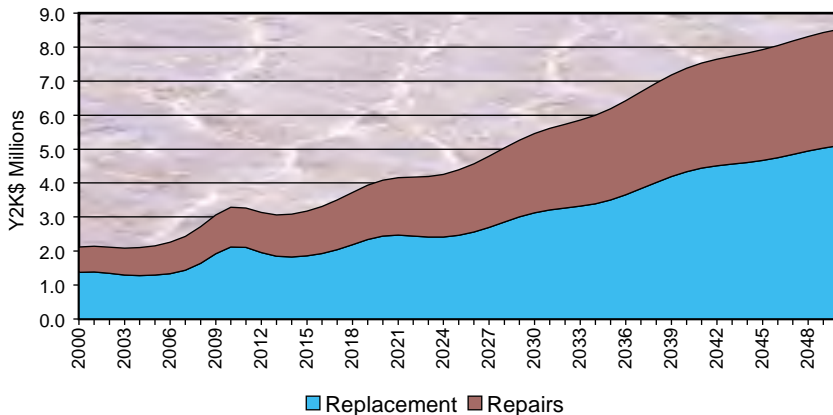
Columbus, Georgia

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$648 M

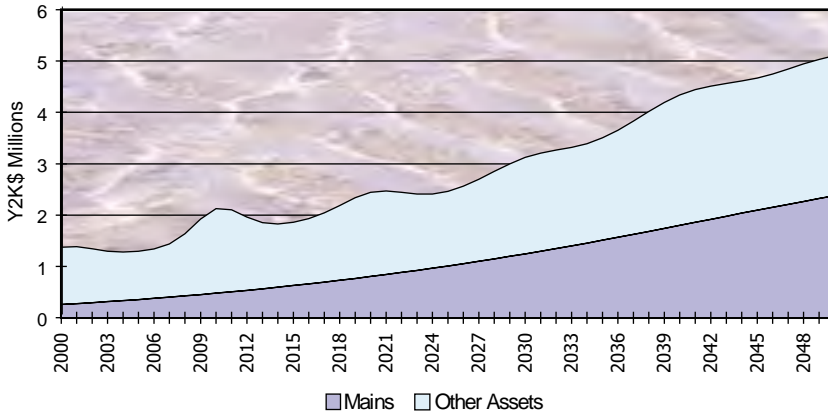
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



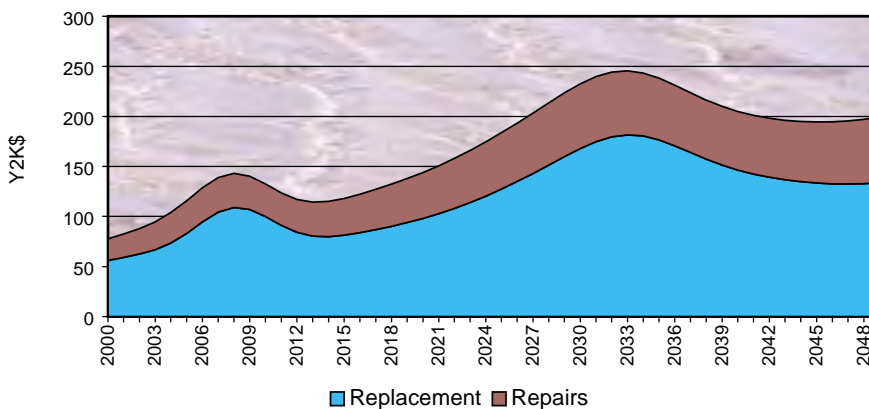
Projected Total Replacement Expenditures Due to Wear-Out



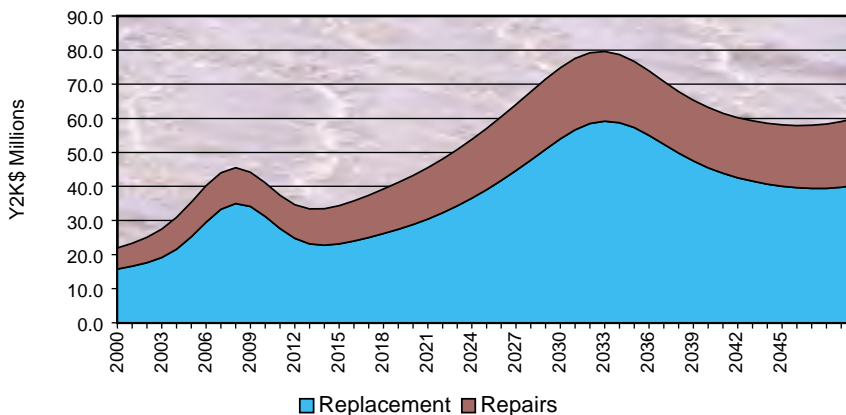
Denver, Colorado

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$5,583 M (Includes Major Dams)

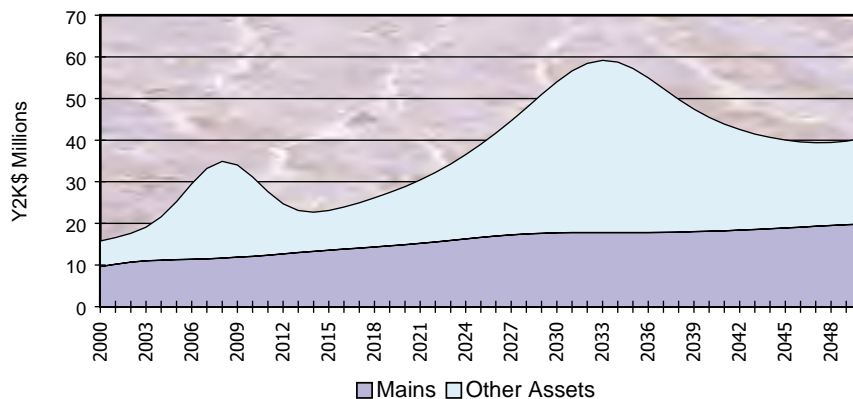
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



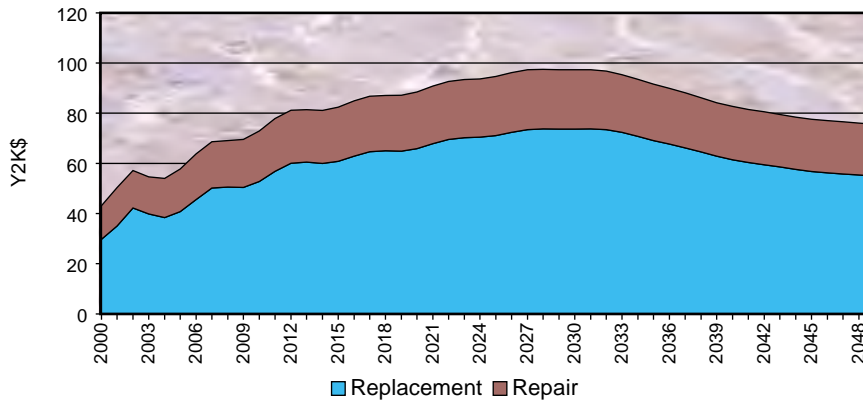
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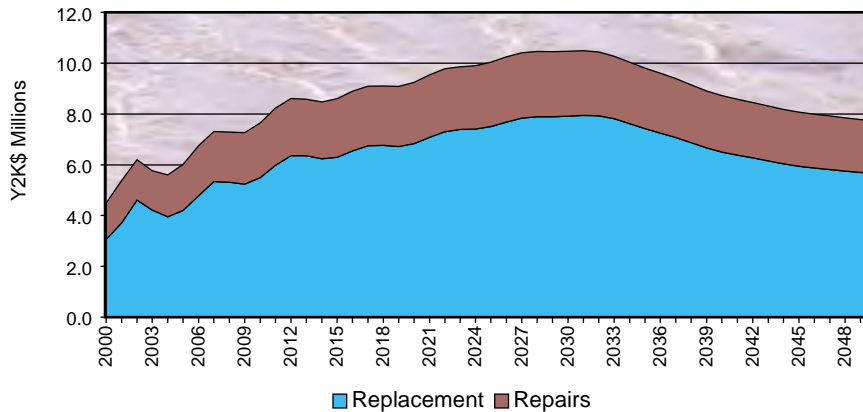
Des Moines, Iowa

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$524 M

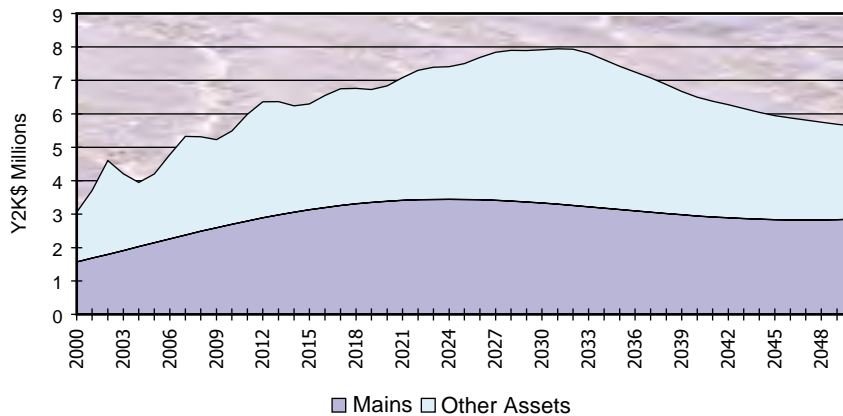
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



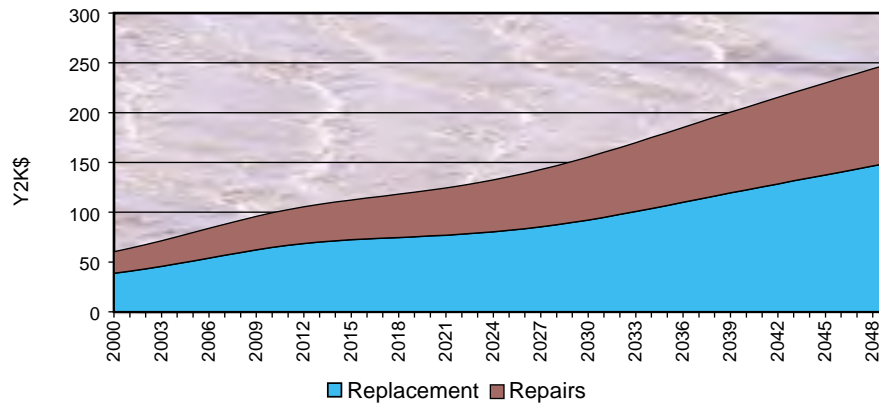
Projected total Replacement Expenditures Due to Wear-Out



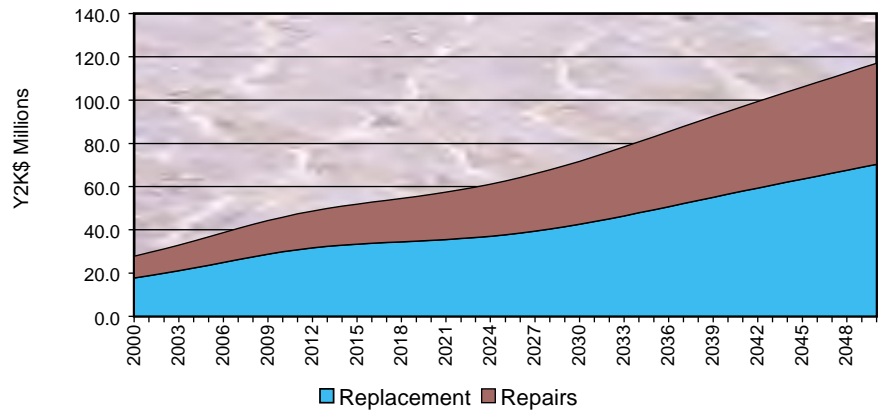
East Bay MUD, Oakland, California

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$8,110 M

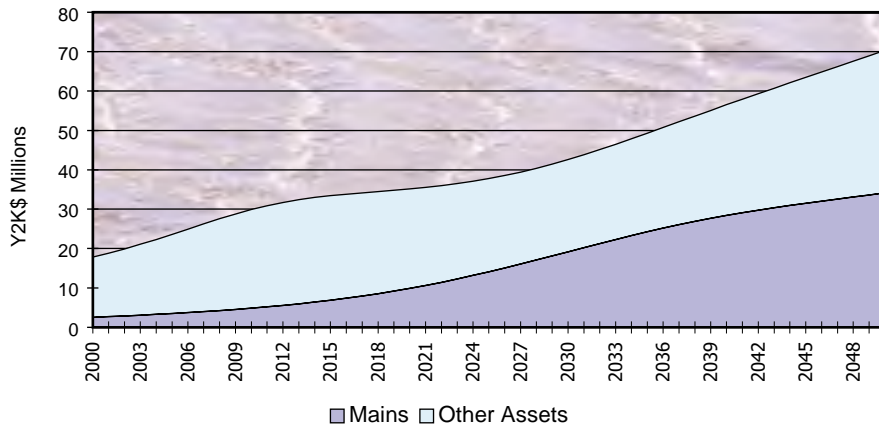
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Projected Total Expenditures Due to Wear-Out



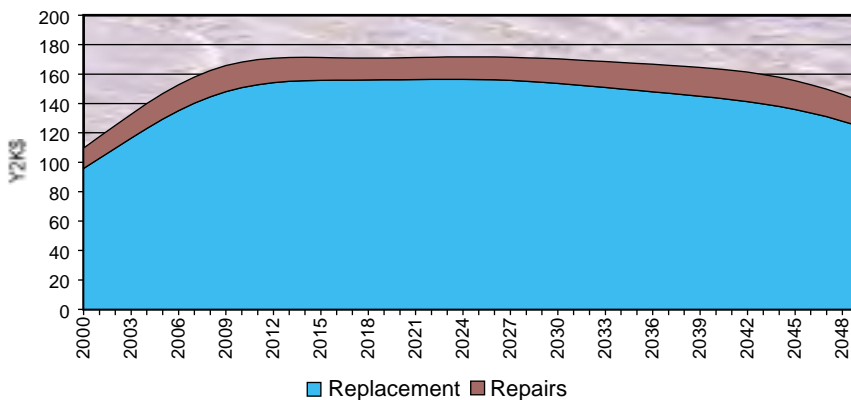
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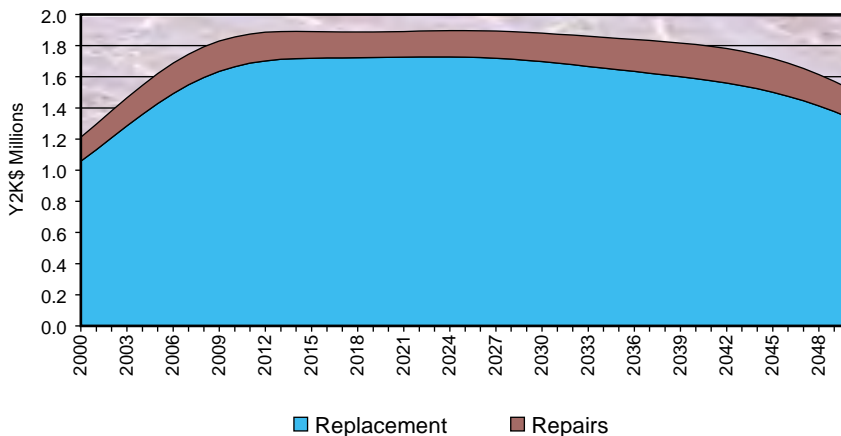
Gloucester, Massachusetts

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$116 M

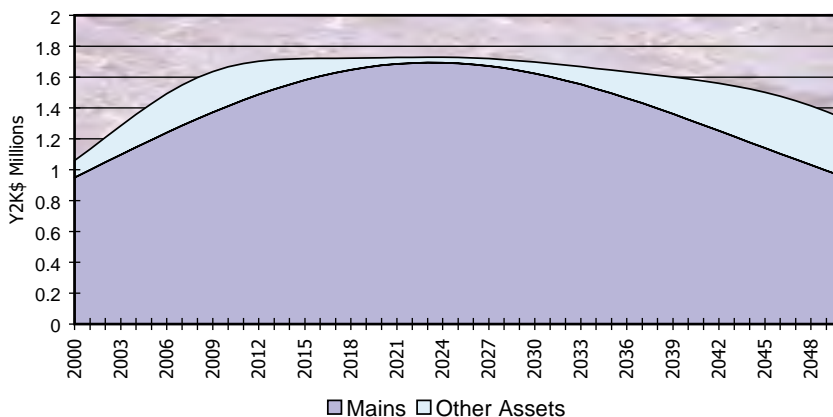
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Projected Total Expenditures Due to Wear-Out



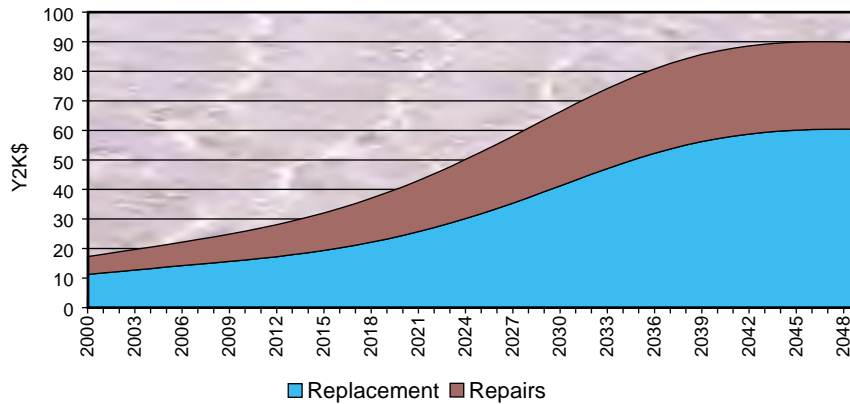
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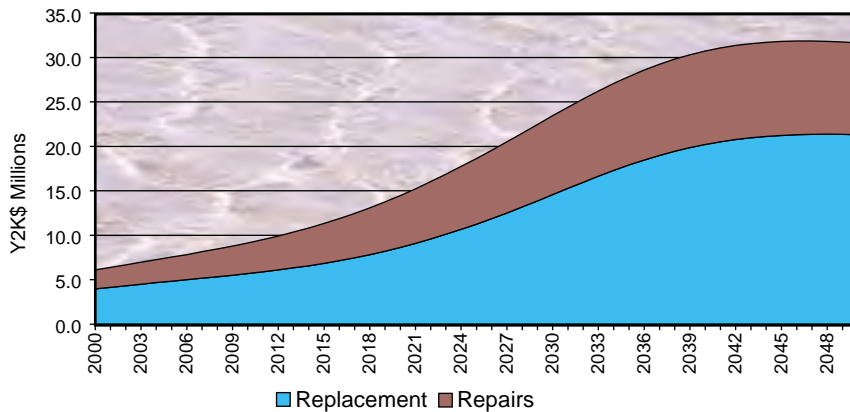
Honolulu, Hawaii

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$1,272 M

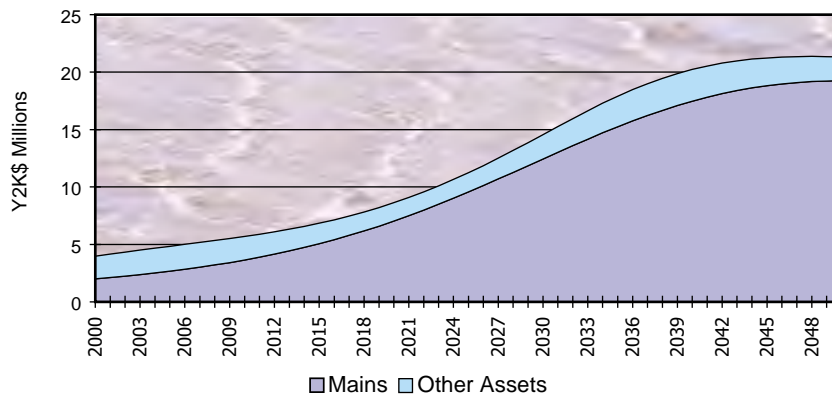
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Projected Total Expenditures Due to Wear-Out



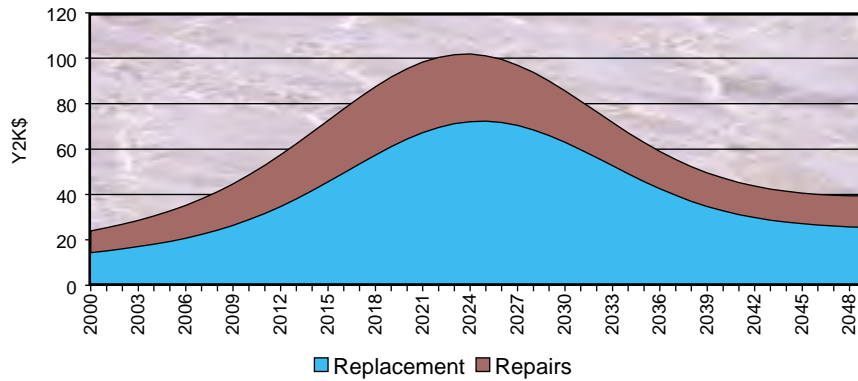
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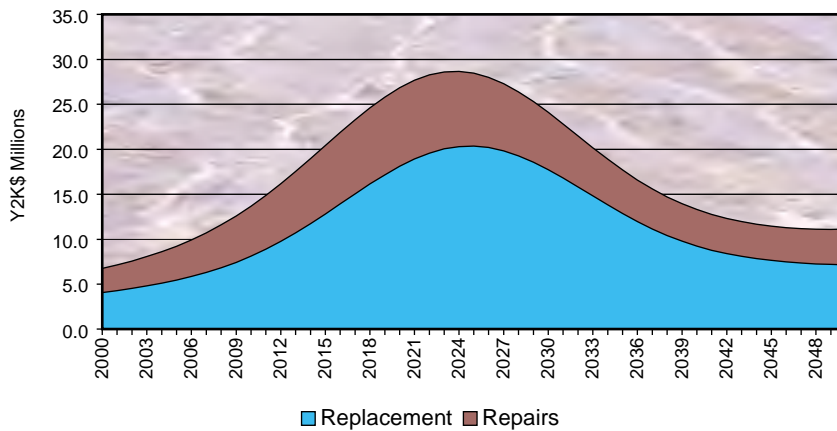
Louisville, Kentucky

Asset Sets Modeled: Water Mains —
 Estimated Replacement Value \$1,343 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



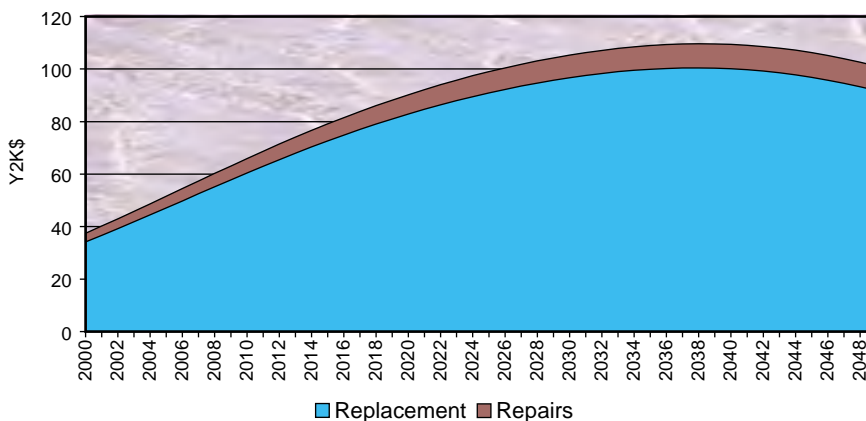
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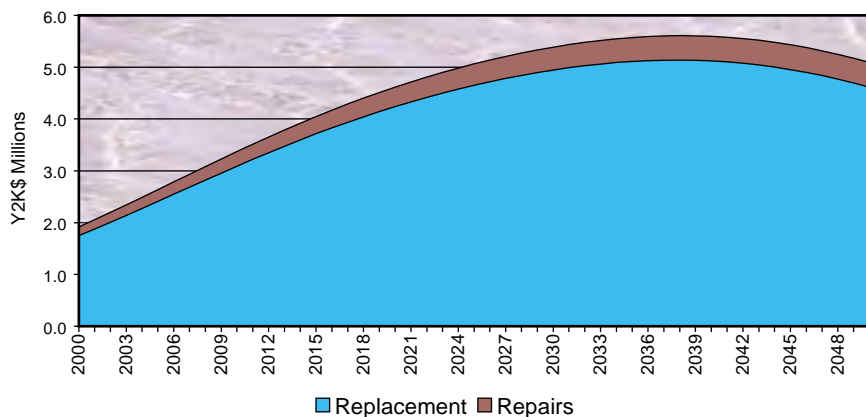
United Water, New Rochelle, New York

Asset Sets Modeled: Water Mains —
 Estimated Replacement Value \$325 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



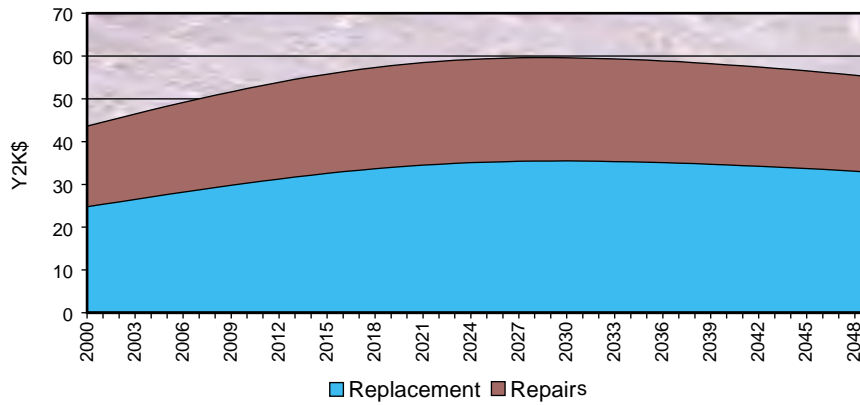
Projected Total Expenditures Due to Wear-Out



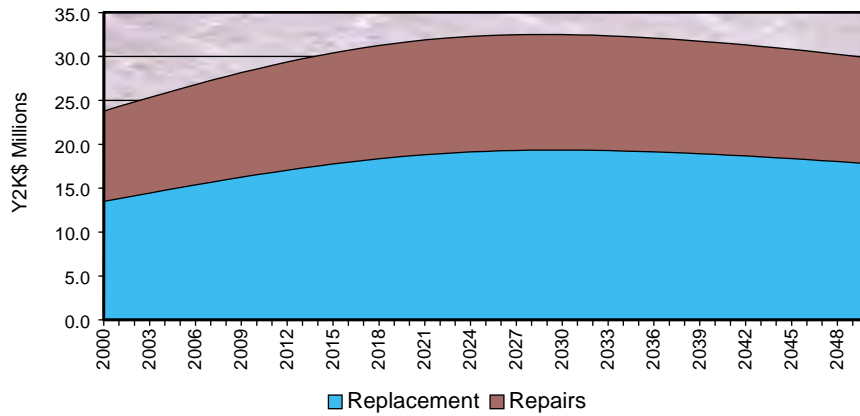
Philadelphia, Pennsylvania

Asset Sets Modeled: Water Mains —
 Estimated Replacement Value \$2,438 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



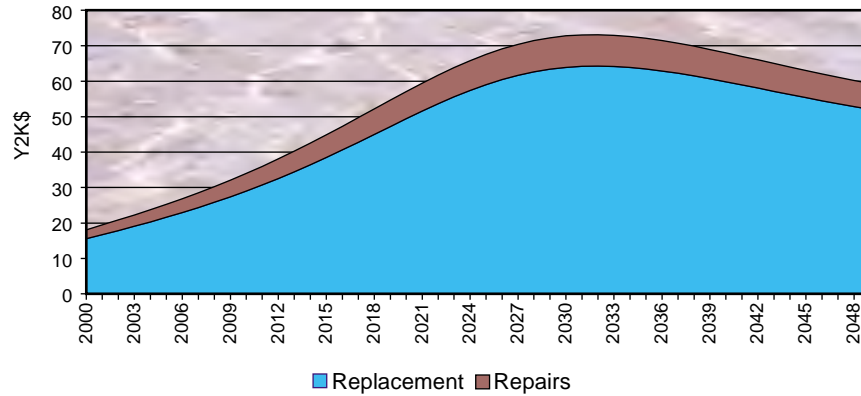
Projected Total Expenditures Due to Wear-Out



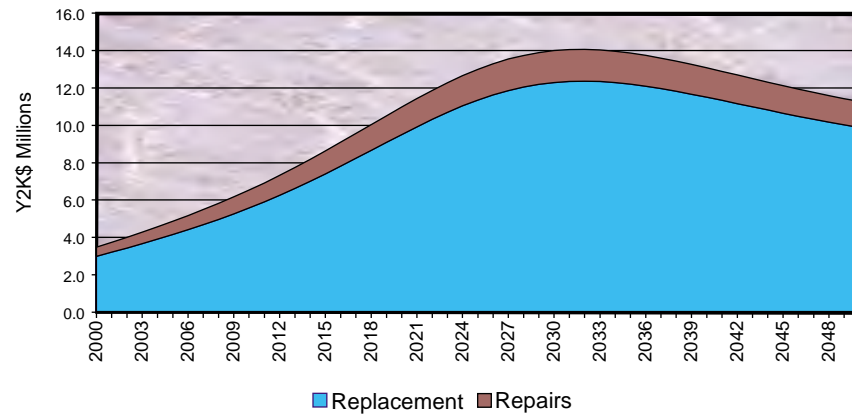
Portland, Oregon

Asset Sets Modeled: Water Mains —
 Estimated Replacement Value \$1,257 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



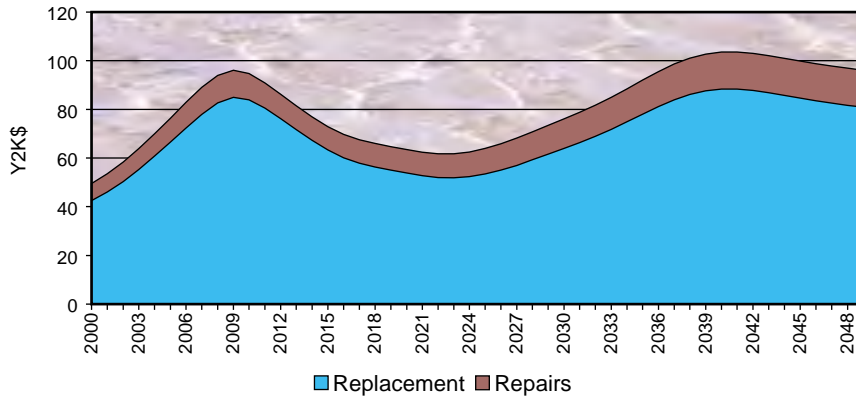
Projected Total Expenditures Due to Wear-Out



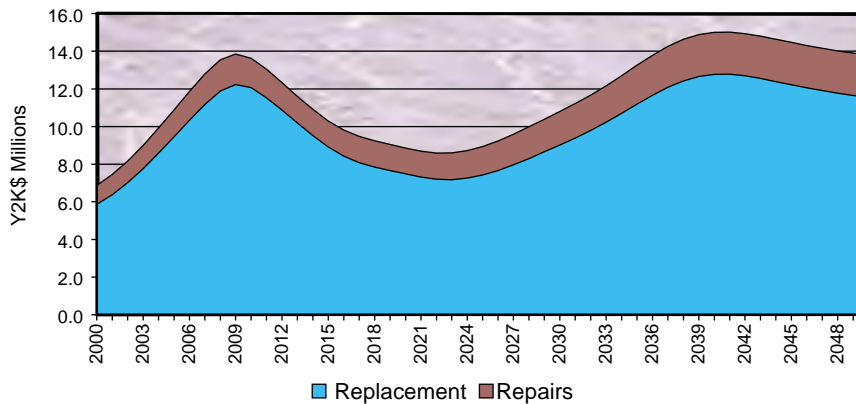
St. Paul, Minnesota

Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$1,005 M

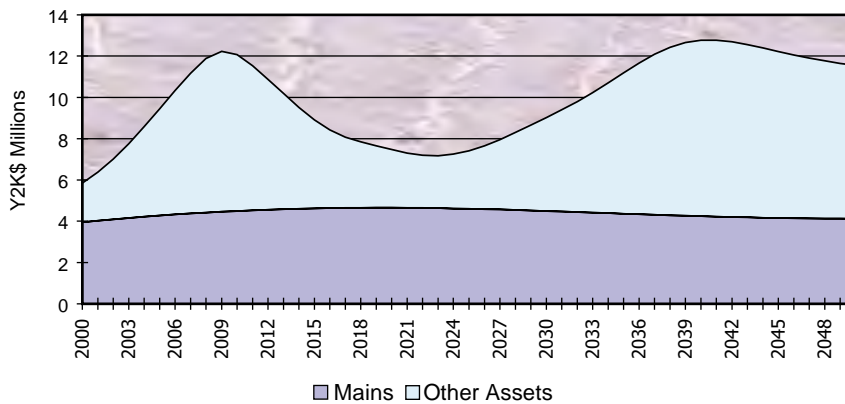
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



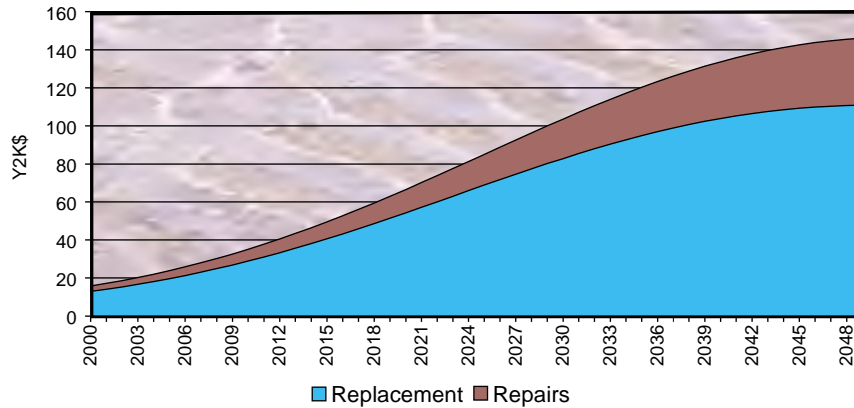
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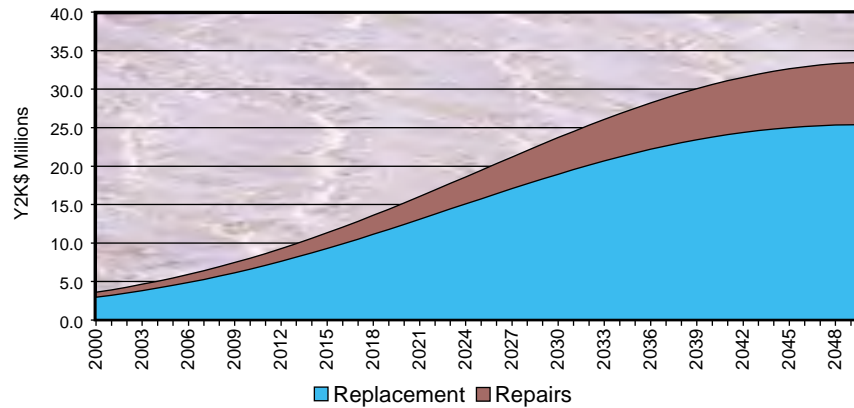
Seattle, Washington

Asset Sets Modeled: Water Mains —
 Estimated Replacement Value \$1,713 M

Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



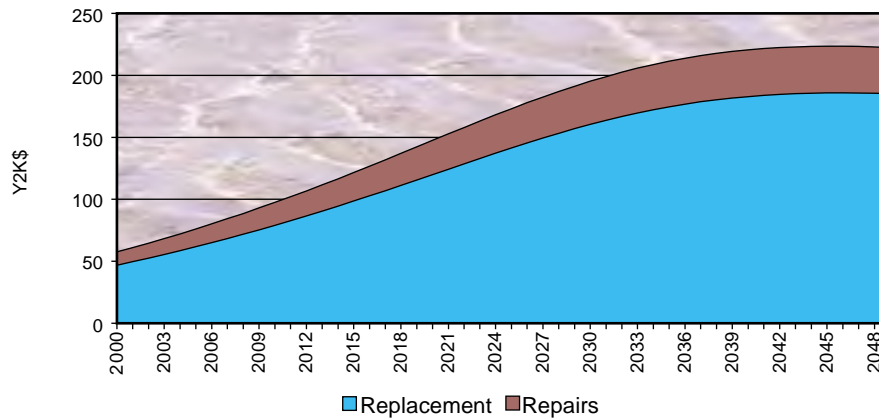
Projected Total Expenditures Due to Wear-Out



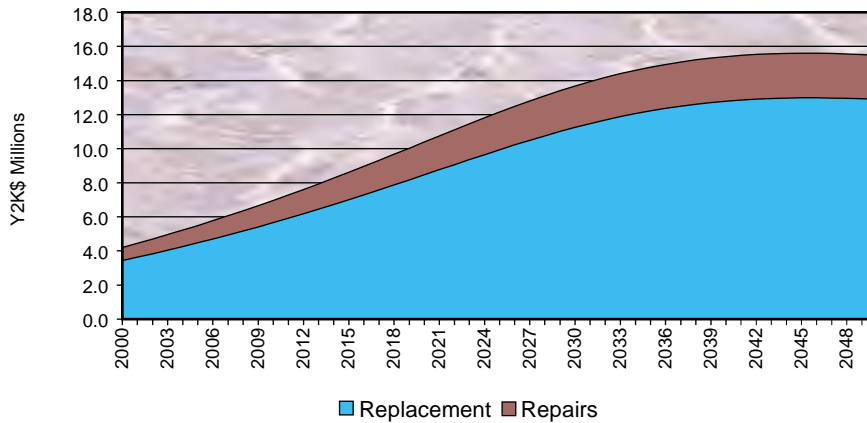
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Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$1,100 M

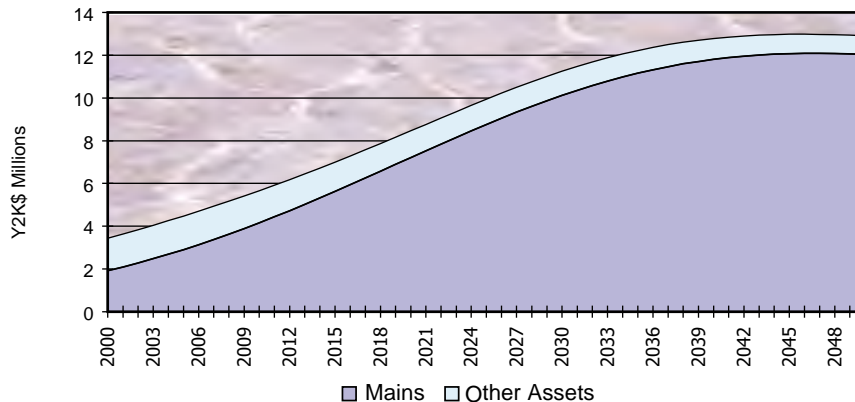
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



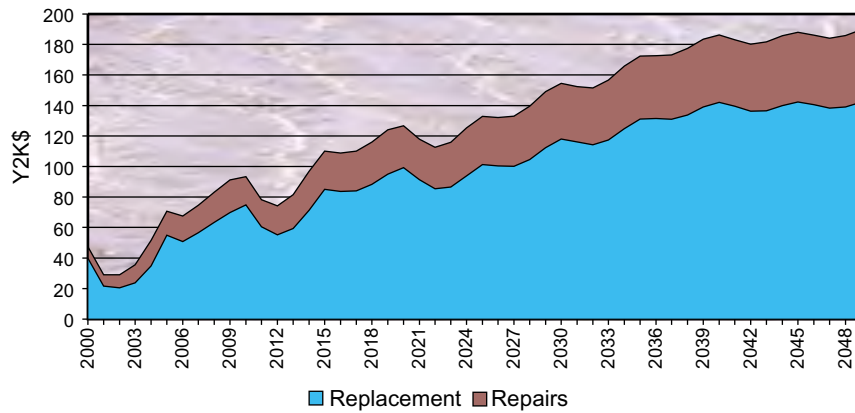
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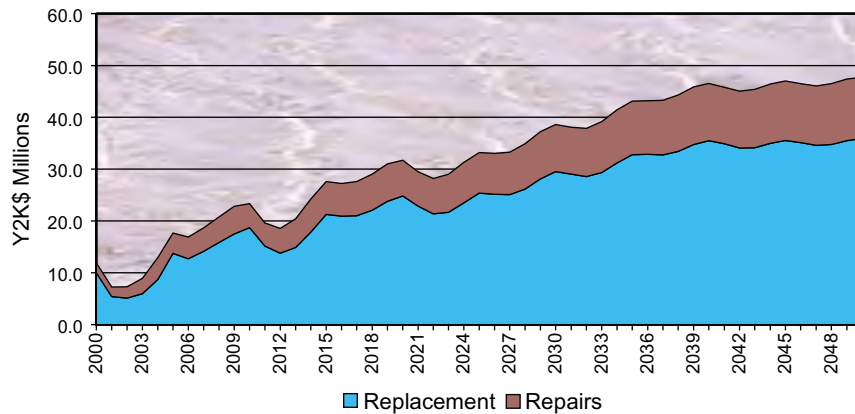
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Asset Sets Modeled: Water Mains & Water Supply Plant —
Estimated Replacement Value \$1,852 M

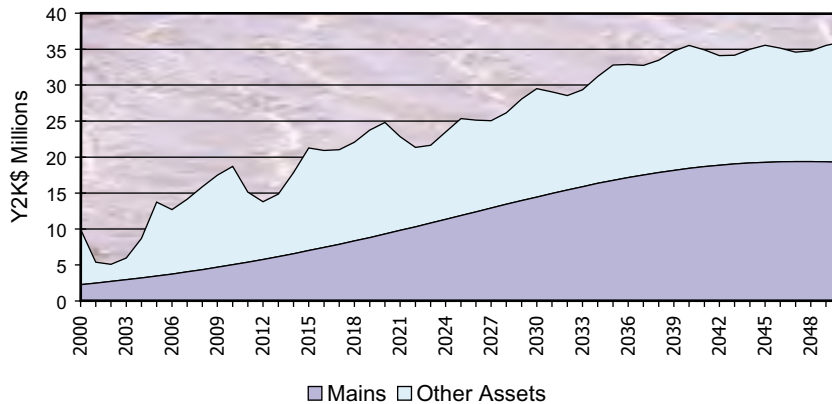
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



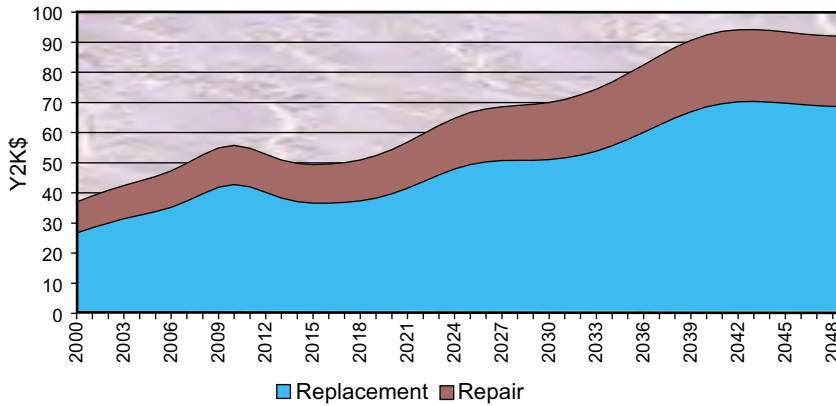
Projected Total Replacement Expenditures Due to Wear-Out



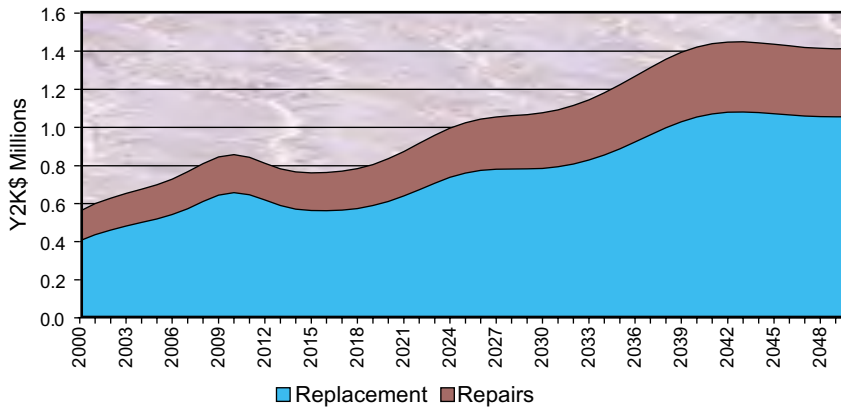
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Estimated Replacement Value \$84 M

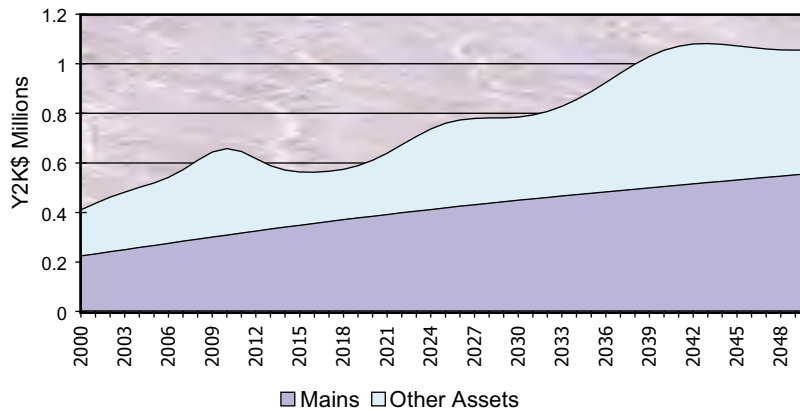
Projected Per Household Expenditures Due to Wear-Out (\$/hh/yr)



Projected Total Expenditures Due to Wear-Out



Projected Total Replacement Expenditures Due to Wear-Out



Reinvesting in Drinking Water Infrastructure

Dawn of the Replacement Era

APPENDIX B

ACKNOWLEDGMENTS

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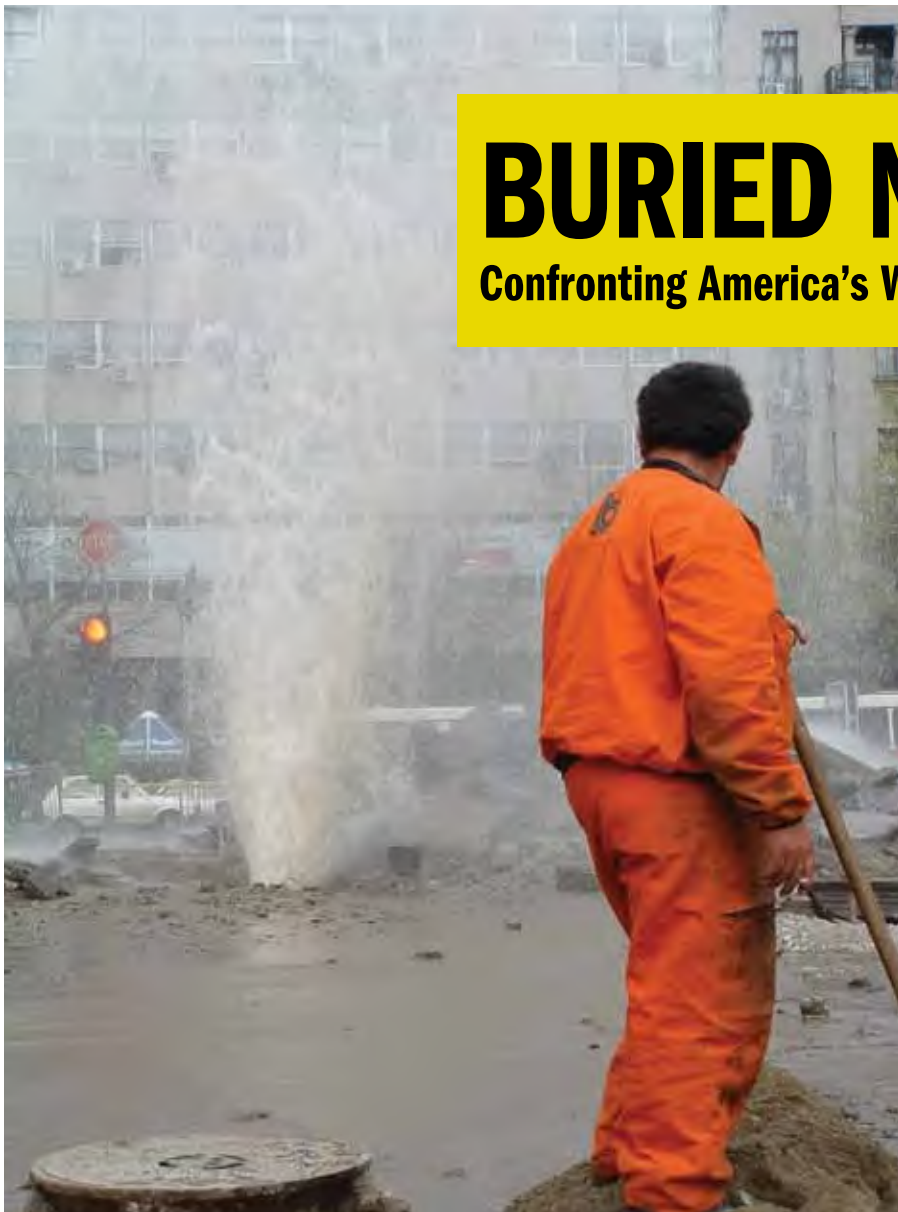
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BURIED NO LONGER: Confronting America's Water Infrastructure Challenge



American Water Works
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The Authoritative Resource on Safe Water®



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This report was developed by the American Water Works Association under the direction of its Water Utility Council, through Stratus Consulting in Boulder, Colorado. Significant portions of the analyses described in this report were initiated or developed by John Cromwell, who unfortunately passed away before this project was completed. John was a true visionary, a wonderful friend and colleague, and an ardent believer in promoting sound management of water system infrastructure. We hope this report does proper service to John's intent, integrity and passion. Special recognition is also due to Bob Raucher, who completed the work with great attention to detail, patience and outstanding professionalism.

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Introduction. A new kind of challenge is emerging in the United States, one that for many years was largely buried in our national consciousness. Now it can be buried no longer. Much of our drinking water infrastructure, the more than one million miles of pipes beneath our streets, is nearing the end of its useful life and approaching the age at which it needs to be replaced. Moreover, our shifting population brings significant growth to some areas of the country, requiring larger pipe networks to provide water service.

As documented in this report, restoring existing water systems as they reach the end of their useful lives and expanding them to serve a growing population will cost at least \$1 trillion over the next 25 years, if we are to maintain current levels of water service. Delaying the investment can result in degrading water service, increasing water service disruptions, and increasing expenditures for emergency repairs. Ultimately we will have to face the need to “catch up” with past deferred investments, and the more we delay the harder the job will be when the day of reckoning comes.

In the years ahead, all of us who pay for water service will absorb the cost of this investment, primarily through higher water bills. The amounts will vary depending on community size and geographic region, but in some communities these infrastructure costs alone could triple the size of a typical family’s water bills. Other communities will need to collect significant “impact” or development fees to meet the needs of a growing population. Numerous communities will need to invest for replacement **and** raise funds to accommodate growth at the same time. Investments that may be required to meet new standards for drinking water quality will add even more to the bill.

Although the challenge to our water infrastructure has been less visible than other infrastructure concerns, it’s no less important. Our water treatment and delivery systems provide public health protection, fire protection, economic prosperity and the high quality of life we enjoy. Yet most Americans pay less than \$3.75 for every 1,000 gallons of safe water delivered to their taps.

This report demonstrates that as a nation, we need to bring the conversation about water infrastructure above ground. Deferring needed investments today will only result in greater expenses tomorrow and pass on a greater burden to our children and grandchildren. It’s time to confront America’s water infrastructure challenge.

The Era of Infrastructure Replacement. More than a decade ago the American Water Works Association (AWWA) announced that a new era was dawning: the replacement era, in which our nation would need to begin rebuilding the water and wastewater systems bequeathed to us by earlier generations. Our seminal report—*Dawn of the Replacement Era*—demonstrated that significant investments will be required in coming decades if we are to maintain the water and wastewater systems that are so essential to our way of life.



The *Dawn* report examined 20 water systems, using a relatively new technique to build what came to be called a “Nessie Curve” for each system. The Nessie Curve, so called because the graph follows an outline that someone likened to a silhouette of the Loch Ness Monster, revealed that each of the 20 water systems faced unprecedented needs to rebuild its underground water infrastructure—its pipe network. For each system, the future investment was an “echo” of the demographic history of the community, reflecting succeeding generations of pipe that were laid down as the community grew over many years. Most of those generations of pipe were shown to be coming to an end of their useful service lives in a relatively compressed period. Like the pipes themselves, the need for this massive investment was mostly buried and out of sight. But it threatens our future if we don’t elevate it and begin to take action now.

The present report was undertaken to extend the *Dawn* report beyond those 20 original cities and encompass the entire United States. The results are startling. They confirm what every water utility professional knows: we face the need for massive reinvestment in our water infrastructure over the coming decades. The pipe networks that were largely built and paid for by earlier generations—and passed down to us as an inheritance—last a long time, but they are not immortal. The nation’s drinking water infrastructure—especially the underground pipes that deliver safe water to America’s homes and businesses—is aging and in need of significant reinvestment. Like many of the roads, bridges, and other public assets on which the country relies, most of our buried drinking water infrastructure was built 50 or more years ago, in the post-World War II era of rapid demographic change and economic growth. In some older urban areas, many water mains have been in the ground for a century or longer.



Given its age, it comes as no surprise that a large proportion of US water infrastructure is approaching, or has already reached, the end of its useful life. The need to rebuild these pipe networks must come on top of other water investment needs, such as the need to replace water treatment plants and storage tanks, and investments needed to comply with standards for drinking water quality. They also come on top of wastewater and stormwater investment needs which—judging from the US Environmental Protection Agency’s (USEPA) most recent “gap analysis”—are likely to be as large as drinking water needs over the coming decades. Moreover, both water and wastewater infrastructure needs come on top of the other vital community infrastructures, such as streets, schools, etc.

Prudent planning for infrastructure renewal requires credible, analysis-based estimates of where, when, and how much pipe replacement or expansion for growth is required. This report summarizes a comprehensive and robust national-level analysis of the cost, timing, and location of the investments necessary to renew water mains over the coming decades. It also examines the additional pipe investments we can anticipate to meet projected population growth, regional population shifts, and service area growth through 2050.

This analysis is based on the insight that there will be “demographic echoes” in which waves of reinvestment are driven by a combination of the original patterns of pipe investment, the pipe materials used, and local operating environments. The report examines the reinvestment demands implied by these factors, along with population trends, in order to estimate needs for pipe replacement and concurrent investment demands to accommodate population growth.

Although this report does not substitute for a careful and detailed analysis at the utility level as a means of informing local decisions, it constitutes the most thorough and comprehensive analysis ever undertaken of the nation’s drinking water infrastructure renewal needs. The keys to our analysis include the following:

1. Understanding the original timing of water system development in the United States.
2. Understanding the various materials from which pipes were made, and where and when the pipes of each material were likely to have been installed in various sizes.
3. Understanding the life expectancy of the various types and sizes of pipe (“pipe cohorts”) in actual operating environments.
4. Understanding the replacement costs for each type and size of pipe.
5. Developing a probability distribution for the “wear-out” of each pipe cohort.



Methodology

For this report, we differentiated across four water system size categories*:

- Very small systems (serving fewer than 3,300 people, representing 84.5% of community water systems).
- Small systems (3,300 to 9,999 served, representing 8.5% of community water systems).
- Medium-size systems (10,000 to 49,999 served, representing over 5.5% of systems). And,
- Large systems (serving more than 50,000 people, representing 1.5% of community water systems).

** Note that the water system size categories used in this analysis are not identical to the size categories USEPA uses for regulatory purposes. Note also that although data were analyzed based on these four size categories, some of the graphs that accompany this report combine medium-size and small systems. This is done for simplicity in the visual presentation, when the particular dynamics being represented are closely similar for medium-size and small systems.*

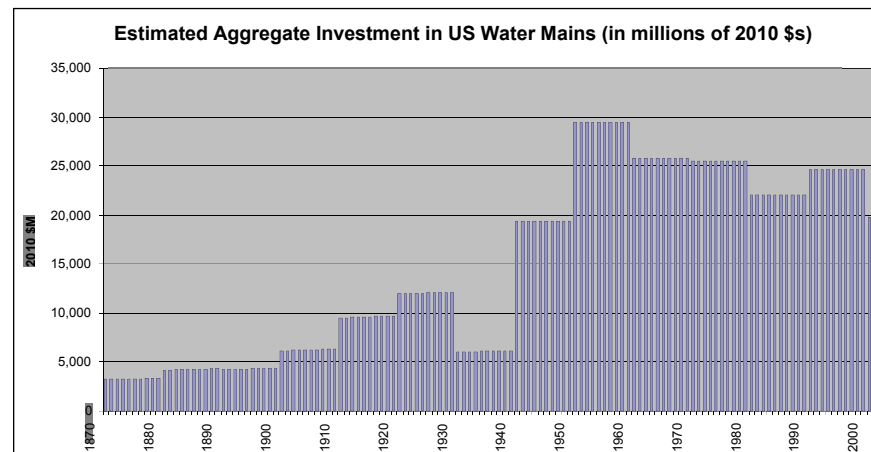
Next, we divided the country into four regions (Northeast, Midwest, South, and West), as shown in Figure 1. These regions are not equal in population, but they roughly share certain similarities, including their population dynamics and the

Figure 1: Regions Used in This Report



historical patterns of pipe installation driven by those dynamics. Data published by USEPA, the water industry, and the US Census Bureau were tapped to obtain a solid basis for regional pipe installation profiles by system size and pipe diameter. The US Census Bureau has produced a number of retrospective studies of the changes in urban and rural circumstances between 1900 and 2000 that proved especially useful in this analysis. The report also used the AWWA Water/Stats database, the USEPA Community Water Supply Survey, and data from the 2002 Public Works Infrastructure Survey (PWIS) as essential inputs in the analysis.

Figure 2: Historic Investment Profile for All US Water Systems, 1850-2000



In addition, we conducted a limited survey of professionals in the field concerning pipe replacement issues and other relevant “professional knowledge.” The national aggregate for the original investment in all types and sizes of pipes is shown in Figure 2, while Figure 3 shows the aggregate current replacement value of water pipes by pipe material and utility size, totaling over \$2.1 trillion.

Figure 3: Aggregate Replacement Value of Water Pipes by Pipe Material and Utility Size (millions 2010 \$s)

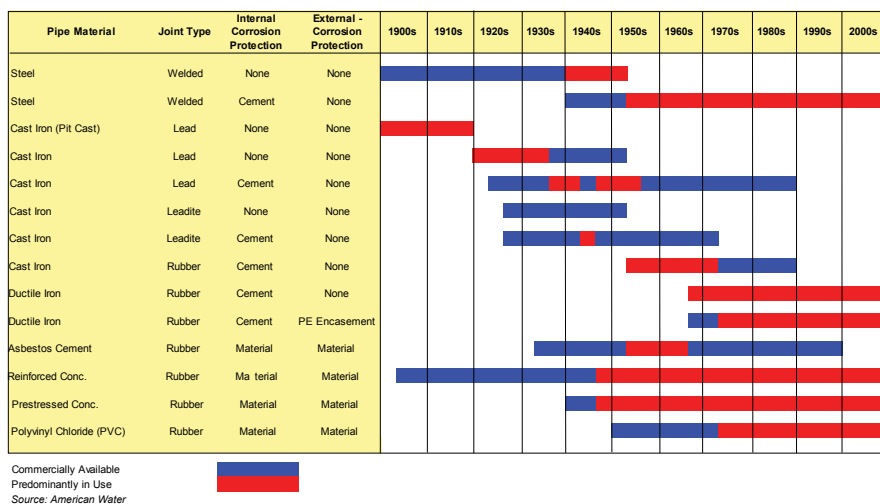
Region	CI	CICL	DI	AC	PV	Steel	PCCP	TOTAL
Northeast Large	48,958	8,995	5,050	2,308	1,875	335	0	67,522
Northeast Medium & Small	66,357	61,755	28,777	26,007	16,084	5,533	6,899	211,411
Northeast Very Small	14,491	15,992	10,661	7,281	7,937	329	462	57,152
Midwest Large	37,413	9,151	3,077	2,504	1,098	784	512	54,539
Midwest Medium & Small	74,654	92,106	51,577	37,248	30,506	8,682	11,152	305,925
Midwest Very Small	37,597	28,943	25,464	12,428	19,720	601	828	125,581
Southeast Large	30,425	28,980	29,569	21,229	14,936	9,337	7,227	141,703
South Medium & Small	54,772	98,608	140,079	103,659	102,804	21,394	17,160	538,475
South Very Small	43,183	24,998	49,791	34,529	47,823	1,461	1,244	203,028
West Large	15,448	16,055	28,949	14,774	14,723	7,443	6,215	103,607
West Medium & Small	15,775	50,145	70,355	50,541	48,885	12,276	9,806	257,782
West Very Small	16,344	11,199	17,910	13,166	17,245	545	453	76,862
Total	455,416	446,927	461,258	325,674	323,637	68,719	61,957	2,143,589

CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

Finally, we used historical data on the production and use of seven major types of pipe with 14 total variations (Figure 4) to estimate what kinds of pipe were installed in water systems in particular years. This was validated by field checking with a sample of water utilities as well as checking against the original Nessie analysis. Together these steps resulted in the development of 16 separate inventories (four regions with four utility sizes in each region), with seven types of pipe in each inventory, thus providing the most comprehensive picture of the nation's water pipe inventory ever assembled. Note that in some of the report's graphs, "long-" and "short-lived" versions of certain pipe materials are combined, for purposes of visual simplicity in the presentation.

In order to consider growth, it was also necessary to examine population trends across rural, suburban, and urban settings over the past century. US Census Bureau

Figure 4: Historic Production and Use of Water Pipe by Material





projections of demographic trends allowed the development of infrastructure need profiles for growth through 2050 in each of the regions and utility size categories (for the latter purpose, city size was used as a proxy for utility size).

The study generally assumes that utilities continue efforts to manage the number of main breaks that occur per mile of pipe rather than absorb increases in pipe failures. That is, the study assumes utilities will strive to maintain current levels of service rather than allow increasing water service outages. We assume that each utility’s objective is to make these investments at the optimal time for maintaining current service levels and to avoid replacing pipes while the repairs are still cost-effective. Ideally, pipe replacement occurs at the end of a pipe’s “useful life”;

that is, the point in time when replacement or rehabilitation becomes less expensive in going forward than the costs of numerous unscheduled breaks and associated emergency repairs.

With this data in hand and using the assumptions above, we projected the “typical” useful service life of the pipes in our inventory using the “Nessie Model”™. The model embodies pipe failure probability distributions based on many utilities’ current operating experiences, coupled with insights from extensive research and professional experiences with typical pipe

conditions at different ages and sizes, according to pipe material. The analysis used seven different types of pipe in three diameters and addressed pipe inventories dating back to 1870. Estimated typical service lives of pipes are

Figure 5: Average Estimated Service Lives by Pipe Materials (average years of service)

Derived Current Service Lives (Years)	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	DI (SSL)	AC (LSL)	AC (SSL)	PVC	Steel	Conc & PCCP
Northeast Large	130	120	100	110	50	80	80	100	100	100
Midwest Large	125	120	85	110	50	100	85	55	80	105
South Large	110	100	100	105	55	100	80	55	70	105
West Large	115	100	75	110	60	105	75	70	95	75
Northeast Medium & Small	115	120	100	110	55	100	85	100	100	100
Midwest Medium & Small	125	120	85	110	50	70	70	55	80	105
South Medium & Small	105	100	100	105	55	100	80	55	70	105
West Medium & Small	105	100	75	110	60	105	75	70	95	75
Northeast Very Small	115	120	100	120	60	100	85	100	100	100
Midwest Very Small	135	120	85	110	60	80	75	55	80	105
South Very Small	130	110	100	105	55	100	80	55	70	105
West Very Small	130	100	75	110	60	105	65	70	95	75

LSL indicates a relatively long service life for the material resulting from some combination of benign ground conditions and evolved laying practices etc.
SSL indicates a relatively short service life for the material resulting from some combination of harsh ground conditions and early laying practices, etc.

Figure 6: Aggregate Needs for Investment in Water Mains Through 2035 and 2050, by Region

2011-2035 Totals			
(2010 \$M)	Replacement	Growth	Total
Northeast	\$92,218	\$16,525	\$108,744
Midwest	\$146,997	\$25,222	\$172,219
South	\$204,357	\$302,782	\$507,139
West	\$82,866	\$153,756	\$236,622
Total	\$526,438	\$498,285	\$1,024,724

2011-2050 Totals			
(2010 \$M)	Replacement	Growth	Total
Northeast	\$155,101	\$23,200	\$178,301
Midwest	\$242,487	\$36,755	\$279,242
South	\$394,219	\$492,493	\$886,712
West	\$159,476	\$249,794	\$409,270
Total	\$951,283	\$802,242	\$1,753,525

reflected in Figure 5. Note that the *actual* lives of pipes may be quite different in a given utility. Because pipe life depends on many important local variables as well as upon utility practices, predicting the actual life expectancy of any given pipe is outside the scope of this study. Many utilities will have pipes that last much longer than these values suggest while others will have pipes that begin to fail sooner. However, these values have been validated as national “averages” by comparing them to actual field experience in a number of utilities throughout the country. The model also includes estimates of the indicative costs to replace each size category of pipe, as well as the cost to repair the projected number of pipe breaks over time according to pipe size.

The analysis of pipe replacement needs is compiled in the Nessie Model by combining the demographically based pipe inventories with the projected effective service lifetimes for each pipe type. This yields an estimate of how much pipe of each size in each region must be replaced in each of the coming 40 years. Factoring in the typical cost to replace these pipes, we derive an estimate of the total investment cost for each future year. The model then derives a series of graphs (the Nessie curves) that depict the amount of spending required in each future year to replace each of the different pipe types by utility size and region. Aggregating this information, we derived the dollar value of total drinking water infrastructure replacement needs over the coming 25 and 40 years for each utility size category per region, and for the United States.



Key Findings

1. The Needs Are Large. Investment needs for buried drinking water infrastructure total more than \$1 trillion nationwide over the next 25 years, assuming pipes are replaced at the end of their service lives and systems are expanded to serve growing populations. Delaying this investment could mean either increasing rates of pipe breakage and deteriorating water service, or suboptimal use of utility funds, such as paying more to repair broken pipes than the long-term cost of replacing them. Nationally, the need is close to evenly divided between replacement due to wear-out and needs generated by demographic changes (growth and migration).

Over the coming 40-year period, *through 2050*, these needs exceed \$1.7 trillion. Replacement needs account for about 54% of the national total, with about 46% attributable to population growth and migration over that period.

Figure 6 (previous page) shows aggregate needs for investment in water mains through 2050, due to wear-out and population growth.

2. Household Water Bills Will Go Up. Important caveats are necessary here, because there are many ways that the increased investment in water infrastructure can be allocated among customers. Variables include rate structures, how the investment is financed, and other important local factors. But the level of investment required to replace worn-out pipes and maintain current levels of water service *in the most affected communities could in some cases triple household water bills*. This projection assumes the costs are spread evenly across the population in a “pay-as-you-go” approach (See “The Costs Keep Coming” below). Figures 7 and 8 illustrate the increasing cost of water that can be expected by households for replacement, and for replacement plus growth, respectively. The utility categories shown in these figures are presented to depict a range of household cost impacts, from the least-to-the-most affected utilities.

Figure 7: Costs per Household for Water Main Replacement by Utility Size and Region

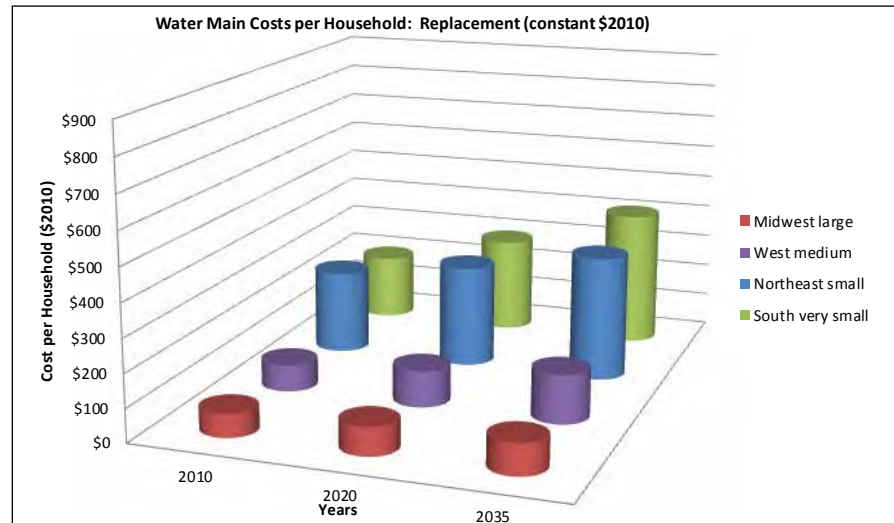
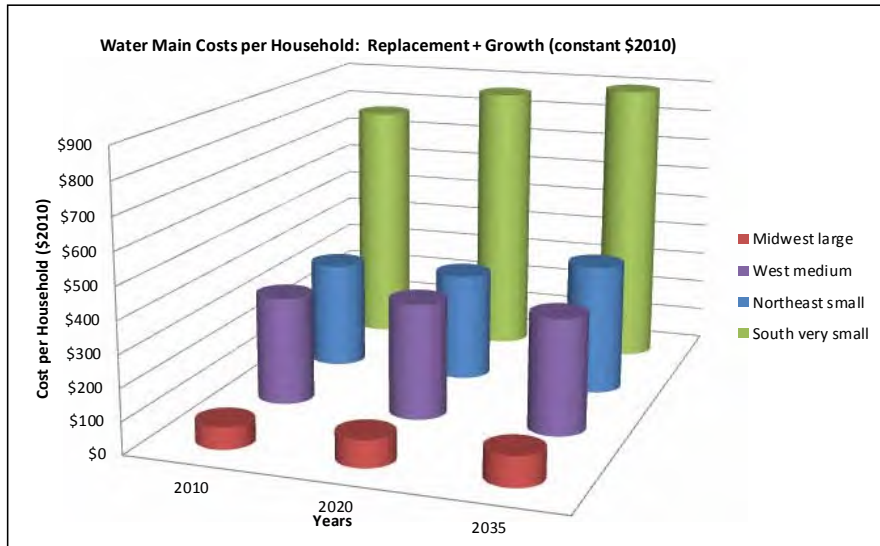


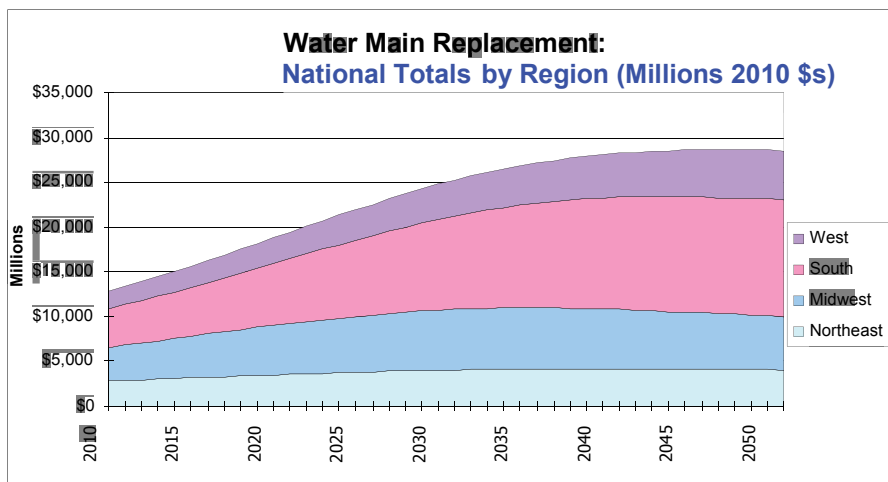
Figure 8: Costs per Household for Water Main Replacement Plus Growth



With respect to the cost of growth, other caveats are important. Many communities expect growth to pay or help pay for itself through developer fees, impact fees, or similar charges. In such communities, established residents will not be required to shoulder the cost of population growth to the extent that these fees recover those costs. *But regardless of how the costs of replacement and growth are allocated among builders, newcomers, or established residents, the total cost that must be borne by the community will still rise.*

3. There Are Important Regional Differences. The growing national need affects different regions in different ways. In general, the South and the West will face the steepest investment challenges, with total needs accounting for considerably more than half the national total (see Figures 6 and 9). This is largely attributable to the fact that the population of these regions is growing rapidly. In contrast, in the Northeast and Midwest, growth is a relatively small component of the projected need. However, the population shifts away from these regions complicate the infrastructure challenge, as there are fewer remaining local customers across whom to spread the cost of renewing their infrastructure.

Figure 9: Water Main Replacement Costs per Region



This regional perspective reveals the inherent difficulty of managing infrastructure supply and demand. Although water pipes are fixed in place and long-lasting, the population that drives the demand for these assets is very mobile and dynamic. People move out of one community, leaving behind a pipe network of fixed size but with fewer customers to support it. They move into a new community, requiring that the water system there be expanded to serve the new customers.

4. There Are Important Differences Based on System Size.

As with many other costs, *small communities may find a steeper challenge ahead on water infrastructure*. Small communities have fewer people, and those people are often more spread out, requiring more pipe “miles per customer” than larger systems. In the most affected small communities, the study suggests that a typical three-person household could see its drinking water bill increase by as much as \$550 per year above current levels, simply to address infrastructure needs, depending as always on the caveats identified above.

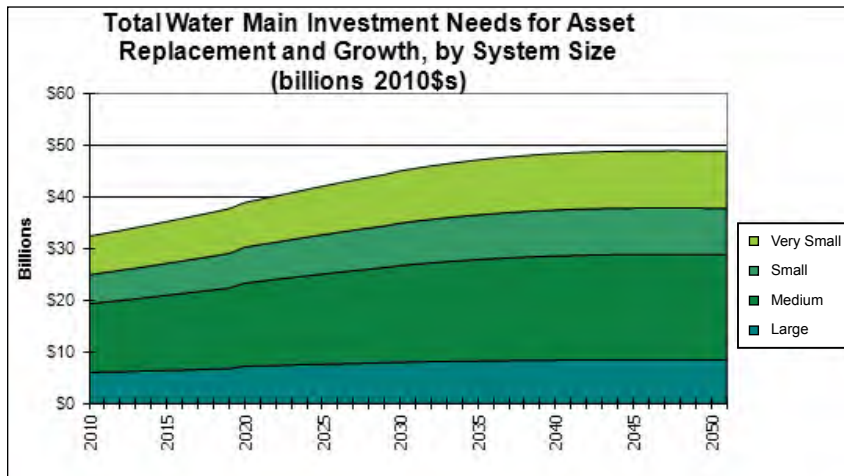
In the largest water systems, costs can be spread over a large population base. Needed investments would be consistent with annual per household

cost increases ranging from roughly \$75 to more than \$100 per year by the mid-2030s, assuming the expenses were spread across the population in the year they were incurred. Figure 10 illustrates the differing total costs of required investment by system size.

5. The Costs Keep Coming. The national-level investment we face will roughly double from about \$13 billion a year in 2010 to almost \$30 billion annually by the 2040s for replacement alone. If growth is included, needed investment must increase from a little over \$30 billion today to nearly \$50 billion over the same period. This level of investment must then be sustained for many years, if current levels of water service are to be maintained. *Many utilities will have to face these investment needs year after year, for at least several decades.* That is, by the time the last cohort of pipes analyzed in this study (predominantly the pipes laid between the late 1800s and 1960) has been replaced in, for example, 2050, it may soon thereafter be time to begin replacing the pipes laid after 1960, and so on. In that respect, these capital outlays are unlike those

required to build a new treatment plant or storage tank, where the capital costs are incurred up front and aren’t faced again for many years. Rather, infrastructure renewal investments are likely to be incurred each year over several decades. For that reason, *many utilities may choose to finance infrastructure replacement on a “pay-as-you-go” basis rather than through debt financing.*



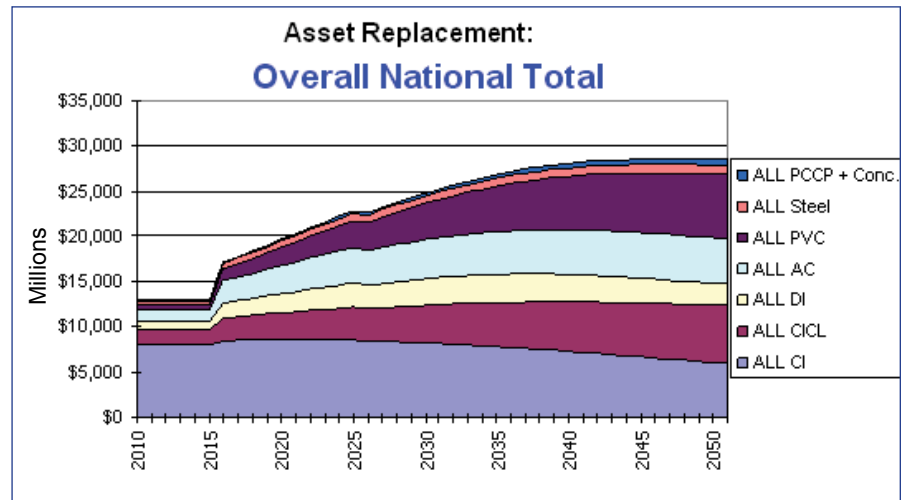
Figure 10: Total Water Main Replacement and Growth Needs by System Size

6. Postponing Investment Only Makes the Problem Worse.

Overlooking or postponing infrastructure renewal investments in the near term will only add to the scale of the challenge we face in the years to come. Postponing the investment steepens the slope of the investment curve that must ultimately be met, as shown in Figure 11 (next page). It also increases the odds of facing the high costs associated with water main breaks and other infrastructure failures. The good news is that *not all of the \$1 trillion investment through 2035 must be made right now*. There is time to make suitable plans and implement policies that will help address the longer-term challenge. The bad news is that the required investment level is growing, as more pipes continue to age and reach the end of their effective service lives.

As daunting as the figures in this report are, the prospect of not making the necessary investment is even more chilling. Aging water mains are subject to more frequent breaks and other failures that can threaten public health and safety (such as compromising tap water quality and fire-fighting flows). Buried infrastructure failures also may impose significant damages (for example, through flooding and sinkholes), are costly to repair, disrupt businesses and residential communities, and waste precious water resources. These maladies weaken our economy and undermine our quality of life. As large as the cost of reinvestment may be, **not** undertaking it will be worse in the long run by almost any standard.

This suggests that a crucial responsibility for utility managers now and in the future is to develop the processes necessary to continually improve their understanding of the “replacement dynamics” of their own water systems. Those dynamics should be reflected in an Asset Management Plan (AMP) and, of course, in a long-term capital investment plan. The 2006 AWWA Report *Water Infrastructure at a Turning Point* includes a full discussion of this issue.

Figure 11: Effect of Deferring Investment Five Years with a Ten-Year Make-Up Period

Conclusion

Because pipe assets last a long time, water systems that were built in the latter part of the 19th century and throughout much of the 20th century have, for the most part, never experienced the need for pipe replacement on a large scale. The dawn of the era in which these assets will need to be replaced puts a growing financial stress on communities that will continually increase for decades to come. It adds large and hitherto unknown expenses to the more apparent above-ground spending required to meet regulatory standards and address other pressing needs.



It is important to reemphasize that there are significant differences in the timing and magnitude of the challenges facing different regions of the country and different sizes of water systems. But the investments we describe in this report are real, they are large, and they are coming.

The United States is reaching a crossroads and faces a difficult choice. We can incur the haphazard and growing costs of living with aging and failing drinking water infrastructure. Or, we can carefully prioritize and undertake drinking water infrastructure renewal investments to ensure that our water utilities can continue to reliably and cost-effectively support the public

health, safety, and economic vitality of our communities. AWWA undertook this report to provide the best, most accurate information available about the scale and timing of these needed investments.

It is clear the era AWWA predicted a decade ago—the replacement era—has arrived. The issue of aging water infrastructure, which was buried for years, can be buried no longer. Ultimately, the cost of the renewal we face must come from local utility customers, through higher water rates. However, the magnitude of the cost and the associated affordability and other adverse impacts on



communities—as well as the varying degrees of impact to be felt across regions and across urban and rural areas—suggest that there is a key role for states and the federal government as well. In particular, states and the federal government can help with a careful and cost-effective program that lowers the cost of necessary investments to our communities, such as the creation of a credit support program—for example, AWWA's proposed Water Infrastructure Finance and Innovation Authority (WIFIA).

Finally, in many cases, difficult choices may need to be made between competing needs if water bills are to be kept affordable. Water utilities are willing to ask their customers to invest more, but it's important this investment be in things that bring the greatest actual benefit to the community. Only in that spirit can we achieve the goal to which we all aspire, the reliable provision of safe and affordable water to all Americans.

Additional Information and Resources.

A full and robust infrastructure analysis is an indispensable tool for decision making by water and wastewater utilities. This report does not substitute for such detailed local analysis for purposes of designing an infrastructure asset management program for individual utilities.

Additional information is available from AWWA concerning asset management. Particular attention should be given to the WITAF reports *Dawn of the Replacement Era*, *Avoiding Rate Shock*, *Thinking Outside the Bill* and *Water Infrastructure at a Turning Point*. In addition, Manual M1, *Principles of Water Rates, Fees, and Charges*, and the AWWA Utility Management Standards may be helpful. For more information, visit the AWWA Bookstore at www.awwa.org/store.

A number of graphs and figures from this report are also available through the AWWA website at www.awwa.org/infrastructure. They include:

Estimated Distribution of Mains by Material Northeast and Midwest South and West	Household Cost of Needed Investment by Region and Size of Utility
Proportion of 2010 Systems Built by Year Northeast Midwest South West	Northeast Large Medium Small Very Small
Investment for Replacement Plus Growth, by Region and Size of Utility	Midwest Large Medium Small Very Small
Northeast Large Medium Small Very Small	South Large Medium Small Very Small
Midwest Large Medium Small Very Small	West Large Medium Small Very Small
South Large Medium Small Very Small	
West Large Medium Small Very Small	

www.awwa.org/infrastructure

Estimated Distribution of Mains by Material Over Time Northeast & Midwest Regions

	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	DI (SSL)	AC (LSL)	AC (SSL)	PVC	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	DI (SSL)	AC (SSL)	AC (LSL)	PVC	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	AC (LSL)	Steel	Conc & PCCP
	<6 inch diameter								6-10 inch diameter								>10 inch diameter						
1870	100%								100%								100%						
1880	100%								100%								100%						
1890	100%								100%								100%						
1900	100%								100%								100%						
1910	100%								100%								100%						
1920	100%								100%								100%						
1930	50%	30%	20%						50%	30%	20%						50%	30%	20%				
1940	20%	60%	20%						20%	60%	20%						20%	40%	20%			20%	
1950		60%				20%	20%			60%				20%	20%			40%			10%	20%	30%
1960		50%			10%	20%	20%			50%			10%	20%	20%			35%		5%	10%	20%	30%
1970		20%			40%			40%		20%			40%			40%				50%		20%	30%
1980				25%	30%			45%				25%	35%			40%				60%		15%	25%
1990				50%	5%			45%				50%	5%			45%				60%		15%	25%
2000				55%				45%				55%				45%				60%		15%	25%
2010				55%				45%				55%				45%				60%		15%	25%
2020				55%				45%				55%				45%				60%		15%	25%
2030				55%				45%				55%				45%				60%		15%	25%

Steel and PCCP pipe not in widespread use in sizes under 10 inches.

CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

The regions are combined because they share similar dynamics for this distribution.

Note:

"LSL" indicates a relatively long service life for the material resulting from some combination of benign ground conditions and evolved laying practices etc.

"SSL" indicates a relatively short service life for the material resulting from some combination of harsh ground conditions and early laying practices etc.

Estimated Distribution of Mains by Material Over Time South & West Regions

	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	DI (SSL)	AC (LSL)	AC (SSL)	PVC	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	DI (SSL)	AC (LSL)	AC (SSL)	PVC	CI	CICL (LSL)	CICL (SSL)	DI (LSL)	AC (LSL)	Steel	Conc & PCCP
	<6 inch diameter								6-10 inch diameter								>10 inch diameter						
1870	100%								100%								100%						
1880	100%								100%								100%						
1890	100%								100%								100%						
1900	100%								100%								100%						
1910	100%								100%								100%						
1920	100%								100%								100%						
1930	50%	30%	20%						50%	30%	20%						50%	30%	20%				
1940		70%	30%							70%	30%							50%	30%			20%	
1950		25%				40%	35%			25%				40%	35%			40%			15%	25%	20%
1960		25%		2%	3%	40%	30%			25%		2%	3%	40%	30%			40%		5%	10%	25%	20%
1970		10%		10%	10%	40%		30%		10%		10%	10%	40%		30%				45%	10%	25%	20%
1980				25%	25%			50%				30%	30%			40%				60%		20%	20%
1990				45%	5%			50%				50%	5%			45%				60%		20%	20%
2000				50%				50%				50%				50%				60%		20%	20%
2010				50%				50%				50%				50%				60%		20%	20%
2020				50%				50%				50%				50%				60%		20%	20%
2030				50%				50%				50%				50%				60%		20%	20%
<i>Steel and PCCP pipe not in widespread use in sizes under 10 inches.</i>																							
<i>CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe</i>																							

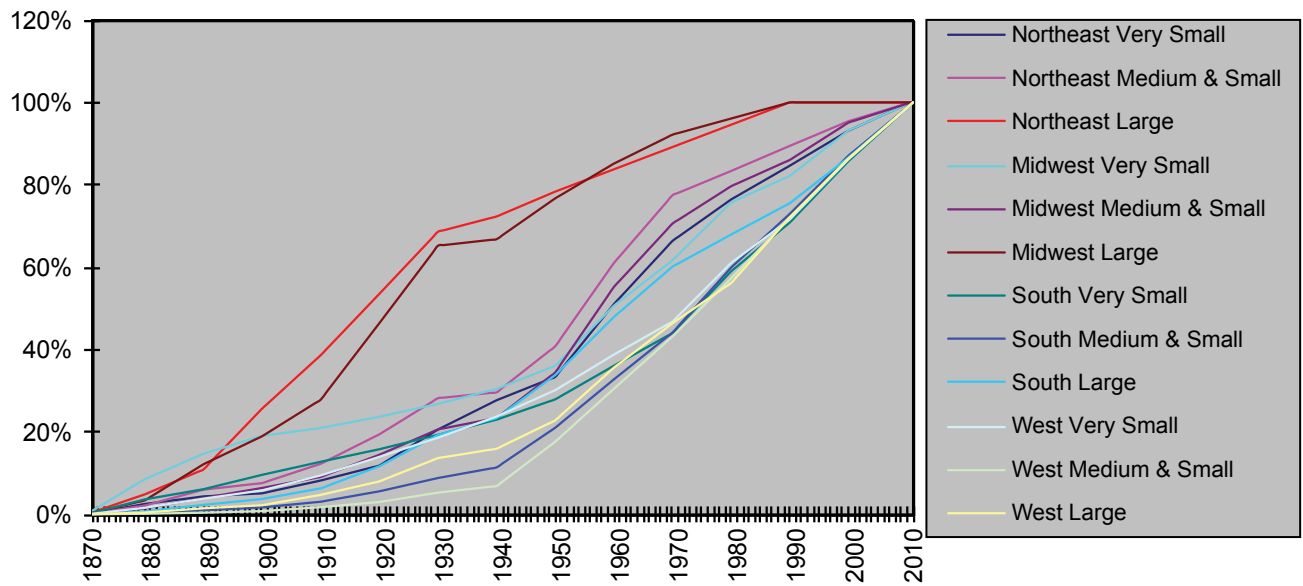
The regions are combined because they share similar dynamics for this distribution.

Note:

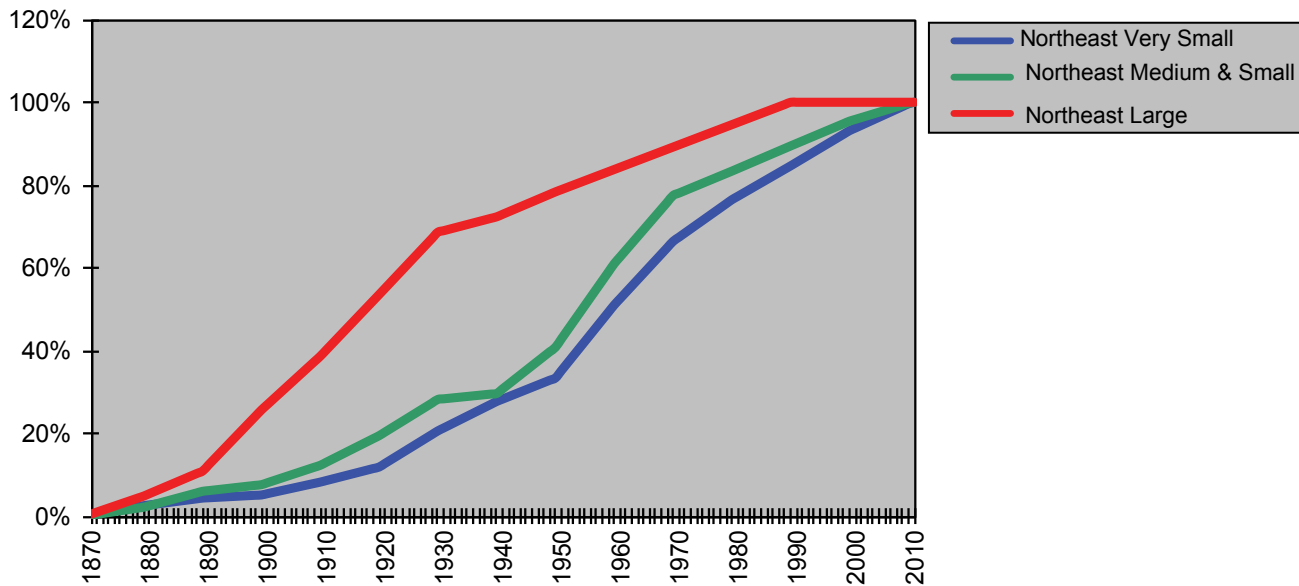
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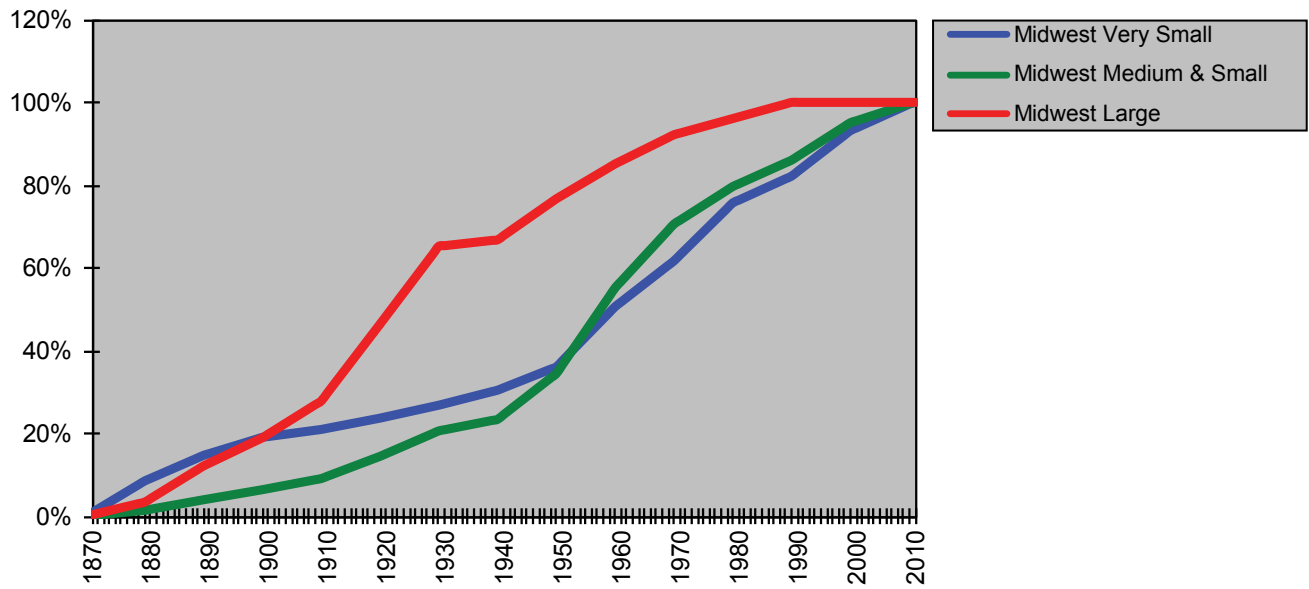
Proportion of Current System Built by Decade: All Regions



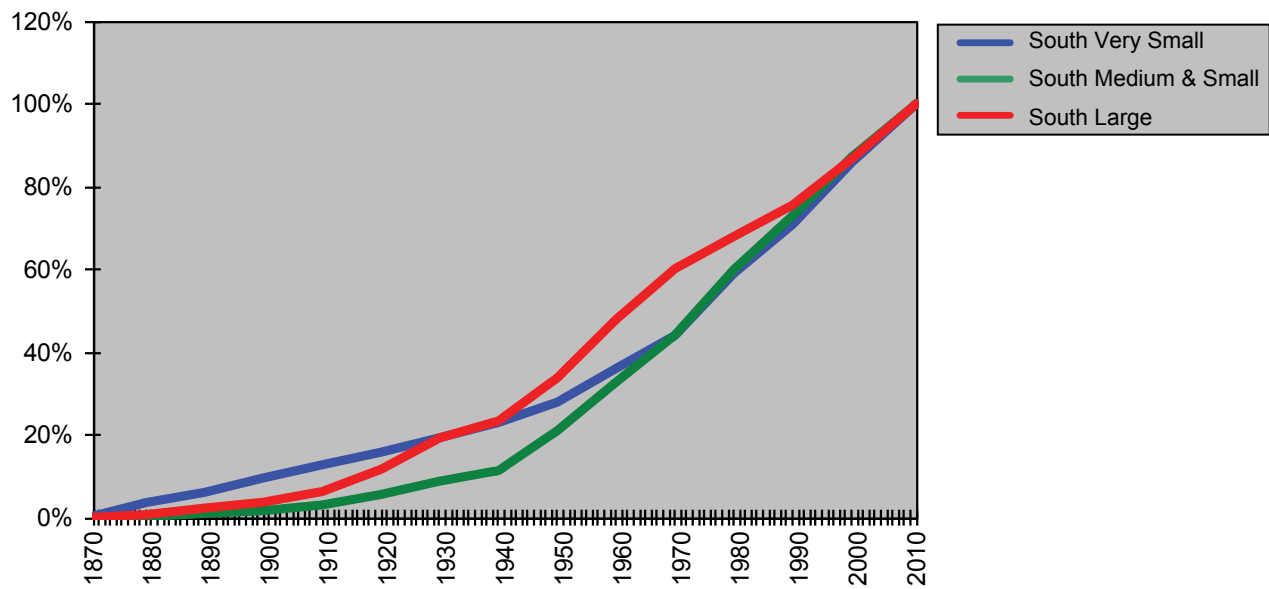
Proportion of Current System Built by Decade: Northeast



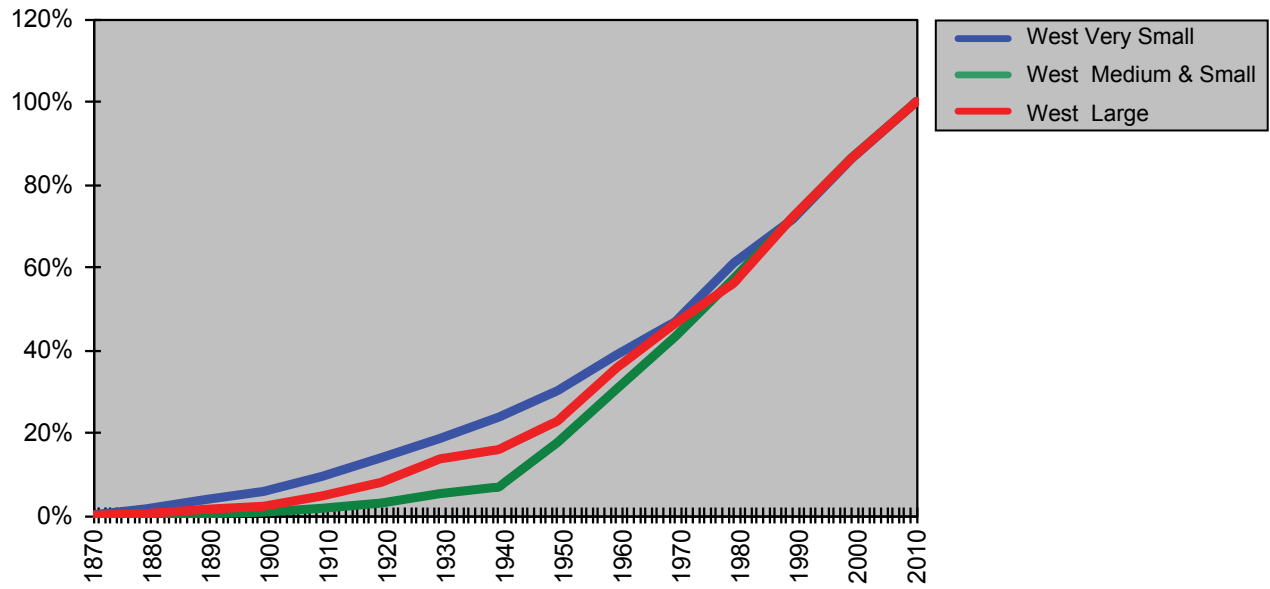
Proportion of Current System Built by Decade: Midwest



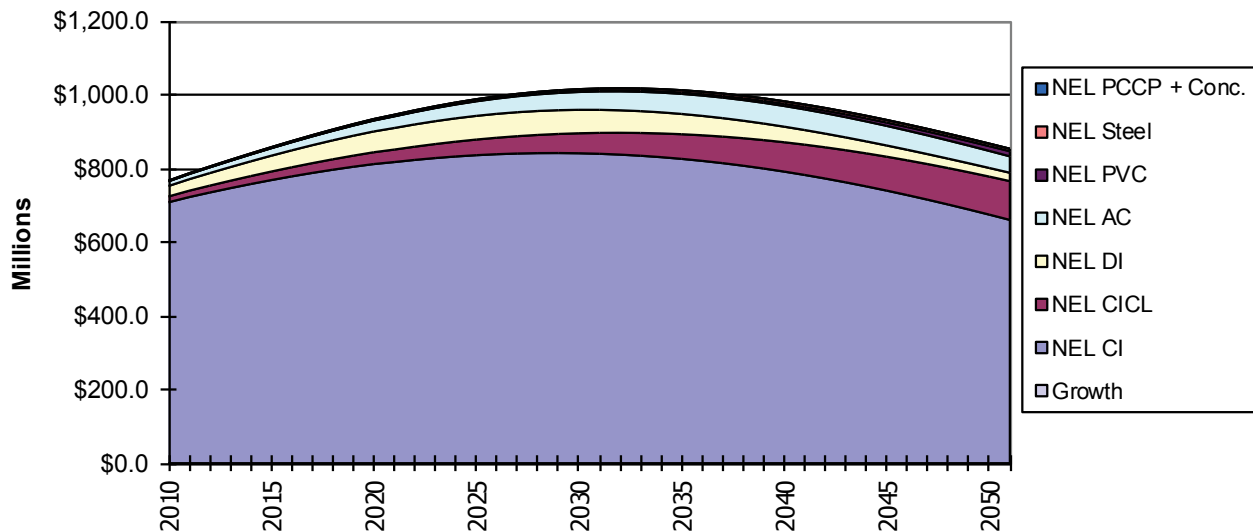
Proportion of Current System Built by Decade: South



Proportion of Current System Built by Decade: South

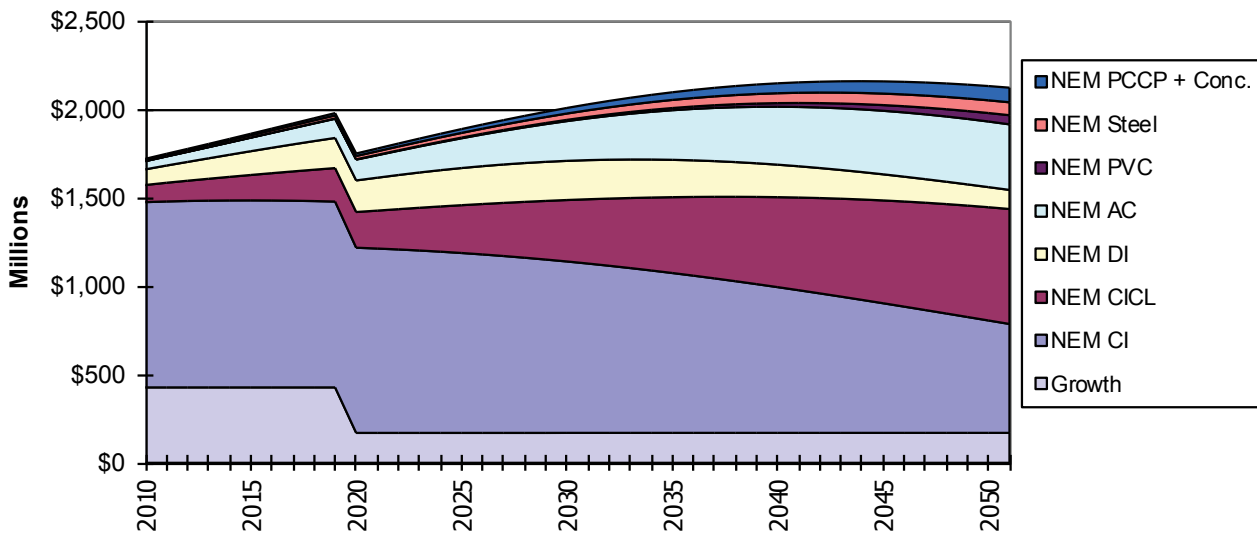


Investment for Replacement & Growth Northeast Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

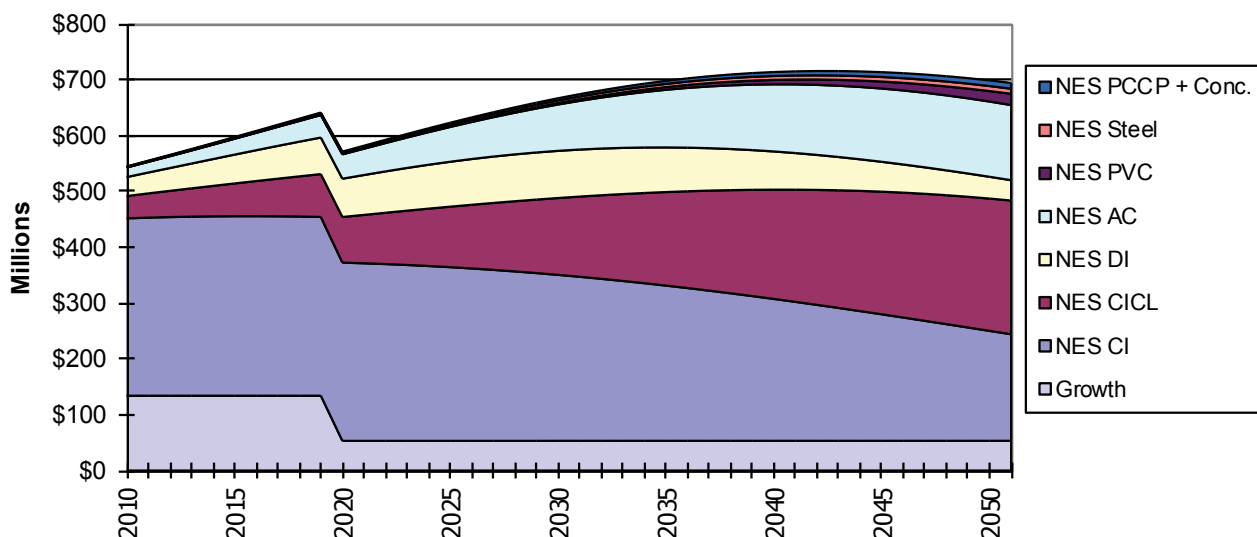
Investment for Replacement & Growth Northeast Medium



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

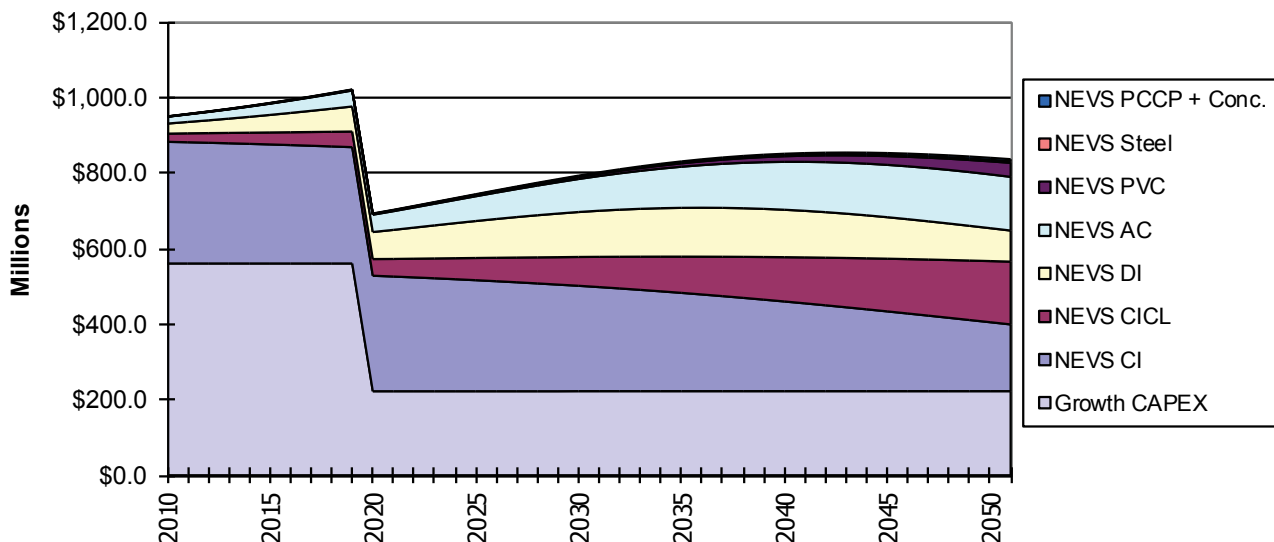
The charts show needs for replacement of particular types of pipe and for growth (see the keys below and to the right of the chart). An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.

Investment for Replacement & Growth Northeast Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

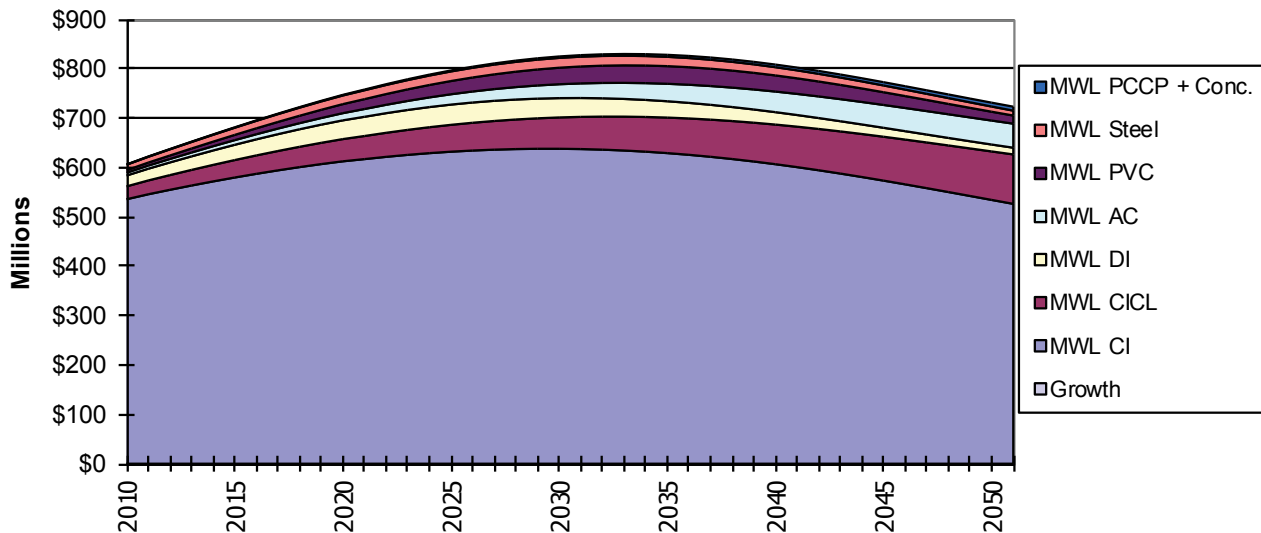
Investment for Replacement & Growth Northeast Very Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

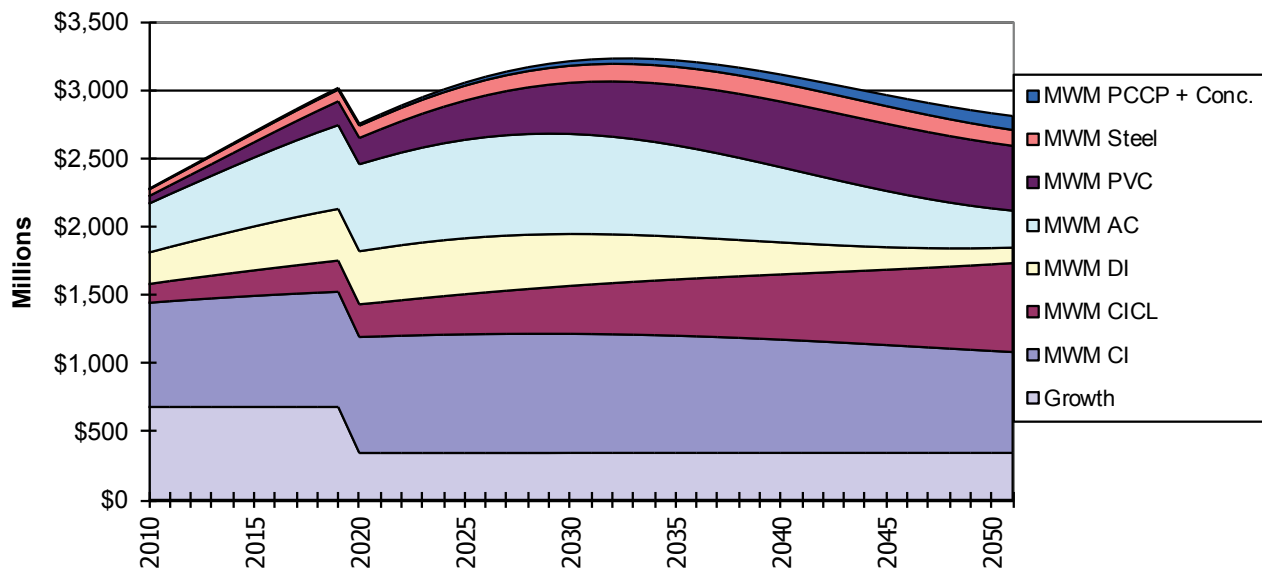
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Investment for Replacement & Growth Midwest Large



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

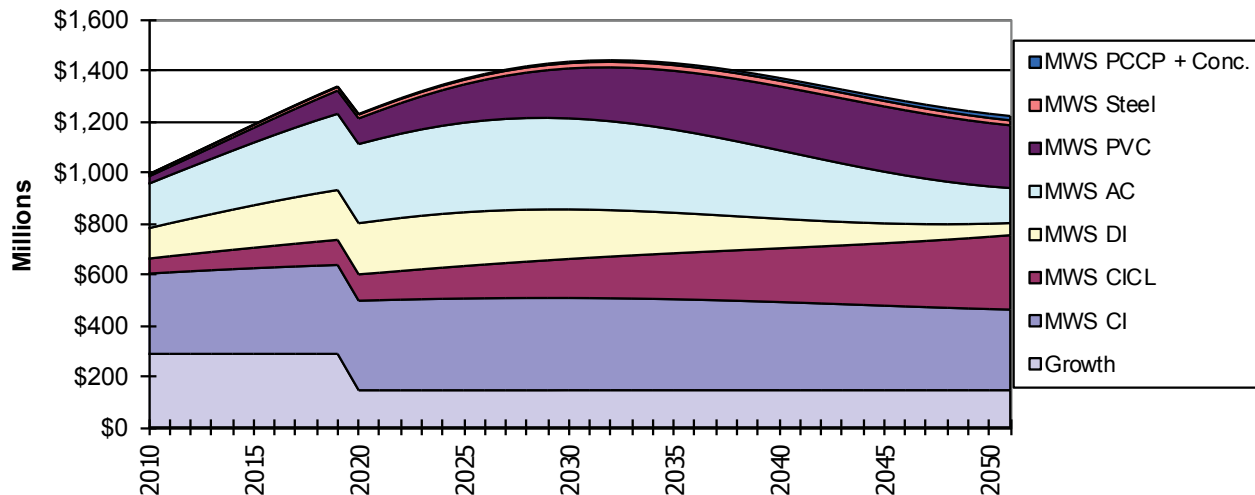
Investment for Replacement & Growth Midwest Medium



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

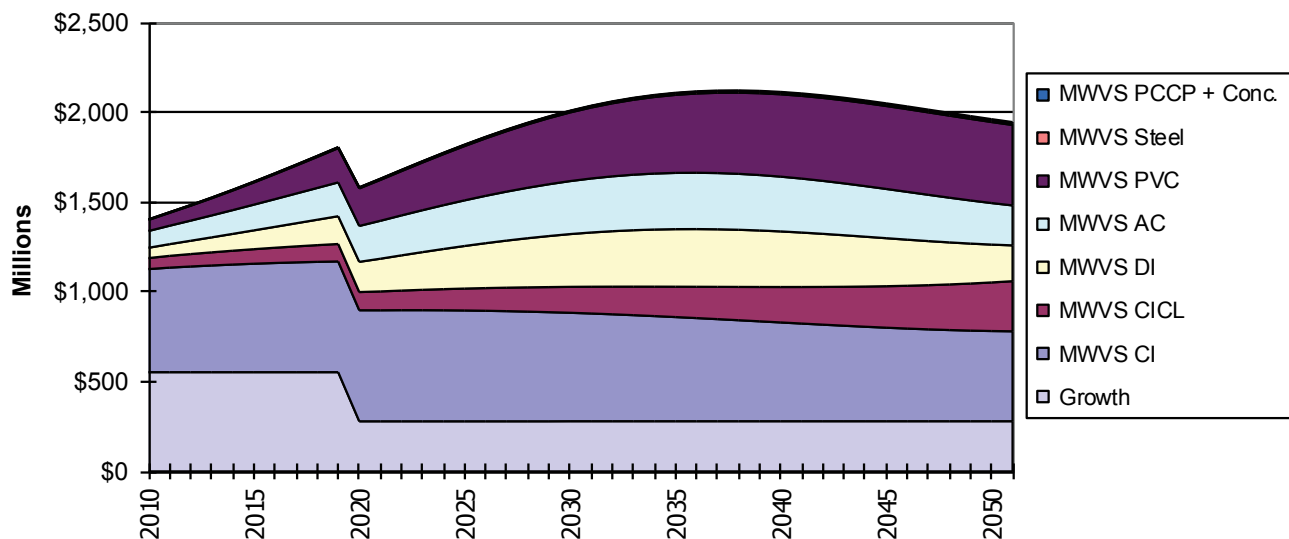
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Investment for Replacement & Growth Midwest Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

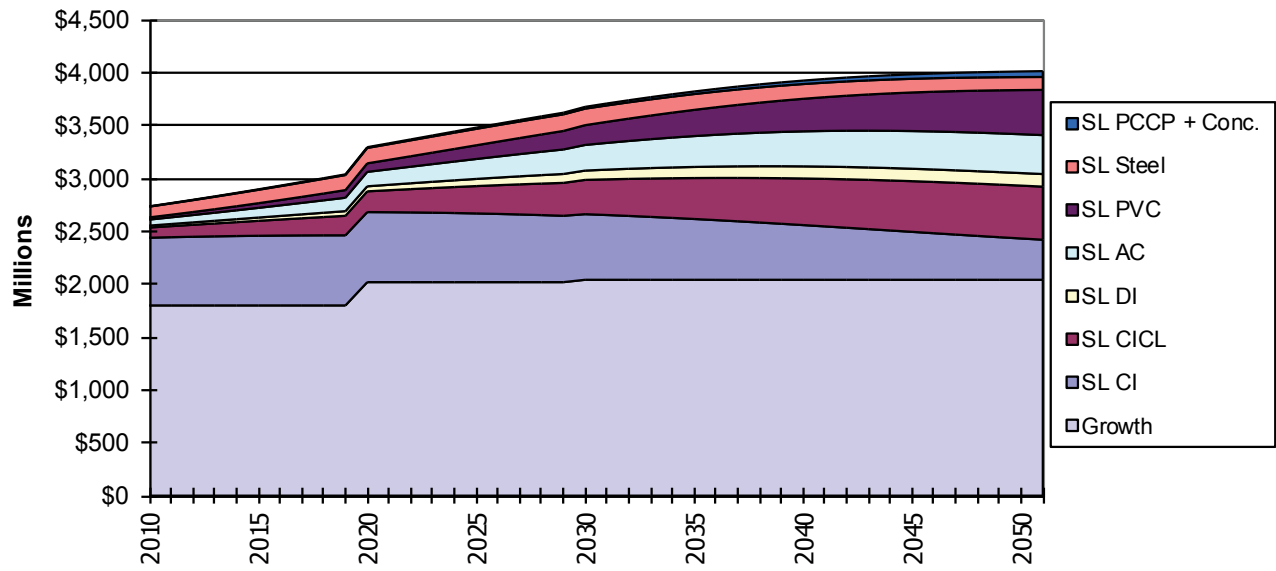
Investment for Replacement & Growth Midwest Very Small



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

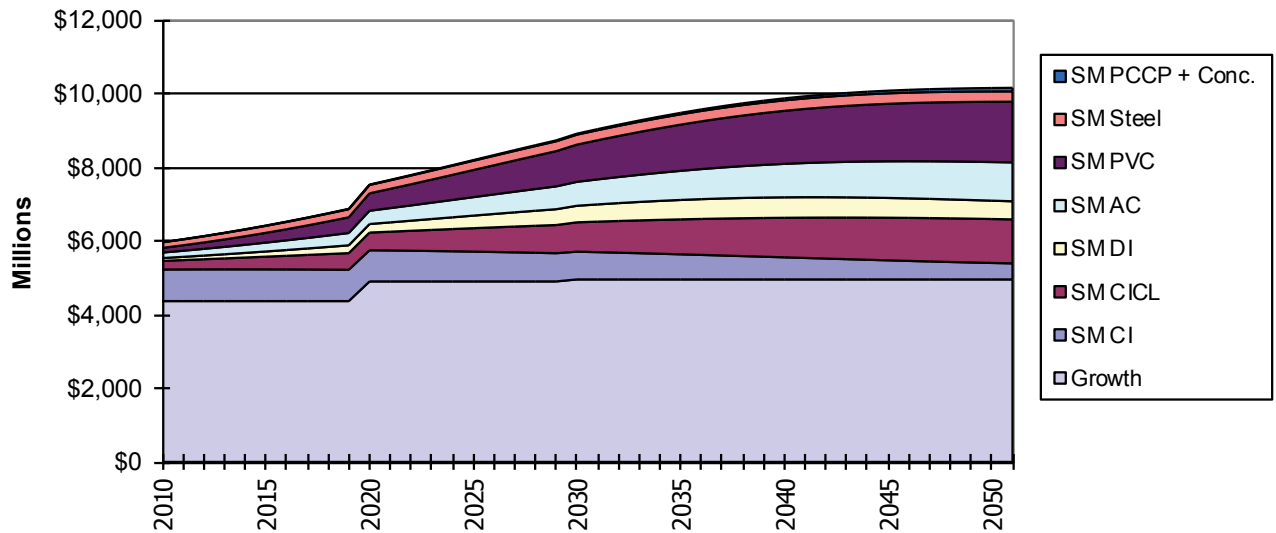
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Investment for Replacement & Growth South Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

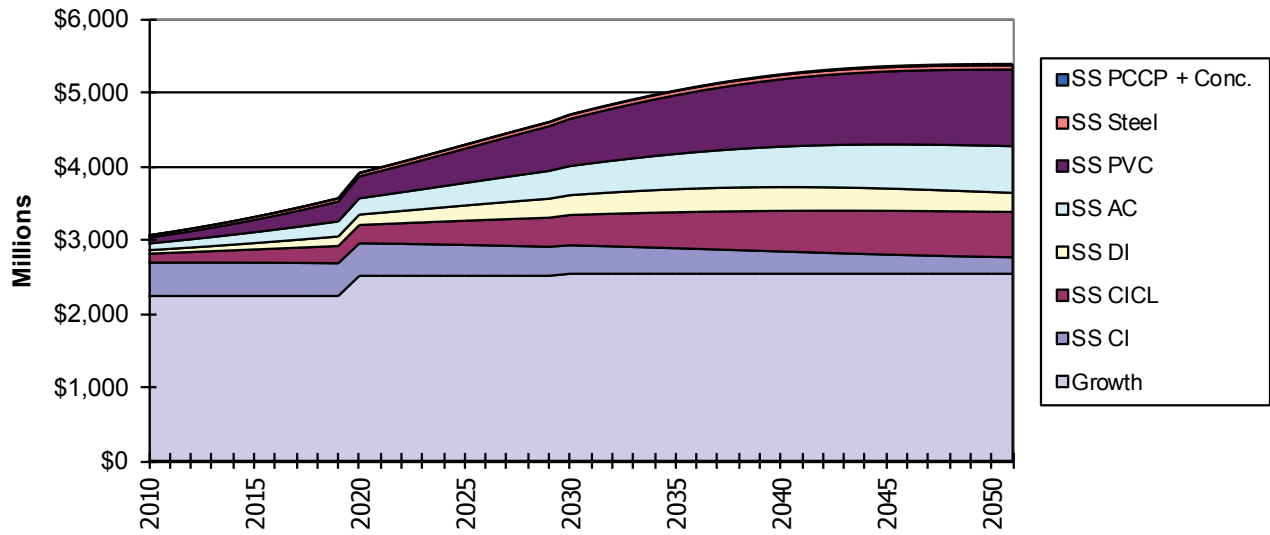
Investment for Replacement & Growth South Medium



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

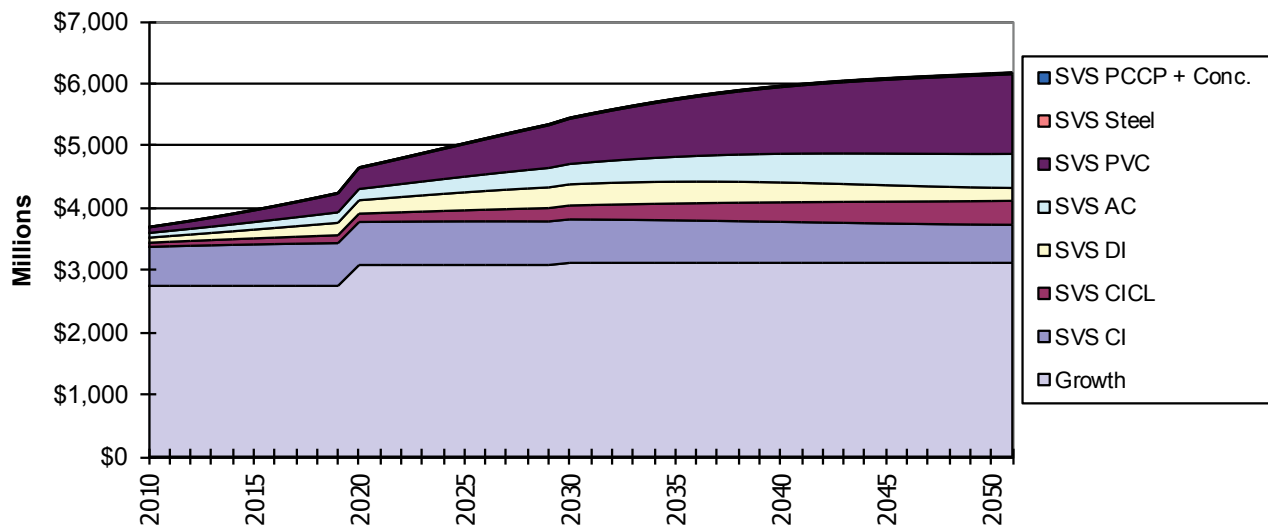
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Investment for Replacement & Growth South Small



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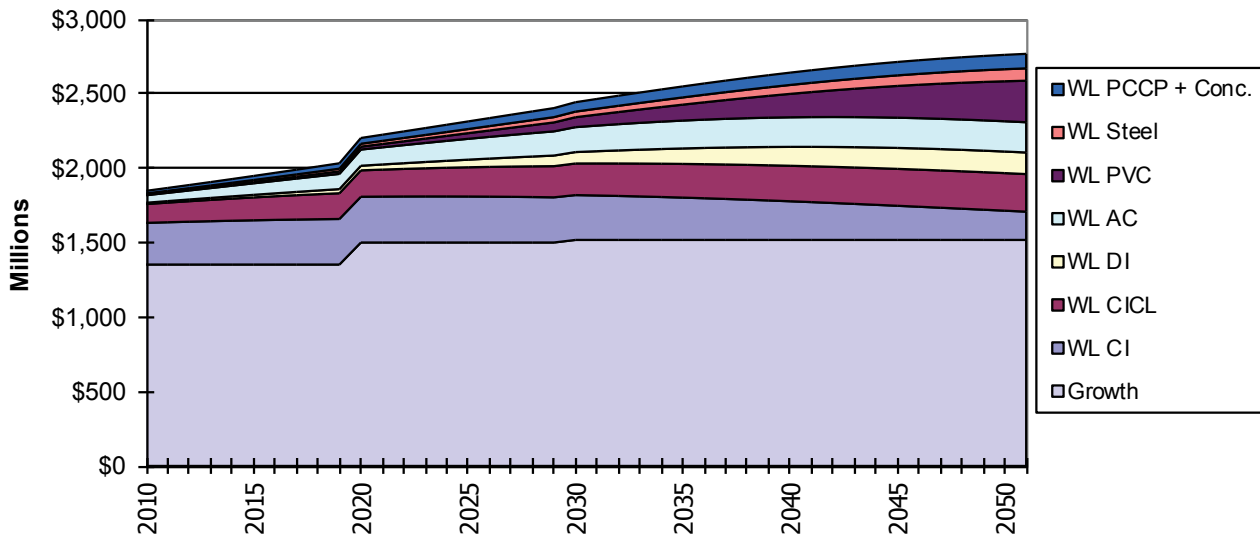
Investment for Replacement & Growth South Very Small



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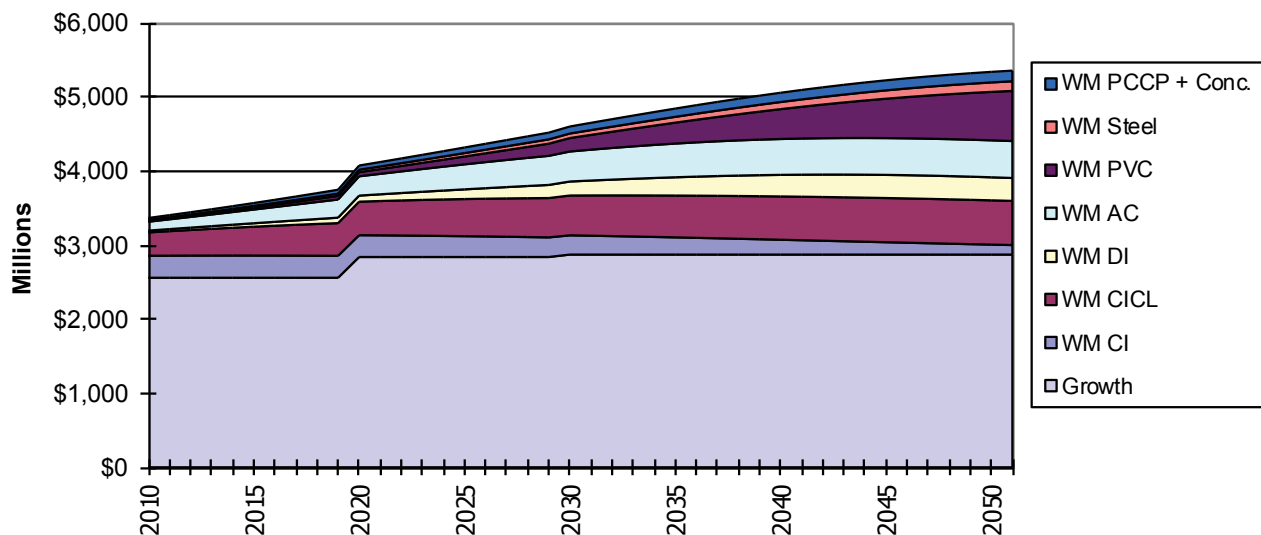
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Investment for Replacement & Growth West Large



CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

Investment for Replacement & Growth West Medium

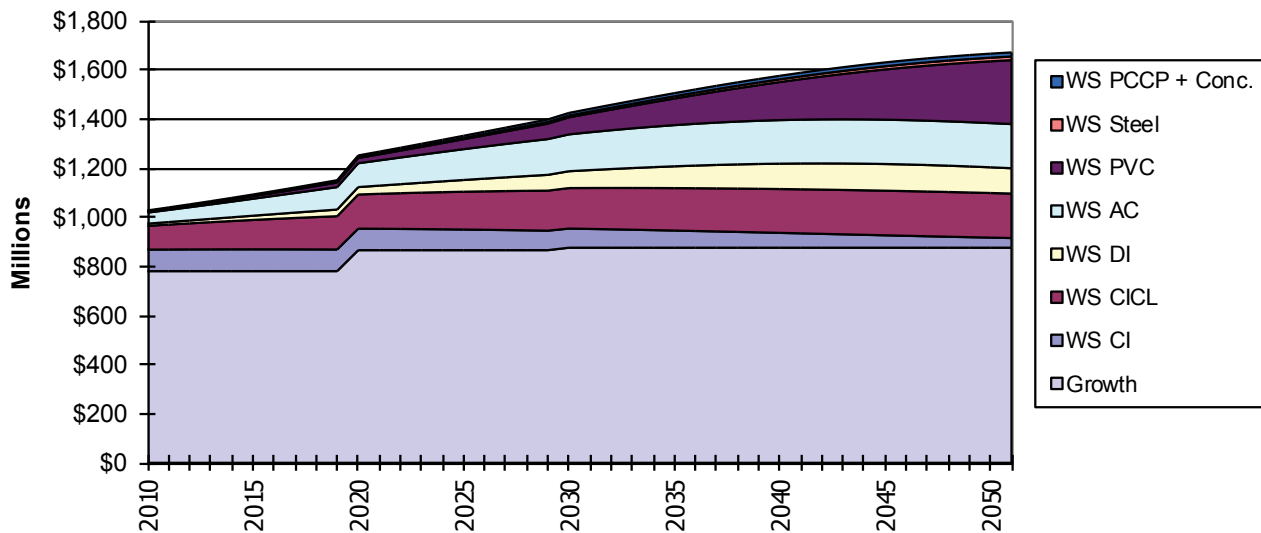


CI: cast iron; CICL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

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Investment for Replacement & Growth

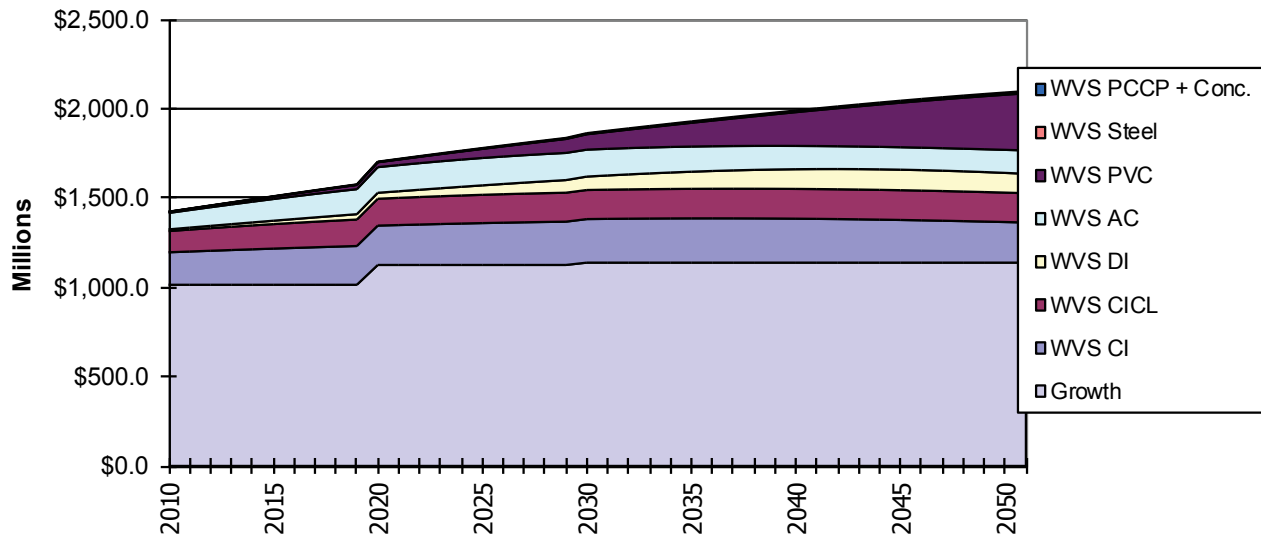
West Small



CI: cast iron; CACL: cast iron cement lined; DI: ductile iron; AC: asbestos cement; PV: polyvinyl chloride; PCCP: prestressed concrete cylinder pipe

Investment for Replacement & Growth

West Very Small

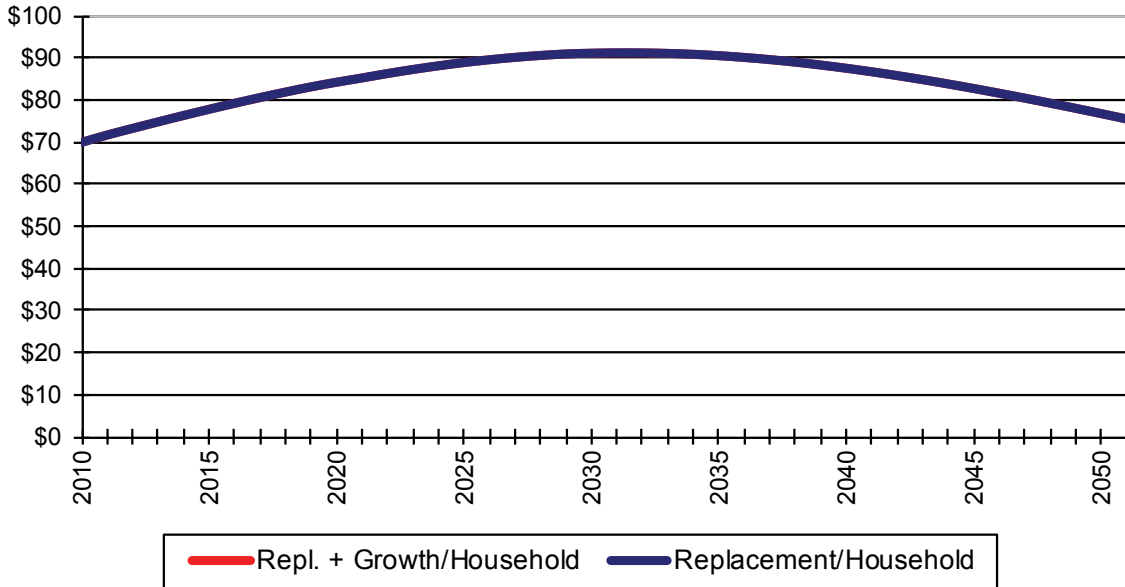


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Household Cost of Needed Investment for Replacement Plus Growth*

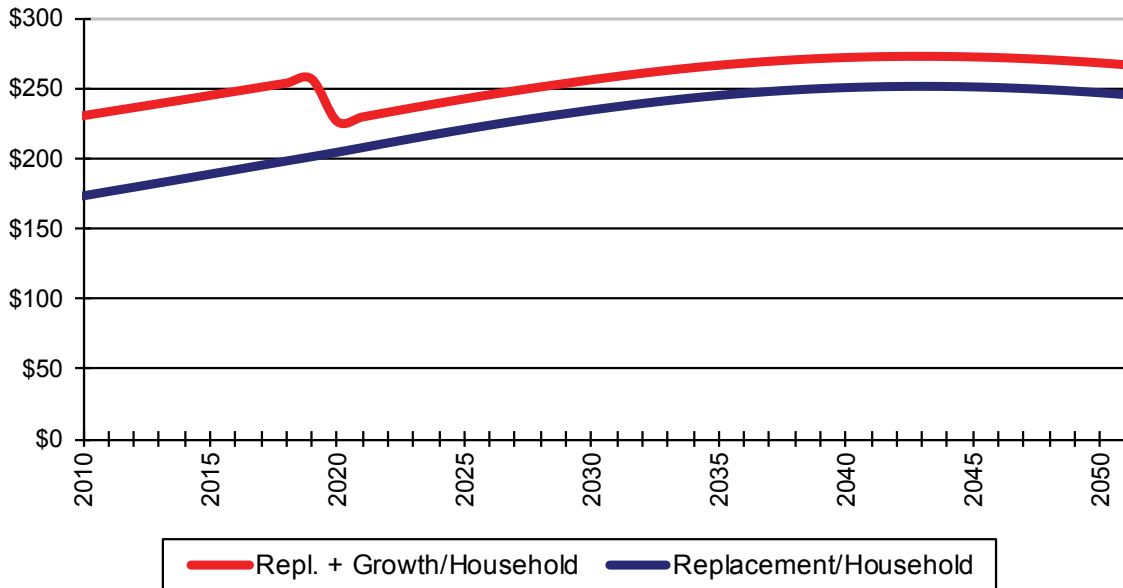
Northeast Large



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

Household Cost of Needed Investment for Replacement Plus Growth*

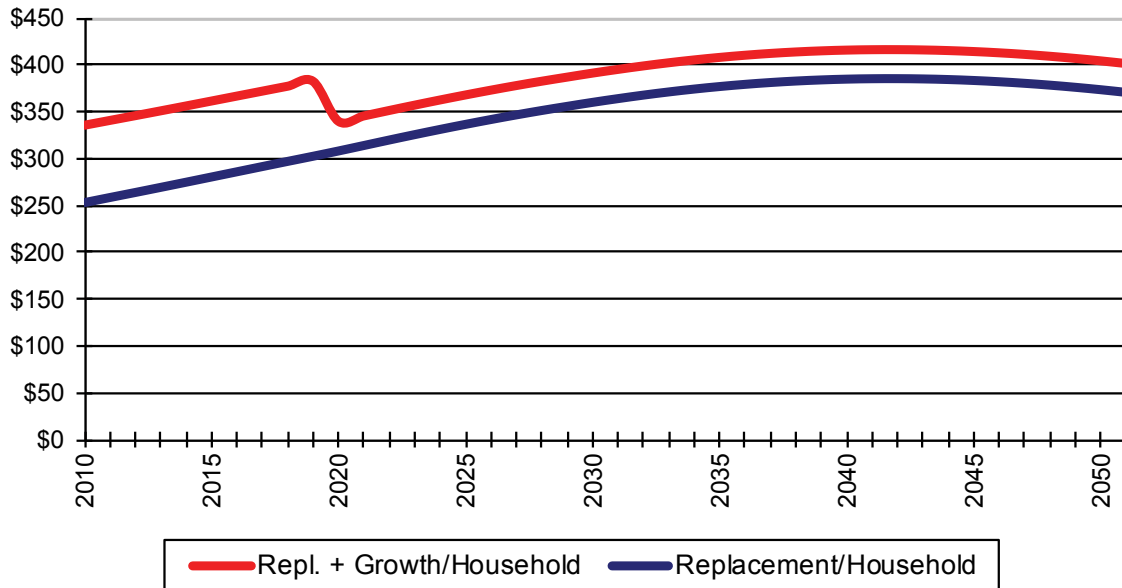
Northeast Medium



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

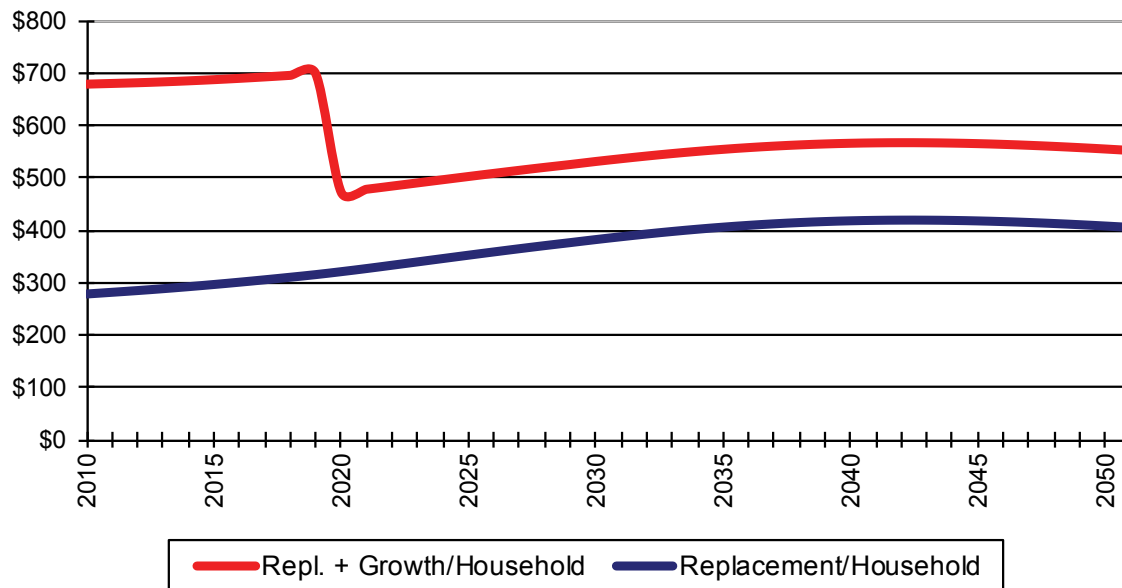
The charts show per household costs for replacement, and for replacement plus growth. The model assumes costs are spread evenly over households averaging 2.6 persons per household in accordance with US Census data. An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.”

Household Cost of Needed Investment for Replacement Plus Growth* Northeast Small



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

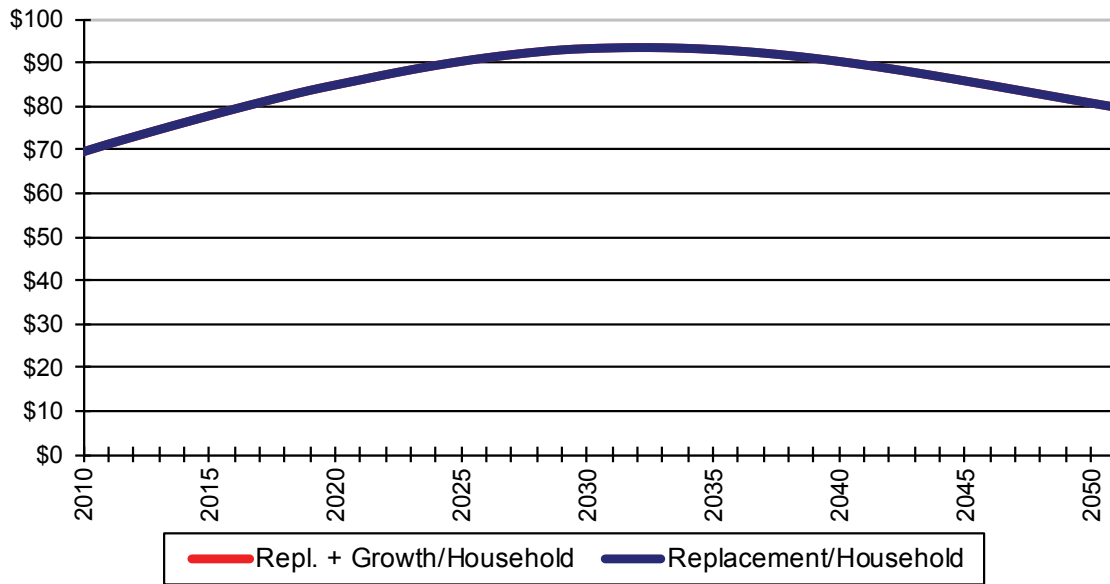
Household Cost of Needed Investment for Replacement Plus Growth* Northeast Very Small



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

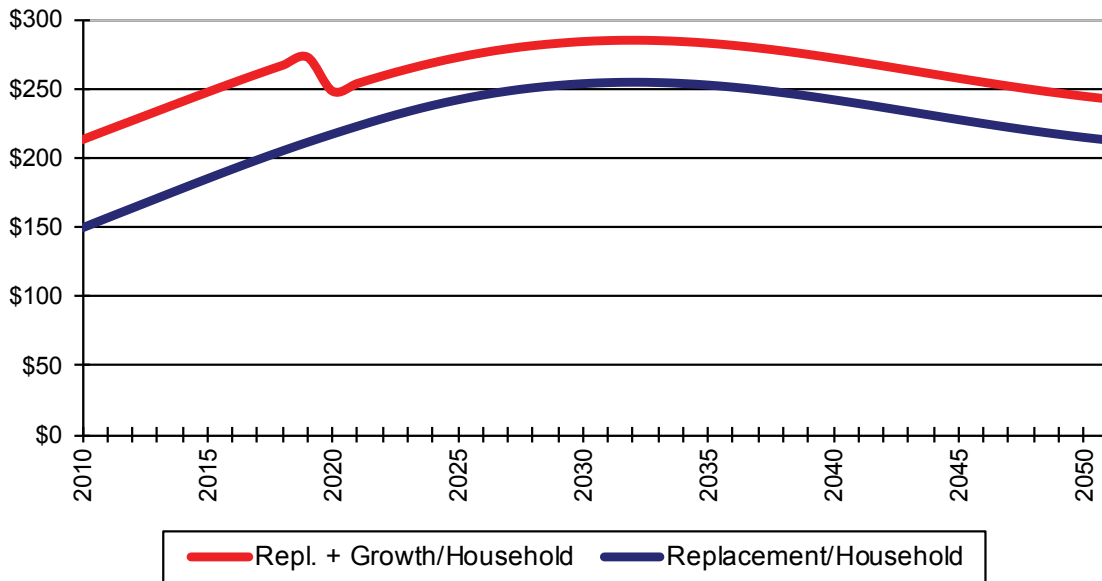
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Household Cost of Needed Investment for Replacement Plus Growth* Midwest Large



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

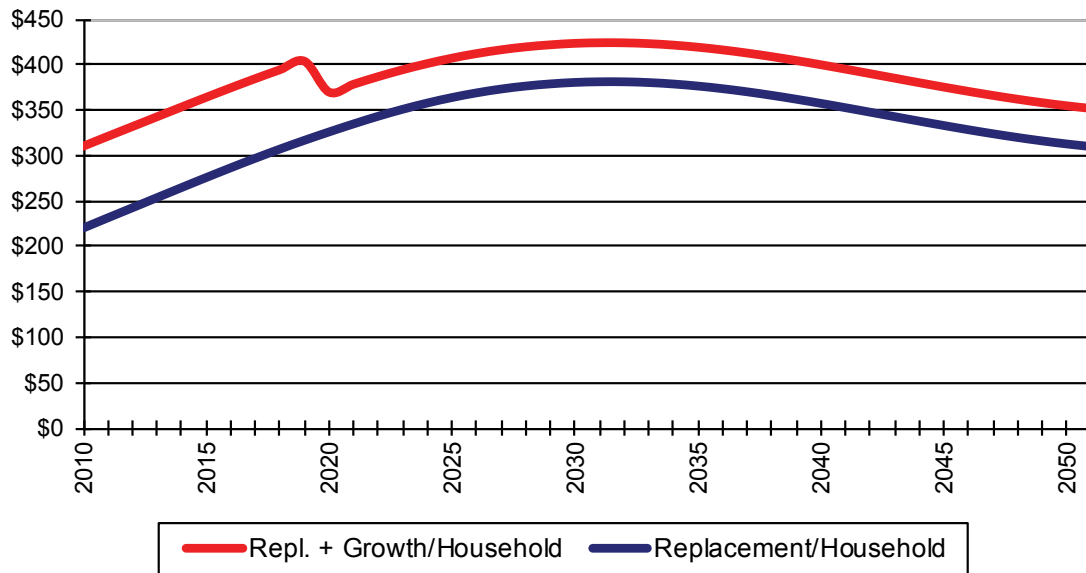
Household Cost of Needed Investment for Replacement Plus Growth* Midwest Medium



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

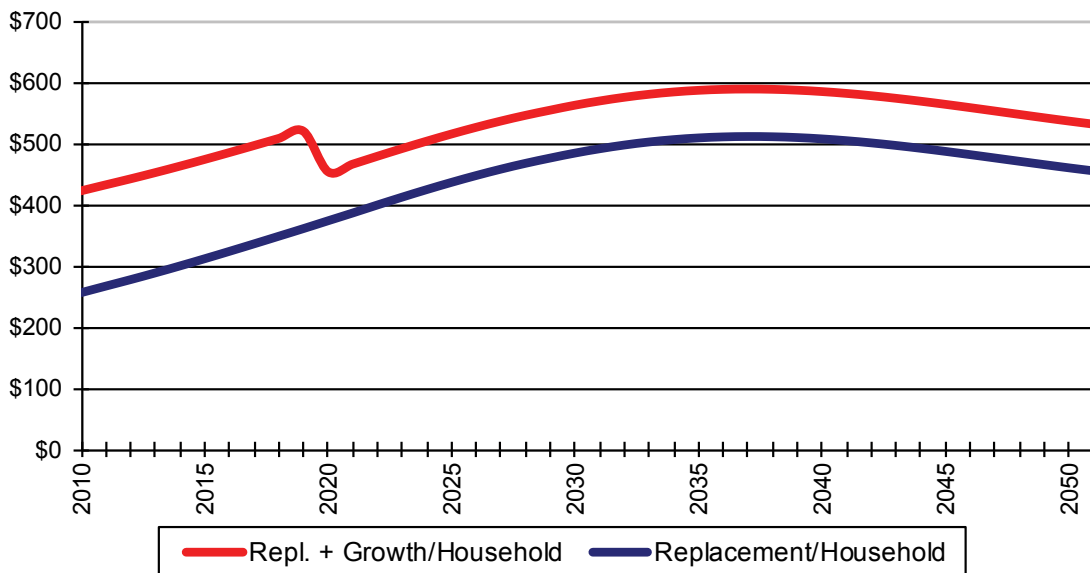
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Household Cost of Needed Investment for Replacement Plus Growth* Midwest Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

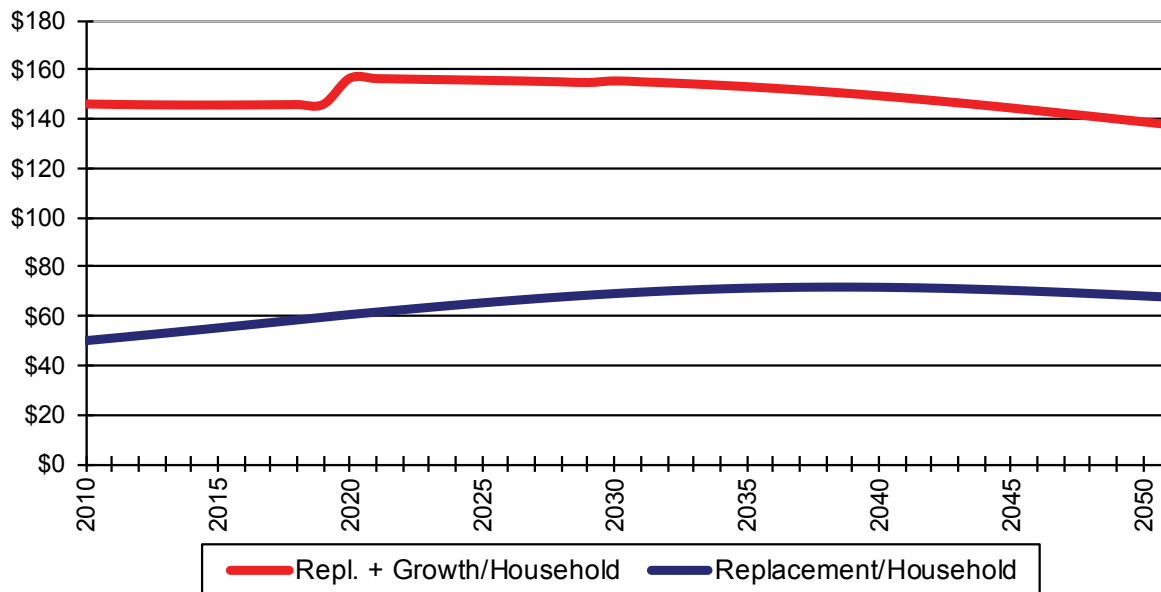
Household Cost of Needed Investment for Replacement Plus Growth* Midwest Very Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

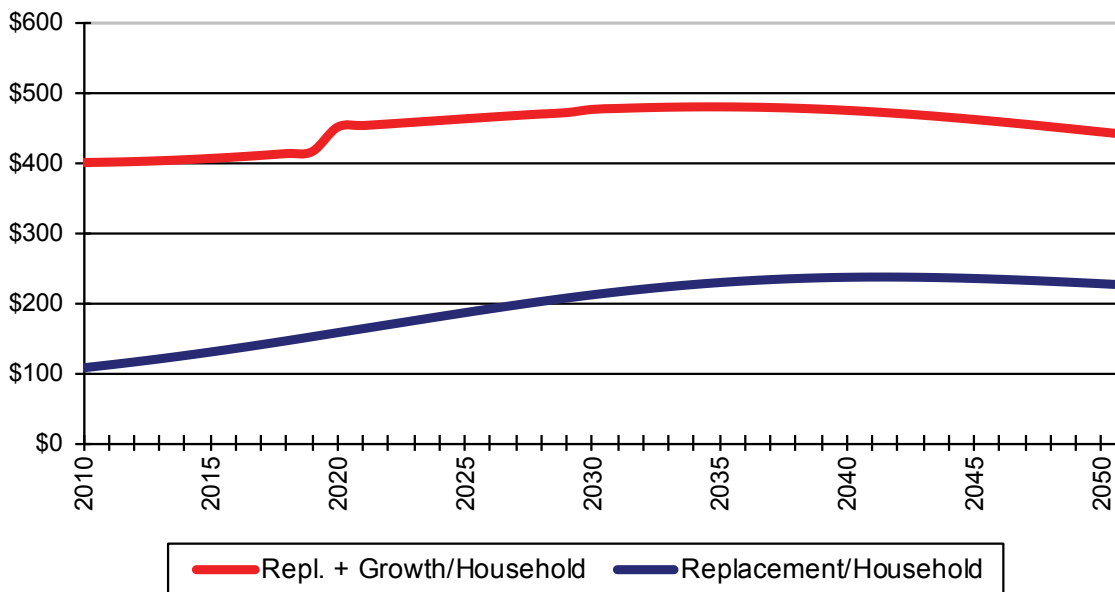
The charts show per household costs for replacement, and for replacement plus growth. The model assumes costs are spread evenly over households averaging 2.6 persons per household in accordance with US Census data. An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.”

Household Cost of Needed Investment for Replacement Plus Growth* South Large



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

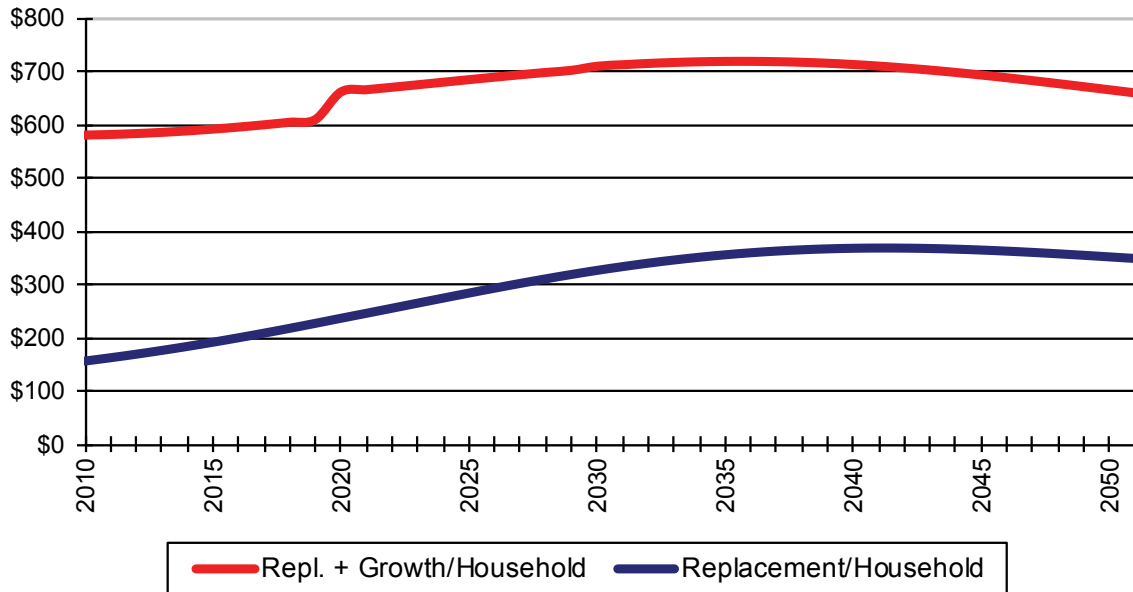
Household Cost of Needed Investment for Replacement Plus Growth* South Medium



*This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.

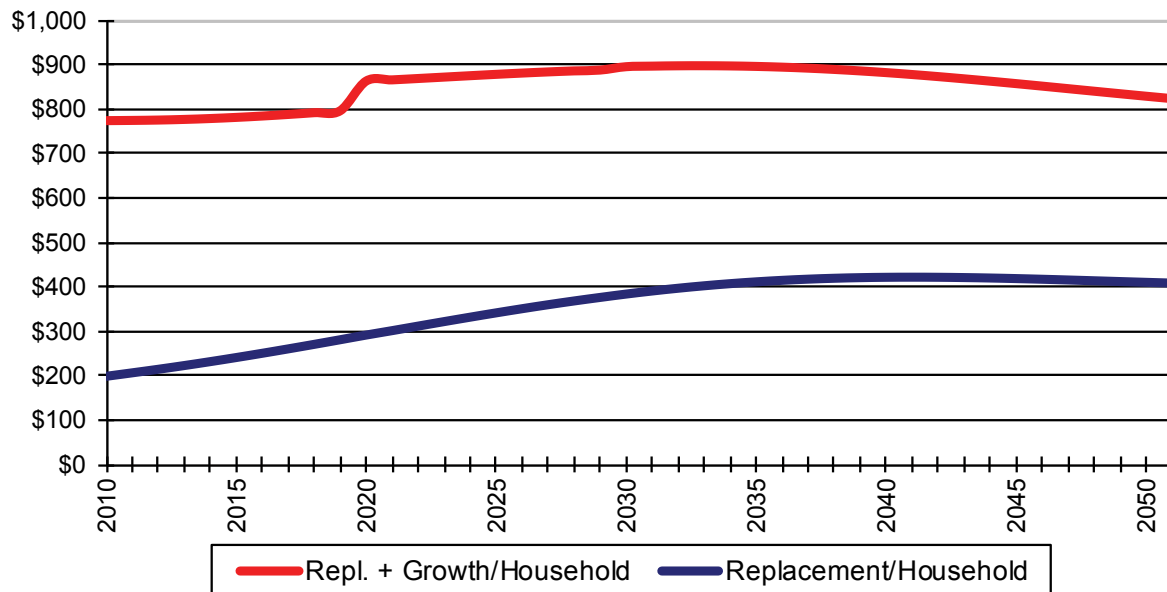
The charts show per household costs for replacement, and for replacement plus growth. The model assumes costs are spread evenly over households averaging 2.6 persons per household in accordance with US Census data. An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.”

Household Cost of Needed Investment for Replacement Plus Growth* South Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

Household Cost of Needed Investment for Replacement Plus Growth* South Very Small

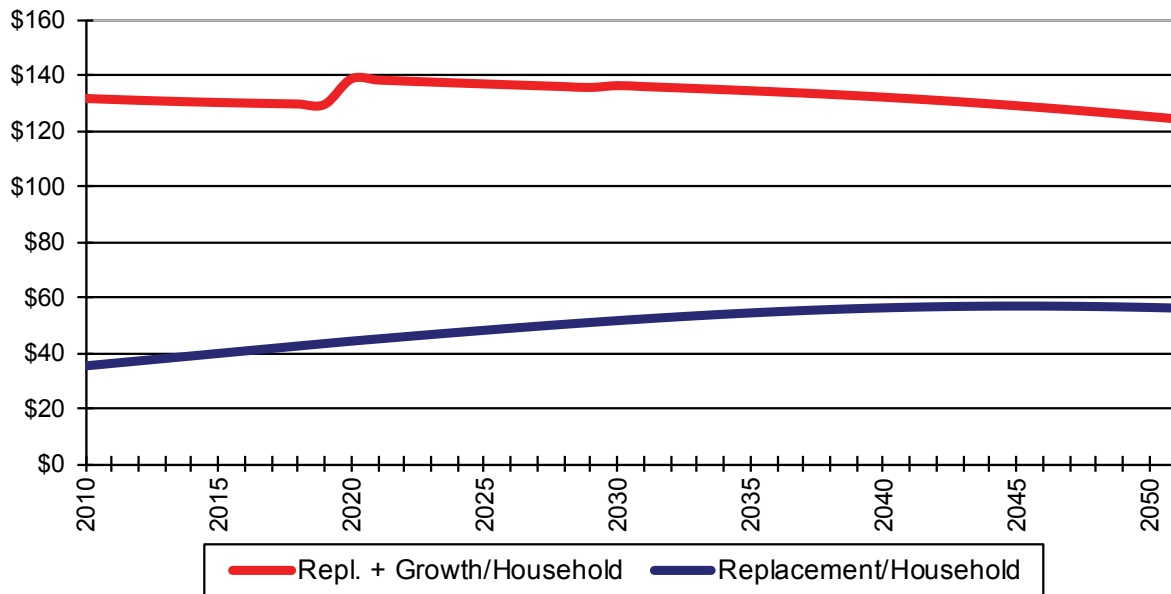


**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

The charts show per household costs for replacement, and for replacement plus growth. The model assumes costs are spread evenly over households averaging 2.6 persons per household in accordance with US Census data. An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.”

Household Cost of Needed Investment for Replacement Plus Growth*

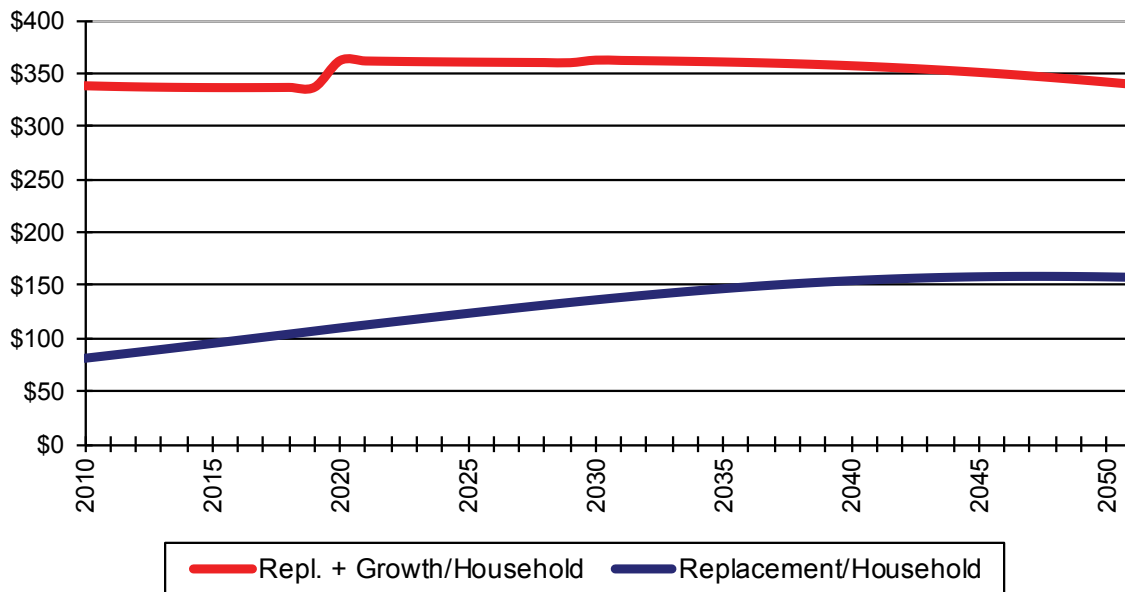
West Large



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

Household Cost of Needed Investment for Replacement Plus Growth*

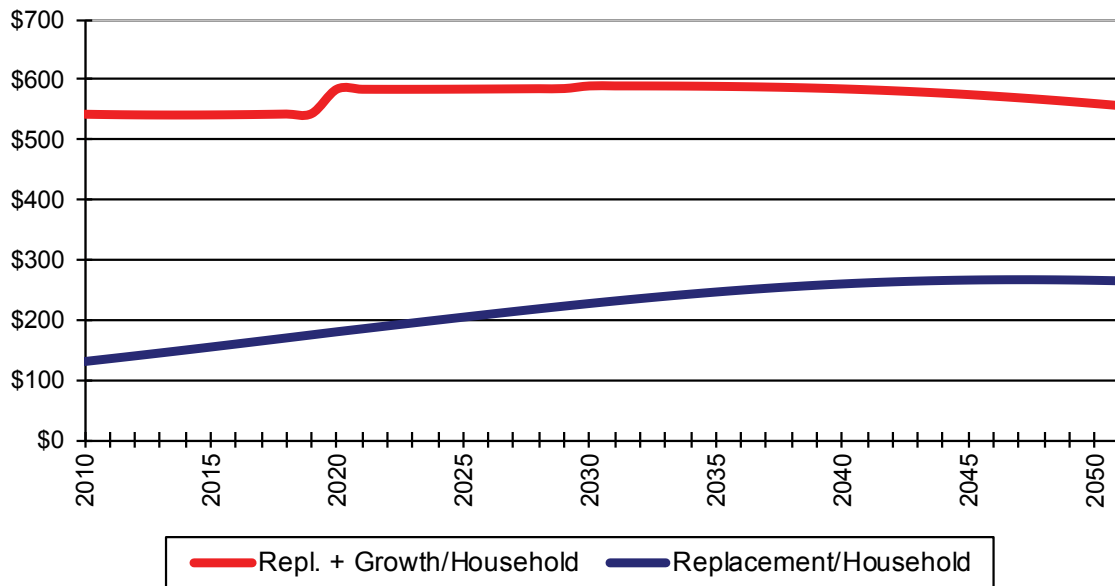
West Medium



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

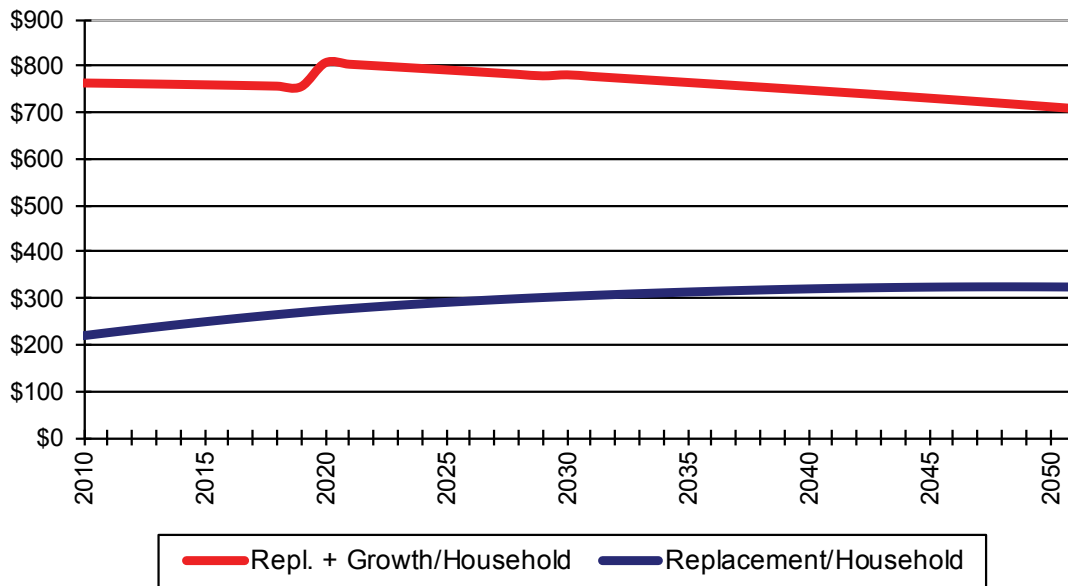
The charts show per household costs for replacement, and for replacement plus growth. The model assumes costs are spread evenly over households averaging 2.6 persons per household in accordance with US Census data. An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.”

Household Cost of Needed Investment for Replacement Plus Growth* West Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

Household Cost of Needed Investment for Replacement Plus Growth* West Very Small



**This assumes costs are spread evenly across households of 2.6 persons each, based on data from the US Census.*

The charts show per household costs for replacement, and for replacement plus growth. The model assumes costs are spread evenly over households averaging 2.6 persons per household in accordance with US Census data. An artifact of the model and US Census data result in an apparent upward or downward “spike” in growth-related needs between certain decades. In reality, the apparent sudden shift in growth-related needs will be spread more evenly over the years bridging each decade to the next.”

**ATTACHMENT KAWC TO KAW_R_PSCDR2_NUM047_012519
FILED UNDER SEAL PURSUANT TO THE PETITION FOR
CONFIDENTIAL TREATMENT FILED ON
JANUARY 25, 2019**

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 48.** Refer to the O'Neill Testimony, page 27, lines 6–9, which states that it is difficult to predict and budget for relocation projects. Explain whether Kentucky-American participates with state and local planning boards in regard to projects that require line relocation.

Response:

Kentucky-American Water has regular conversations and interactions with regional offices of the Kentucky Cabinet of Transportation and local government entities in areas that the company services. In particular, the company participates regularly with the following meetings:

1. Quarterly Utility Coordination Meetings with Lexington-Fayette Urban County Government
2. Quarterly Kentucky Transportation Cabinet Utility Stakeholder Council Meetings
3. Bi-Monthly Lexington-Fayette Urban County Government LFUCG Project Coordination Meetings (internal LFUCG department meetings among water/sewer/stormwater as they discuss their projects).
4. Bi-Monthly Georgetown Technical Review Committee
5. Kentucky Transportation Cabinet District 7 Project Coordination Meetings
6. Lexington-Fayette Urban County Government Paving Coordination Meetings.
7. Quarterly Lexington-Fayette Urban County Government Stormwater Advisory Council
8. Kentucky Department of Water – Water and Wastewater Utility Council

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Brent E. O'Neill

- 49.** Refer to the O'Neill Testimony, page 28, lines 7–17, which states that the infrastructure replacement rate between 2014 and 2017 was 0.3 percent.
- a. Provide the annual replacement rate for 2014, 2015, 2016, 2017, and 2018, if available.
 - b. Explain why Kentucky-American does not increase the replacement rate in their CPS to meet the Nessie Curve average of 0.9 percent.
 - c. Explain whether there are any legal or regulatory requirements that determine the level of infrastructure replacement.
 - d. Explain how Kentucky-American determines the level of infrastructure replacement.

Response:

- a. The annual replacement rate for 2014 to 2018 is as follows:

Main Replacement Averages 2014 to 2018				
Year	Replacement Footage	Miles	System Footage	Replacement Rate
2014	31,634	6.0	1,975	0.30%
2015	16,412	3.1	2,011	0.15%
2016	22,291	4.2	2,017	0.21%
2017	27,999	5.3	2,034	0.26%
2018	21,837	4.1	2,039	0.20%

2018 System Footage based on second quarter results

- b. As indicated in the Replacement Program Report 2018, the Nessie Model provides an insight on the amount of capital that is suggested to ensure that the distribution system is being replaced to account for a replacement rate of 0.49 to 0.9 percent. In order to achieve this level, KAWC would need to add \$9 to \$15 million in additional spend (in 2018 dollars) each year over the next 40 years. This would be an increase of 37.6 to 62.6 percent over the average investment of \$23.96 million between 2014 to 2017. The Company has to be able to attract the discretionary capital to support the additional \$9 to \$15 million in spend each year to achieve an average 0.9 percent replacement rate. While American Water always ensures that each of its water utilities is afforded access to capital to provide safe, adequate and reliable service,

investment funding is not limitless. The QIP will provide a more current matching between making an investment and recovery the cost of that investment and mitigate the significant adverse impact of regulatory lag, which helps the Company attract discretionary funding to support the accelerated main replacement program to move towards a 0.9% replacement rate.

- c. KAWC is not aware of any specific legal or regulatory requirement for pipe replacement rate in Kentucky.
- d. See response to subsection b above. Also, as indicated in O'Neill's testimony, numerous factors are considered when prioritizing infrastructure investment, such as current and future service needs, assessments of the physical condition of existing plant, economic and risk factors, performance characteristics, regulatory compliance, and the potential to coordinate with municipalities and other utilities in joint improvement projects.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 50.** Refer to the O'Neill Testimony, pages 35–43, which discusses potential benefits for the proposed Qualified Infrastructure Program.
- a. Provide all studies supporting these benefits that Kentucky-American conducted or commissioned in support of the proposed QIP.
 - b. Provide a cost-benefit analysis supporting the proposed QIP.
 - c. Provide a quantification of the benefits associated with the proposed QIP.

Response:

- a. Over the past several years, the Company completed a multiple method review of its pipeline asset replacement needs with internal resources. The Company began its review with the recently published AWWA software analytics tool named “Buried No Longer Pipe Replacement Modeling Tool” and further enhanced its analysis by conducting additional review of its distribution system and producing the “Aging Infrastructure; A Review of the Water Distribution System” report, that is attached as Exhibit 2 to O'Neill's Testimony. The report conducted a review of the pipe infrastructure by reviewing such characteristics of the system as installation periods, expected life of pipe material, main break history, non-revenue water and current replacement efforts.
- b. KAWC has not attempted to perform a cost-benefit analysis regarding the QIP. From the perspective of long-term sustainable customer service and water rates, proactively replacing mains, services and other appurtenances that are near the end of their useful life in a systematic responsible manner will result in lower costs to customers over time as compared with deferring needed replacements and addressing problems, such as leaks and main breaks, as they arise. Planned pipe replacements are much less costly on a unit cost basis than the costs of repairing breaks as they arise. *See* O'Neill Testimony, p. 32. Planned replacement also helps avoid unplanned service disruptions and incurring costs associated with property damage that can result from main breaks. *Id.* *See also* AWWA, 2001. *Dawn of the Replacement Era: Reinvesting in Drinking Water Infrastructure.* AWWA, Denver, available at www.scribd.com/document/39675402/AWWA-Dawn-of-the-Replacement-Era and AWWA, 2012. *Buried No Longer: Confronting*

America's Water Infrastructure Challenge. AWWA, Denver, available at www.awwa.org/Portals/0/files/legreg/documents/BuriedNoLonger.pdf

In addition, KAWC believes that the value of QIP is substantial, through infrastructure investment benefiting customers today and well into the future with:

- improved water quality, which enhances public health
 - increased water pressure, which provides greater fire protection and protects water quality
 - fewer main breaks and service interruptions
 - avoided maintenance and energy costs
 - and more cost-effective service and pricing in the long run for our customers.
- c. See Direct Testimony of Brent O'Neill, p. 35-36, 38-39, 44-46. The need for infrastructure renewal is expected to grow with time, so delaying investment would not only be ill advised, it would also unfairly burden the next generation of customers. The QIP rider will improve the ability to attract the capital necessary to carry out an infrastructure replacement program that supports the continued provision of quality and reliable service for the long-term benefit of our customers. The QIP proposal also will likely provide the customer with more gradual rate increases over time rather than face the steeper percentage increase that would otherwise occur in a single rate case. Given the level of investment that is necessary and ongoing, without a QIP mechanism in place, the customer would face more frequent rate cases and the costs associated with those cases.

As indicated in the Direct Testimony of Kevin Rogers page 17, lines 14 to 20:

“The QIP will enable us to develop and maintain a more systematic replacement program in our production plant facilities, tank and booster sites as well our distribution mains throughout our service territory. The accelerated systematic replacement cycle QIP supports will be more cost effective for customers in the long run because replacing our aging infrastructure will reduce the high cost of breaks and emergency situations that are not only costly to repair but also interrupt customer service and are prone to causing damage to KAWC property, customer property and city streets.”

The savings of these avoided costs of systematic main replacement vs. emergency main replacement due to unscheduled breaks and leaks cannot be specifically quantified. However, the average cost per foot of unscheduled main replacements is \$1,343 as compared to an average cost per foot of scheduled main replacement of \$153.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 51.** Refer to the O'Neill Testimony, page 36, lines 12–14. Provide support for the assertion that the infrastructure replacement construction costs are higher when the capital spending is included with rate case filings as opposed to being contained in the proposed QIP.

Response:

In reference to O'Neill Testimony, page 36, lines 12-14, there was no assertion that infrastructure replace construction costs was higher when the capital spending was included in a rate case filing as opposed to being contained in proposed QIP. The intent of Lines 12-14 on page 36 of the testimony was that the Company anticipates it will invest an additional \$4 to \$6.9 million annually if QIP is approved to address aging distribution and water treatment infrastructure over the average annual investment of \$23.69 million for the period of 2014 to 2018. KAWC anticipates that the construction costs will be similar whether the project is conducted under a proposed rate case filing or under a proposed QIP.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 52.** Refer O'Neill Testimony, page 40, lines 6–8, which states that the replacement cost for cast iron and galvanized steel main would be \$6.9 to \$12.6 million per year. Also, refer to O'Neill Testimony, page 41, lines 7–12, which states that Kentucky-American expects to incur \$6 to \$10 million per year for the first five years of the proposed QIP rider, driven primarily by cast iron and galvanized steel replacements, but also includes replacement of aging distribution pump stations. Reconcile the two amounts referenced in this portion of the O'Neill Testimony.

Response:

Mr. O'Neill's Testimony, page 40, lines 6-8 was indicating the cost of replacing 10 to 13 miles of cast iron and galvanized steel is based on the average cost per foot of representative projects over the past few years. On page 41, lines 7-12 of O'Neill Testimony is the proposed first 5 years of the QIP period. KAWC does not expect during the first 5 years to replace 10 to 13 miles. KAWC anticipates that during the first 5 years to replace between 6 to 10 miles as new contractors and resources are developed to allow for a sustained 10 to 13 miles of replacement on an annual basis following year 5. During the first 5 years, the replacement of 6 to 10 miles will allow KAWC to determine the efficient mix of projects that will allow contractors and company personnel to develop procedures and practices that ensure an effective deployment of resources. The first 5 years will also allow the Company to ensure that the impact on adjacent customers is considered and the projects provide sufficient communication and coordination with all stakeholders. Simply, page 41 of O'Neill Testimony anticipates that KAWC will need to take the first 5 years to ensure that a replacement rate of 10 to 13 miles is sustainable and that the company's contractors and resources are provided time to develop their additional workforce.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 53.** Refer to the Schwarzell Testimony, page 31, lines 12–19, and page 33, lines 4–12, regarding annual QIP filings, prospective test periods, and balancing adjustment filings to capture under or over recovery.
- a. Explain why Kentucky-American proposes to use a forecasted period rather than a historical period for its QIP.
 - b. Explain whether using a historical, rather than forecasted, period would eliminate the need for Balancing Adjustment Filings and result in a decreased QIP cost.

Response:

- a. Kentucky American proposes to use a forecasted period rather than a historical period for its QIP for several reasons.

First, a forecasted period is consistent with the methodology used to establish capital recovery for Kentucky American in its general rate cases since at least 1992. Given the well-established nature of using forecasted capital investment to establish rates for Kentucky American, it would seem appropriate to apply this approach for the QIP.

Second, with a forecasted QIP, the Company would make its annual QIP filing not later than 90 days prior to the effective date of each QIP implementation. As a part of this filing, the Company will provide a list of the proposed projects associated with the filing. This will allow the Commission to review all aspects of the filing including verification that the included projects are QIP qualifying and prudent. The Company believes this brings an element of transparency for the work being performed through the QIP and protection to its customers.

Third, the use of a forecasted QIP ensures that the Company focuses on the replacement of cast iron main in a timely manner while balancing other competing interests that arise during the year. By the forecasting of the proposed projects in the annual QIP filing, it is incumbent on the Company to ensure that it manages those projects effectively and justifies the reason for any changes. Through this process the Company believes this adds to the transparency of the QIP.

Fourth, a forecasted methodology seems to be consistent with the methodology authorized for gas infrastructure recovery mechanisms in the Commonwealth of Kentucky. The forecasted methodology authorized in the Pipe Replacement Program

for Atmos Energy Corporation¹ and the Accelerated Service Line Replacement Program authorized for Duke Energy Kentucky, Inc. are two examples.²

- b. A historic test period would eliminate the need for separate Balancing Adjustment Filings. Through the use of either a historical or a forecasted QIP, the Company would plan to perform the same amount of replacement projects. While the use of a historic period does eliminate the need for the “Balancing Adjustment” filing, it is unclear if this would result in a decrease in the cost to administer the program.

¹ Most recently in Case No. 2017-00308, which authorized rates for the forecasted period beginning October 1, 2017.

² Most recently in Case No. 2018-00198, which authorized rates for the projected 2019 period.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent O'Neill

- 54.** Explain whether the proposed QIP includes a provision to recognize cost savings and, if not, explain why it does not.

Response:

The Company is uncertain as to the exact meaning of “a provision to recognize cost savings.” However, it is anticipated that implementation of the QIP will result in avoided costs over time. See Company response to PSC 2-50.

The purpose of the QIP is to support the Company’s proposed accelerated replacement program described in Mr. O’Neill’s direct testimony (pp. 21-47) through more timely cost recovery. Without an alternative cost recovery method such as QIP, the ability to sustain an accelerated infrastructure replacement program will be difficult. With the approval of the QIP, the Company can plan and manage the consistent deployment of Company and contractor resources to more efficiently and effectively attain and maintain a replacement program that better serves the long-term interests of our customers.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 55.** Provide a detailed estimate of the cost Kentucky-American will incur when it files an annual QIP filing. Include copies of all workpapers, calculations, and assumptions in the response.

Response:

KAWC has not attempted to estimate the cost it will incur when it files the annual QIP application, nor would it be reasonable to attempt a detailed estimate without knowing what concerns the parties have, the requirements that will be imposed in the initial filing, the amount of external consultants that may be required, the amount of discovery that may be required, and whether or not the application would involve a contested hearing.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 56.** Provide a detailed estimate of the cost Kentucky-American will incur when it files an annual Balancing Adjustment filing. Include copies of all workpapers, calculations, and assumptions in the response.

Response:

KAWC has not attempted to estimate the cost it will incur when it files the QIP reconciliation applications, nor would it not be reasonable to attempt a detailed estimate without knowing what concerns the parties have, the requirements that will be imposed in the initial filing, the amount of external consultants that may be required, the amount of discovery required, and whether or not the reconciliation would involve a contested hearing.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 57.** List each American Water subsidiary that currently uses an infrastructure replacement tariff rider similar to Kentucky-American's proposed QIP.
- a. For each American Water subsidiary listed, state the frequency of its general rate adjustment proceedings for the ten years prior to implementing the infrastructure replacement tariff rider.
 - b. For each American Water subsidiary listed, state the frequency of its general rate adjustment proceedings since adopting the infrastructure replacement tariff rider.

Response:

- a. Illinois-American Water Company's ("ILAWC") Qualifying Infrastructure Plant surcharge ("QIP") was first authorized in 2004 on a limited basis, for all service areas in 2011, and expanded to different types of facilities and higher cap in June 2016. In ten years from 1995 to 2004, ILAWC filed 4 general rate cases. Frequency – 2.5 years

Indiana-American Water Company's ("INAWC") Distribution System Improvement Charge ("DSIC") was first approved in 2000. In the ten years from 1990 to 1999, INAWC filed 6 general rate cases. Frequency – 1.67 years

Iowa-American Water Company's ("IAAWC") was first approved in 2017. In the ten years from 2007 to 2016, IAAWC filed 5 general rate cases. Frequency – 2 years

Missouri-American Water Company's ("MAWC") infrastructure system replacement surcharge ("ISRS") was first approved in 2003 for only the portion of its system located in Saint Louis County. In the ten years from 1994 to 2003, MAWC did not file combined rate cases for its entire system, but filed 7 general rate cases for Saint Louis County. Frequency – 1.43 years

New Jersey-American Water Company's ("NJAWC") DSIC was first approved in 2012. In the ten years from 2003 to 2012, NJAWC filed 5 general rate cases. Frequency – 2 years

New York-American Water Company's ("NYAWC") System Infrastructure Charge ("SIC") was first approved in 2008. In the ten years from 1999 to 2008, NYAWC filed 3 general rate cases. Frequency – 3.33 years

Pennsylvania-American Water Company's ("PAWC") DSIC was first approved in 1996. In the ten years from 1987 to 1996, PAWC filed 7 general rate cases. Frequency – 1.43 years

Tennessee-American Water Company's ("TAWC") capital riders were approved in April 2014 after TAWC's last rate case which was approved in October 2012. TAWC's capital riders include the Qualified Infrastructure Investment Program ("QIIP") rider, the Economic Development Investment ("EDI") rider, and the Safety and Environmental Compliance ("SEC") rider. In the ten years from 2002 to 2012, TAWC filed 6 general rate cases. Frequency – 1.67 years

Virginia-American Water Company's ("VAWC") Water and Wastewater Infrastructure Service Charge ("WWISC") was approved in 2017 for a 3 year pilot plan for only the City of Alexandria. In the ten years from 2007 to 2016, VAWC filed 4 general rate cases. Frequency – 2.5 years

West-Virginia American Water Company's ("WVAWC") DSIC was first approved in December 2016. In the ten years from 2007 to 2016, WVAWC filed 5 general rate cases. Frequency – 2 years

- b. ILAWC has filed 4 general rate cases in the 14 years since 2004 and currently has not filed any rate cases since June 2016. Frequency – 3.5 years

INAWC has filed 6 general rate cases in the 18 years since 2000. Frequency – 3 years

MAWC has filed 6 general rate cases in the 15 years since 2003. MAWC is required to file a general rate case 3 years after the initial ISRS filing upon completion of the most recent general rate case. Frequency – 2.5 years

IAAWC has not filed a general rate case in the 1 year since 2017.

NJAWC has filed 2 general rate cases in the 6 years since 2012. Frequency – 3 years

NYAWC has filed 2 general rate cases in the 10 years since 2008. Frequency – 5 years

PAWC has filed 8 general rate cases in the 22 years since 1996. Frequency – 2.75 years

TAWC has not filed a general rate case in the 6 years since 2012.

VAWC has filed 1 general rate case in the 2 years since 2016. Frequency – 2 years

WVAWC has filed 1 general rate case in the 2 years since 2016.
Frequency – 2 years

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 58.** List the jurisdictions in which an American Water operating subsidiary's application to implement an infrastructure replacement tariff rider similar to Kentucky-American's proposed QIP was denied and provide the most recent order from the state's utility regulatory commission denying the requested infrastructure replacement tariff rider.

Response:

There is no recent American Water operating subsidiary in which the state's utility regulatory commission denied a requested infrastructure replacement tariff rider with the exception of Kentucky. Any prior American Water subsidiary that received a denial has since then been approved, in a more recent docket, with the exception of Kentucky.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 59.** List the jurisdictions in which an American Water operating subsidiary's application to implement an infrastructure replacement tariff rider similar to Kentucky-American's proposed QIP was granted and provide the most recent order from the state's utility regulatory commission granting the requested infrastructure replacement tariff rider.

Response:

See attached documents for the following jurisdictions with infrastructure surcharge mechanisms.

1. Illinois-American Water Company
2. Indiana-American Water Company
3. Iowa-American Water Company
4. Missouri-American Water Company
5. New Jersey-American Water Company
6. New York-American Water Company
7. Pennsylvania-American Water Company
8. Tennessee-American Water Company
9. Virginia-American Water Company
10. West Virginia-American Water Company

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Illinois-American Water Company	:	
	:	18-0582
Petition for Initiation of Reconciliation	:	
Hearing.	:	

ORDER

By the Commission:

I. INTRODUCTION

On March 15, 2018, Illinois-American Water Company ("IAWC", "Illinois-American" or the "Company") filed, with the Illinois Commerce Commission ("Commission"), a Petition pursuant to Section 9-220.2 of the Public Utilities Act (the "Act"), 220 ILCS 5/1-101 et seq., and 83 Ill. Adm. Code 656 ("Part 656"). IAWC seeks approval of its Qualifying Infrastructure Plant ("QIP") Surcharge Reconciliation, for the 2017 reconciliation year, January 1, 2017 through December 31, 2017 ("Reconciliation Period"), for its Champaign, Alton, Streator, Cairo, Sterling, Interurban, Pontiac, Peoria, South Beloit, Hardin, and Chicago Metro Water Districts, each of which is within the Company's Single Tariff Pricing Zone ("Zone 1 District"), its Pekin and Lincoln Water Districts, and its Chicago Metro Waste Water District, all of which are eligible to participate in the QIP program.

Pursuant to notice duly given by law and by the rules and regulations of the Commission, an evidentiary hearing was held before a duly authorized Administrative Law Judge ("ALJ") at the Commission's offices in Springfield, Illinois, on September 11, 2018. Appearances were entered on behalf of IAWC and the Commission Staff ("Staff"). IAWC presented the pre-filed sworn testimony of Rich Kerckhove, Director, Rates & Regulatory, at IAWC. Staff presented the pre-filed sworn testimony of Dianna Trost, an Accountant in the Accounting Department of the Financial Analysis Division of the Commission. At the conclusion of the hearing, the record was marked "Heard and Taken."

There were no contested issues at the completion of the evidentiary hearing and the parties agreed to file a Draft Order. On September 27, 2018, IAWC filed a Draft Order with the Commission following Staff's review.

II. STATUTORY AUTHORITY

Section 9-220.2 of the Act is titled, "Water and sewer surcharges authorized." Section 9-220.2(a) provides in part:

The Commission may authorize a water or sewer utility to file a surcharge which adjusts rates and charges to provide for recovery of . . . (iv) costs associated with an investment in qualifying infrastructure plant, independent

of any other matters related to the utility's revenue requirement. A surcharge approved under this Section can operate on an historical or a prospective basis.

Section 9-220.2(b) provides:

For purposes of this Section, "costs associated with an investment in qualifying infrastructure plant" include a return on the investment in and depreciation expense related to plant items or facilities (including, but not limited to, replacement mains, meters, services, and hydrants) which (i) are not reflected in the rate base used to establish the utility's base rates and (ii) are non-revenue producing. For purposes of this Section, a "non-revenue producing facility" is one that is not constructed or installed for the purpose of serving a new customer.

Section 9-220.2(c) states, "On a periodic basis, the Commission shall initiate hearings to reconcile amounts collected under each surcharge authorized pursuant to this Section with the actual prudently incurred costs recoverable for each annual period during which the surcharge was in effect."

Provisions in Section 9-220.2 relating to a QIP surcharge rider are implemented in 83 Ill. Adm. Code 656, "Qualifying Infrastructure Plant Surcharge." "Qualifying infrastructure plant" is defined in Section 656.20 as follows:

"Qualifying infrastructure plant" means certain nonrevenue producing eligible plant that is not reflected in the rate base used to establish the utility's base rates and is consistent with the terms of Section 656.40. A nonrevenue producing plant is plant that is not constructed or installed for the purpose of serving a new customer.

Section 656.40(a) specifies criteria which must be met if plant additions are to be classified as QIP. One such criterion is that the plant additions must be replacements of existing plant items from the accounts listed in Section 656.40(b), which include "plant items or facilities, except for land, from accounts 304 through 336 (see 83 Ill. Adm. Code 605, for water utilities), and from accounts 354 through 382 (see 83 Ill. Adm. Code 650 for sewer utilities)." Furthermore, qualifying plant shall not include "land, intangibles or a tangible plant classified as a General and Administrative plant."

Under Section 656.30(a), the QIP surcharge since the most recent rate order for the rate zone "shall not exceed an annual average 2.5% of the QIP base rate revenues, but shall not exceed 3.5% in any given year for the rate zone." Section 656.30(b) provides:

On the effective date of new base rates that provide for the recovery of the costs that had previously been recovered under the QIP surcharge rider, the NetQIP component of the QIP surcharge percentage for the applicable rate zone shall not include costs associated with qualifying infrastructure investment that were included in the rate base used to establish the utility's base rates. The utility may continue to charge or refund any reconciliation adjustment associated with the qualifying infrastructure investment that is included in the rate base used to establish the utility's base rates.

Section 656.30(f), which was added to Part 656 in an amendment effective July 1,

2016, requires a reconciliation of the projected QIP plant included in the rate base of the Company's last rate case filing for each rate zone and the actual cost of the QIP plant incurred as of the end of the projected test year in the Company's last rate case filing for each rate zone.

Formulas for determining the QIP surcharge percentage are set forth in Section 656.60. The QIP surcharge is the amount added to the customer's bill when the QIP surcharge percentage is applied. Subject to prior balances and the 2.5% annual average and 3.5% in any given year, amounts recovered through the QIP surcharge may not exceed the authorized dollar return on allowable QIP investment (investment x rate of return) plus depreciation on allowable QIP investment.

Procedures and timelines for rider and information sheet filings, and for annual reconciliations, are contained in Sections 656.70 and 656.80. Section 656.80 provides that the annual reconciliation shall include a calculation of the "R" component necessary to adjust revenue collected under the QIP surcharge rider in effect for the rate zone during the reconciliation year to an amount equivalent to the actual level of prudently-incurred QIP cost for the reconciliation year. The formula for calculating the R component is contained in Section 656.80(d). The "O" Component is the Commission-ordered adjustment component necessary to adjust actual revenue collected under the QIP surcharge to the actual level of prudently incurred QIP costs for the reconciliation year.

III. IAWC'S POSITION

On December 15, 2016, IAWC filed 2017 QIP information sheets with the Commission pursuant to the terms of the QIP riders and Part 656. The QIP surcharge percentage specified in the information sheets, effective January 1, 2017, was 0.00% for the Zone 1 District, 0.00% for the Pekin District, 0.00% for the Lincoln District, 0.00% for the Chicago Metro Wastewater District—wastewater collection services, and 0.00% for the Chicago Metro Wastewater District—wastewater collection and treatment services. The QIP rates were reset to zero effective January 1, 2017, as new base rates from the Company's last rate case were effective on that date and the investments that had previously been recovered under the QIP surcharge rider were included in the resulting rate case base rates, except as reconciled in the 2017 reconciliation in accordance with the terms of the QIP riders and Part 656.

On March 20, 2017, Illinois-American filed QIP information sheets with the Commission to credit or collect the 2016 Reconciliation R and O Components as required by Part 656.80(a). The QIP surcharge percentage specified in the information sheets, effective April 1, 2017, was 2.32% for the Zone 1 district, 1.63% for the Pekin district, 0.82% for the Lincoln district, and 2.50% for the Chicago Metro Wastewater district.

IAWC initiated the instant proceeding with the filing of its reconciliation on March 15, 2018. Since the year 2017 was the test year for the Company's last rate case, there was no QIP annual prospective operation for the year. This reconciliation provides for the reconciliation of actual QIP to the amount included in base rates for 2017 as required by Part 656.30(f). IAWC filed the testimony of Mr. Kerckhove, who sponsored IAWC Exhibits 1.01 through 1.12.

Exhibit 1.01 presented the QIP costs for the reconciliation year as required by 83

Ill. Adm. Code 656.80(f)(1), and included the summary of QIP eligible expenses by service district, and the monthly and 13-month average of accumulated QIP expenditures by QIP asset type by service district for 2017. Exhibit 1.02 presented the revenues arising through the application of the QIP surcharges during the reconciliation year as required by 83 Ill. Adm. Code 656.80(f)(2).

Exhibit 1.10 presented the reconciliation R components determined by IAWC showing the amounts to be recovered/(refunded) over a nine-month period commencing April 1, 2017, as required by 83 Ill. Adm. Code 656.80(f)(3). According to the reconciliation, the QIP was under-collected by \$4,034,212 for the Zone 1 District, under-collected by \$103,490 for the Pekin District, under-collected by \$31,957 for the Lincoln District, and under-collected by \$748,818 for the Chicago Metro Waste Water District. Exhibit 1.04 presented the schedule of actual rate base and operating income as required by 83 Ill. Adm. Code 656.80(f)(4). Exhibit 1.09 provided information regarding the prudence of IAWC's investment in QIP as required by 83 Ill. Adm. Code 656.80(h)(5).

On June 29, 2018, IAWC filed the supplemental direct testimony of Mr. Kerckhove, which reported on the status of the annual internal audit required by Section 656.100 and to revise the QIP surcharge calculation filed March 15, 2018 to correct errors identified in the course of the internal audit. In support of his supplemental testimony, Mr. Kerckhove filed IAWC Exhibit 1.08SD, IAWC Exhibit 1.10SD, and IAWC Exhibits 1.13SD – 1.17SD.

IV. STAFF'S POSITION

Staff witness Ms. Trost submitted direct testimony, Staff Ex. 1.0, which reported the results of her review of IAWC's reconciliation of its QIP Rider in effect during the Reconciliation Period. Ms. Trost did not recommend any adjustments to the Company's proposed reconciliation. She also sponsored Schedules 1.01 through 1.04 as part of her direct testimony.

Ms. Trost recommended that the Commission accept the reconciliations for the Reconciliation Period as reflected on Staff Schedules 1.01 through 1.04, reflecting a current year Factor O credit of \$390,174 for Zone 1, \$9,840 for Pekin, \$3,924 for Lincoln, and \$7,533 for Chicago Waste Water.

Ms. Trost recommended that the Factor O recovery be accomplished by its inclusion in the QIP Surcharge calculated with the first information sheet that IAWC files subsequent to the Order in this docket. Ms. Trost further recommended that Staff Schedules 1.01 through 1.04 be attached to the Order in this proceeding as an Appendix.

V. COMMISSION ANALYSIS AND CONCLUSION

The Commission finds that the 2017 QIP surcharge reconciliations as recommended by Staff and accepted by IAWC, as shown in the Appendix attached hereto, are reasonable and should be approved. The types of costs recovered and the period in which they were incurred meet the criteria set forth in Part 656.

The resulting "O" Components should be approved and recovered commencing on the effective date of the QIP Surcharge Percentage specified in IAWC's next Information Sheet filing.

Subject to the adjustments adopted above, the record also indicates that the costs

recovered through the surcharge were prudently incurred within the meaning of Section 9-220.2(c) of the Act. As noted above, under Section 9-220.2(c), only prudently incurred costs are recoverable through a surcharge under Part 656. With respect to future rate proceedings, the relationship between the determinations in this Order and the review of rate base items is an issue not reached in this Order.

VI. FINDING AND ORDERING PARAGRAPHS

The Commission, having considered the entire record herein and being fully advised in the premises, is of the opinion and finds that:

- (1) Illinois-American Water Company provides water and sewer public utility services to the public in certain areas in the State of Illinois and is a public utility within the meaning of the Public Utilities Act;
- (2) the Commission has jurisdiction over Illinois-American Water Company and the subject matter of this proceeding;
- (3) the facts recited and conclusions reached in the prefatory portion of this Order are supported by the record and are hereby adopted as findings of fact;
- (4) the 2017 QIP surcharge reconciliations for the Zone 1, Pekin, Lincoln, and Chicago Metro Waste Water Districts of Illinois-American, as summarized in the Appendix hereto, are approved; and
- (5) the credit under the O Component shall take place over a nine-month period, to commence with the effective date of the QIP Surcharge Percentage specified in Illinois-American Water Company's next Information Sheet filing.

IT IS THEREFORE ORDERED that the reconciliation of revenues and costs under the Qualifying Infrastructure Plant Surcharge Rider for Illinois-American Water Company for the Reconciliation Period January 1, 2017 through December 31, 2017, is hereby approved as shown in the Appendix attached hereto.

IT IS FURTHER ORDERED by the Illinois Commerce Commission that, in calculating QIP Surcharge Percentages for purposes of the next Information Sheet filings, Illinois-American Water Company shall include, along with other components specified in 83 Ill. Adm. Code 656, the O Components recommended by Commission Staff and approved herein.

IT IS FURTHER ORDERED that all motions, petitions, objections, or other matters in this proceeding that remain unresolved are hereby resolved consistent with the conclusion contained herein.

IT IS FURTHER ORDERED that pursuant to Section 10-113(a) of the Public Utilities Act and 83 Ill. Adm. Code 200.880, any application for rehearing shall be filed within 30 days after service of the Order on the party.

IT IS FURTHER ORDERED that subject to the provisions of Section 10-113 of the Act and 83 Ill. Adm. Code 200.880, this Order is final; it is not subject to the Administrative Review Law.

By Order of the Commission this 25th day of October, 2018.

(SIGNED) BRIEN SHEAHAN

Chairman

BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION

NASHVILLE, TENNESSEE

June 29, 2018

IN RE:)
)
PETITION OF TENNESSEE-AMERICAN WATER)
COMPANY REGARDING THE 2018 INVESTMENT)
AND RELATED EXPENSES UNDER THE QUALIFIED) **DOCKET NO.**
INFRASTRUCTURE INVESTMENT PROGRAM) **17-00124**
RIDER, THE ECONOMIC DEVELOPMENT)
INVESTMENT RIDER, AND THE SAFETY AND)
ENVIRONMENTAL COMPLIANCE RIDER)

ORDER APPROVING *PETITION*

This matter came before Chairman David Jones, Commissioner Herbert H. Hilliard, and Commissioner Keith Jordan of the Tennessee Public Utility Commission (the “Commission” or “TPUC”), the voting panel assigned to this docket, at a regularly scheduled Commission Conference held on April 9, 2018 for consideration of the *Petition* filed by Tennessee-American Water Company (“TAWC”, “Tennessee American” or the “Company”) on November 7, 2017.

BACKGROUND

TAWC provides residential, commercial, industrial and municipal water service to customers in Tennessee and North Georgia. TAWC is a wholly-owned subsidiary of American Water Works Company, Inc. On November 7, 2017, TAWC filed a *Petition* requesting Commission approval to change the tariff percentage rates for the Qualified Infrastructure Investment Program Rider (“QIIP” or “QIIP Rider”), the Economic Development Investment Program Rider (“EDI” or “EDI Rider”), and the Safety and Environmental Compliance Program

Rider (“Safety Rider” or “SEC”). The QIIP, EDI and SEC (collectively, “Capital Riders”) were previously approved by the Commission on April 14, 2014 in Docket No. 13-00130.¹

On January 8, 2018, the Consumer Protection and Advocate Division of the Office of the Attorney General (“Consumer Advocate”) filed its *Petition to Intervene*. On January 22, 2018, the Hearing Officer granted the Consumer Advocate’s intervention.

PETITION

In accordance with the tariffs approved in TPUC Docket No. 13-00130, on or before December 1 of each year, the Company shall submit to the Commission an annual filing that calculates the tariff Rider percentage rates for the upcoming calendar year.² In pre-filed testimony in support of the *Petition*, Ms. Linda C. Bridwell asserted the Capital Riders were calculated consistent with the modifications and clarifications ordered in TPUC Docket Nos. 14-00121 and 15-00029, and the corrections made to the calculations in TPUC Docket Nos. 15-00111, 16-00022 and 17-00020.³

Per the directive of the Commission, the Company asserted new services, new meters and the alternative fuel vehicles costs have been removed from the EDI rider 2018 calculations and the cumulative amounts have been removed from the review periods of 2014, 2015, 2016 and 2017. Additionally, the Company provided new worksheets itemizing total additions, removals and retirements for 2014, 2015, 2016 and 2017 in an attempt to provide a clear audit

¹ See *In re: Petition of Tennessee-American Water Company for Approval of a Qualified Infrastructure Investment Program, an Economic Development Investment Rider, a Safety and Environmental Compliance Rider and Pass-Throughs for Purchased Power, Chemicals, Purchased Water, Wheeling Water Costs, Waste Disposal, and TRA Inspection Fee*, Docket No. 13-00130, *Order Approving Amended Petition* (January 27, 2016).

² See *Petition*, pp. 5-7 (November 7, 2017).

³ Linda C. Bridwell, Pre-filed Direct Testimony, pp. 3-4 (November 7, 2017).

trail.⁴ The data used to calculate the Capital Riders was obtained from the books of the Company and personnel with direct knowledge of the related facts.⁵

Ms. Bridwell noted six changes from previous filings to the Excel worksheets to assist in review of the *Petition*: (1) the 2018 forecasted numbers and all formulas have been updated, and the actual 2016 capital expenditures from TPUC Docket 17-00020 have been added; (2) the method of calculation of the 2018 in-service amounts for planned lines has been changed to assume the projected in-service amount to be the capital expenditure during that month; (3) Tennessee American has implemented the methodology approved by the Commission in Docket No. 17-00020 to remove an estimated amount of performance compensation capitalized above the amount authorized in Docket No. 17-00029 for years 2013 through 2016. This reduction is carried forward in this filing and corrections have been made internally to prevent future capitalization above the authorized amount; (4) two workpaper tabs that estimated retirement and cost of removal amounts by the NARUC account for 2014-2016 have been eliminated from the worksheet; (5) the actual Contributions in Aid of Construction (“CIAC”) amounts from 2016 are used to forecast the Contributions in the Aid of Construction amounts for 2017 and 2018; (6) due to permitting delays, one scheduled 2017 project (Investment Project I-26-020034) was moved to 2018, and in order to manage construction expenditures, two 2018 projects (IP 26-050002 and IP 26-050004) were moved up to and completed in 2017.⁶

Having reconsidered Mr. William H. Novak’s proposal in his testimony as witness for the Consumer Advocate in Commission Docket 16-00126, Tennessee American agreed to eliminate the use of the multi-month average calculation of plant additions as the lag time involved has no

⁴ *Id.* at 8-9.

⁵ *Id.* at 4-6.

⁶ *Id.* at 9-11.

material effect on the calculation of the revenue requirement.⁷ While Tennessee American proposed to eliminate the multi-month average calculation for all future petitions, the Company did not propose to re-calculate any prior years.⁸ Ms. Bridwell's testimony also described additional changes made to the Excel spreadsheet that are organizational in nature designed to help facilitate the review process.⁹

Ms. Bridwell testified that the Capital Rider calculations are prospective and utilize average end-of-month balances for the attrition period, beginning January 1, 2018 through December 31, 2018, and include only those qualified plant investments since the last rate case, reduced by plant retirements and including associated depreciation and tax expense. According to Ms. Briwell, while the EDI and SEC allowed recovery of operating expenses, none were included for recovery in the *Petition*.¹⁰

In summary, the Company's *Petition* proposed a QIIP Rider of 10.77% to generate \$5,069,482 in revenue recovery; an EDI Rider of 0.45% to generate \$211,705 revenue recovery; and an SEC Rider of 6.56% to generate \$3,085,842 revenue recovery.¹¹ According to Ms. Bridwell, the Capital Riders remain in the public interest and provide an incentive for the Company to invest in the infrastructure necessary to provide safe and reliable service and spur economic development within its service territory because the investment can be recovered immediately and without the costs and time needed for a rate case. Ms. Bridwell stated she is not aware of any changes in market conditions or other factors that would affect whether the Riders remain in the public interest.¹²

⁷ *Id.* at 11-12.

⁸ *Id.*

⁹ *Id.* at 12-13.

¹⁰ *Id.* at 17.

¹¹ *Id.* at 28-29.

¹² *Id.* at 30-33.

The Company also provided the pre-filed testimony of Brent E. O'Neill P.E. in support of the *Petition* concerning the investment plan for determining the QIIP, EDI and SEC with (1) Recurring Projects ("RP") and (2) Major Projects identified as investment projects ("IP"). Tennessee American provided a copy of its 2018 Strategic Capital Expenditures Plan with the testimony of Mr. O'Neill.¹³ Recurring projects consist of smaller main projects, replacement of hydrants and valves, service line and meter setting replacements, security improvements, plant control improvements, projects to replace and maintain treatment and new mains to assist with economic development. Main projects are designed to meet peak hour customer demands while maintaining the pressure requirements set by TPUC rules and to provide sufficient fire flow as directed by the Insurance Services Office ("ISO").¹⁴

According to Mr. O'Neill, the QIIP allows Tennessee American to replace aging infrastructure such as small diameter mains and mains with continuing leaks on a timely basis. The replacements are planned and proactive resulting in a more reliable and safe infrastructure, with less of a rate shock to customers. During 2018, Tennessee American plans on replacing 15,950 feet of main with an approximate cost of \$1,725,000. The Company expressed the scheduled replacements will result in fewer water leaks, a reduction in the amount of water produced and less energy consumption.¹⁵

Mr. O'Neill testified that the majority of mains scheduled for replacement during 2018 are cast iron and galvanized material. While these types of mains represent about 50.6% of main footage within the system, they were responsible for approximately 89.3% of all breaks from January 2010 to September 2017. For this reason, the Company is focusing on cast iron and galvanized replacements for the next several decades until an estimated 700 miles of this

¹³ Brent E. O'Neill P.E., Pre-Filed Direct Testimony, pp. 4-5 (November 7, 2017).

¹⁴ *Id.* at 5-6.

¹⁵ *Id.* at 10-12.

material is removed. The QIIP also includes unscheduled main replacements or restoration of existing mains. Unscheduled replacements occur when there is an unexpected event such as a leak and the company determines it is more beneficial to replace the main rather than just repairing the failure. Tennessee American is proposing to spend \$1,029,000 for unscheduled replacements in 2018. According to Mr. O'Neill, this amount is similar to the historical five-year average during 2012-2016 spent for unscheduled mains.¹⁶

For 2018, Tennessee American has budgeted \$110,000 for relocation of existing water mains which occur because of municipal or state agency projects, significantly less than the historical five-year average (2012-2016) of \$965,844.¹⁷ The budgeted amount to replace hydrants and valves is \$422,000, an amount the Company submits is similar to the historical five-year average from 2012-2016.¹⁸ Tennessee American intends to spend \$630,250 to replace small diameter pipe between the customer and the Company's distribution main, an amount greater than the historical five-year average (2012-2016) of \$498,869. Based on the average cost of replacement, this will allow the Company to replace approximately 316 services.¹⁹

The QIIP also includes \$2,255,940 for replacement of approximately 13,591 meters during 2018, a projection that is above the historical five-year average between 2012 and 2016 of \$939,857. Mr. O'Neill attributed this increase to the replacement of meters with Automatic Meter Reading ("AMR") meters. AMR meters allow the Company to read meters from the road rather than physically approaching each meter. The current plan allows Tennessee American to have full deployment of these meters throughout its system by 2021.²⁰

¹⁶ *Id.* at 15-16.

¹⁷ *Id.* at 18.

¹⁸ *Id.* at 19.

¹⁹ *Id.* at 17-20.

²⁰ *Id.* at 20-21.

Water storage tank rehabilitation/painting is budgeted at \$1,000,000 for the rehabilitation of Aldrich Unit 6.²¹ One Capital Investment Project included in the QIIP is the Tennessee River Transmission main Crossing Project, costing \$2,414,209. This project was included in the 2017 QIIP, but due to delays in the permitting process, the project was not completed. The Company expects the in-service date for this project to be in December of 2018. According to Mr. O'Neill, all expenditures on this project from 2017, approximately \$162,000, are to be part of the proposed 2018 QIIP. Projects that were scheduled for 2018 (Whitwell WTP and Citico WTP) were moved to 2017 to balance out expenditures.²²

The EDI rider budgets \$963,000 for new water mains associated with economic development. The planned expenditures are intended to increase water capacity and pressure in Whitwell and Chattanooga. The Company expressed it intended to spend \$133,000 on new hydrants and valves, providing for the economic health and growth of the communities.²³

The SEC includes System Control and Data Acquisition ("SCADA") Equipment and Systems, Security Equipment and Systems, and Process Plant Facilities and Equipment. Tennessee American budgeted \$160,000 for SCADA improvements in 2018. These improvements primarily include replacing out of date controllers located at eight remote sites. The 2018 budget for Security Equipment and Systems is \$150,000, and Process Plant Facilities and Equipment spending is budgeted at \$890,000. All of the projected expenditures ensure that the operation of the water system is meeting state and federal safety and environmental requirements.²⁴

²¹ *Id.* at 21-22.

²² *Id.* at 22-25.

²³ *Id.* at 28-30.

²⁴ *Id.* at 31-34.

SUPPLEMENTAL TESTIMONY OF TENNESSEE AMERICAN

On February 7, 2018, Linda Bridwell submitted supplemental testimony to present a change in the Company's Capital Riders filing following the receipt of the Consumer Advocate's Second Discovery Request concerning the recent enactment of 2017 Tax Reform Act which decreased the federal corporate income tax rate from 35% to 21%, effective January 1, 2018. The Company proposed to adjust the 2018 Capital Recovery Riders and the 2018 Capital Recovery Riders Accumulated Deferred Income Tax ("ADIT") to reflect the new tax rate while a recalculation of all ADIT will be addressed at a later date in a future Docket.²⁵ Following the first substantive change in the proposed *Petition*, Tennessee American is proposing a QIIP of 9.94%, an EDI of 0.41%, and a SEC of 6.03% yielding a decrease of \$651,790 from the original revenue requirement filed by the Company.²⁶

POSITION OF THE CONSUMER ADVOCATE

Following discovery and exchanges of information with TAWC, Mr. Hal Novak and Mr. David N. Dittmore submitted pre-filed testimony on behalf of the Consumer Advocate which addressed the calculations of TAWC's proposed Capital Riders.

While overall finding the calculations supporting the surcharges to be reasonable, Mr. Novak did note three concerns: (1) The lack of supporting data in the filing; (2) the lack of consistency of calculations; and (3) the lack of accuracy of the calculations.²⁷ Mr. Novak asserts that there is unsupported hard-coded data for over \$520,000 in forecasted plant additions and \$3,000,000 in forecasted removal costs.²⁸ Mr. Novak recommended that the Commission direct

²⁵ Linda Bridwell, Supplemental Pre-filed Testimony, pp. 1-3 (February, 7, 2018).

²⁶ *Id.* at 5.

²⁷ William H. Novak, Pre-filed Direct Testimony, pp. 5-6 (February 21, 2018).

²⁸ *Id.* at 6-7.

the Company to either provide accurate supporting data for these hard-coded numbers or remove these amounts from the filing.²⁹

The second concern of Mr. Novak is that the Company made changes to the calculation method for not only the 2018 filing but also retroactively applied them to the 2017 budget filing. Specifically, these changes are as follows: (1) the Company eliminated the three-month average in forecasting monthly plant additions and substituted the projected monthly construction expenditure for each month, (2) the Company updated Business Unit allocation factors based on a three-year average 2014-2016 instead of actual expenditures from 2012, and (3) the Company updated the forecast for retirements and removal costs based on a three-year average 2014-2016 instead of estimating the costs.³⁰ While Mr. Novak does not oppose these changes for this filing and any future filings, he believes that it is improper to apply them retroactively to 2017. He recommends that the Commission direct the Company to provide a recalculated filing that includes the previously approved calculation method for 2017.³¹

Mr. Novak's final concern is that the Company did not deduct any customer provided CIAC before calculating the appropriate tax depreciation rate. In response to the Consumer Advocate's second data request, the Company relayed that it intended to exclude the CIAC from the tax depreciation calculation in all future filings.³² Mr. Novak does not see any basis for this change and recommends that the Commission direct the Company to provide a recalculated filing that includes the CIAC on the tax depreciation calculation.³³

Mr. Novak notes that Tennessee American's rates appear to be the lowest of its affiliates from Kentucky, Virginia, and West Virginia, even with the current filing increase. Therefore, he

²⁹ *Id.*

³⁰ *Id.* at 8-11.

³¹ *Id.*

³² *Id.* at 12.

³³ *Id.* at 11-12.

concludes that the Capital Riders appear to allow the Company to “replace critical infrastructure while at the same time maintaining a relatively favorable rate structure.”³⁴

Mr. David N. Dittmore provided pre-filed direct testimony addressing the calculation of the ADIT balances used by the Company to reduce the Rate Base within the filing. Mr. Dittmore opined that the balances were lower than expected and raised concerns the Rate Base has been overstated.³⁵ In a review of the calculations by the Consumer Advocate, it was determined that standard tax depreciation rates were used to calculate the ADIT balance rather than Bonus Depreciation. Bonus Depreciation was used within the Company’s tax returns. Mr. Dittmore asserted that it is important that the tax depreciation amounts in the Capital Riders filing should match the rates used in the tax return.³⁶

Mr. Dittmore disagrees with the Company’s practice of not using Bonus Depreciation in the calculation of the ADIT because it has been in a Net Operating Loss (“NOL”) since 2008. Mr. Dittmore submits that the Company should calculate the ADIT using Bonus Depreciation and then “assign an appropriate NOL asset to the Riders based upon the amount and composition of the TAWC taxable income for the periods in question.” Although he cannot definitively conclude whether the net ADIT is overstated or understated, Mr. Dittmore asserts that it is not correct and needs to be recalculated.³⁷

Mr. Dittmore testified that ignoring Bonus Depreciation could significantly affect the ADIT balance. Therefore, Mr. Dittmore recommends that the Company’s true-up calculations

³⁴ *Id.* at 12-13.

³⁵ David N. Dittmore, Pre-filed Direct Testimony, pp. 5-6 (February 21, 2018).

³⁶ *Id.*

³⁷ *Id.* at 6-7.

include Bonus Depreciation rates, consistent with its tax return, and that this issue be addressed in the subsequent Rider true-up filing.³⁸

Mr. Dittmore affirms that TAWC has properly handled the tax rate change from 35% to 21% from the Tax Cut and Jobs Act signed into law in December; however, the Company has not yet determined how to handle the excess amount now accumulated in the ADIT due to this change. Mr. Dittmore recommended that the Company should file all needed information by the deadline put forth by Docket 18-00001 and that the 21% tax rate should be incorporated in the Capital Riders true-up filing effective January 1, 2018, instead of the effective date of the new Capital Riders in this Docket. Mr. Dittmore further recommends that the Company should put aside the excess ADIT from the Capital Riders, not just excess ADIT associated with the base rate, to be used in future ratemaking.³⁹

REBUTTAL OF TENNESSEE AMERICAN

In pre-filed rebuttal testimony filed on February 21, 2018, Ms. Bridwell does not agree with Mr. Novak's concerns over the supporting data for the hard coded amounts \$520,000 in forecasted plant additions and \$3,000,000 in forecasted removal costs.⁴⁰ Ms. Bridwell stresses that Tennessee American has tried hard to minimize hard coded data in their worksheets and works conscientiously to provide adequate support and clarification for all data. Furthermore, the Company has provided all information requested by the Consumer Advocate. Ms. Bridwell asks that the Commission reject Mr. Novak's recommendation.⁴¹

While Ms. Bridwell does admit that Tennessee American eliminated the 3-month average for Business Units A, B, C, and D from the 2018 In-Service SCEP forecast, she does not agree

³⁸ *Id.* at 8-9.

³⁹ *Id.* at 10-12.

⁴⁰ Linda C. Bridwell, Pre-filed Rebuttal Testimony, pp. 1-2 (February 28, 2018).

⁴¹ *Id.* at 5-6.

with Mr. Novak's claim that the Company retroactively applied this to the 2017 forecast. She maintains that the 3-month average formulas are "clearly visible" on the worksheet. Only the 2018 forecast was changed to a monthly construction cost amount.⁴²

Ms. Bridwell acknowledged that, as a result of an internal miscommunication, the Company did update their allocation factors and methods for calculating the forecasted retirement and removal costs without providing notice of the change.⁴³ In the Company's estimation, the new method is a better way to handle the forecasts and the difference between the two ways is immaterial and should not be reversed. Nevertheless, the Company will consent to change it back if contention over this issue persists.⁴⁴

With respect to Mr. Novak's concerns over the changes made to the Tax Depreciation calculation involving the CIAC, Ms. Bridwell testified that the two business units (D and E), included in the 2018 CIAC, were deducted from the tax depreciation reconciliation calculations but were not included in the Capital Riders filing because it would have required the creation of a separate worksheet and would have increased the complexity of the calculation.⁴⁵ She asserted that when the CIAC is subtracted in the calculation, the balance is actually slightly higher than when it is not subtracted. This is to the customers' advantage and will be trued-up in the reconciliation anyway. Because of the complexity of the calculation and that fact that the result benefits the customers, Ms. Bridwell does not agree with Mr. Novak that the calculation should be changed to include the deduction of the CIAC.⁴⁶

Ms. Bridwell disagreed with Mr. Dittmore's assertion that Bonus Depreciation should be included in the Riders. The Company claims to have been in a NOL since 2008 and strongly

⁴² *Id.* at 7-8.

⁴³ *Id.* at 9.

⁴⁴ *Id.*

⁴⁵ *Id.* at 10.

⁴⁶ *Id.*

opposes the retroactive inclusion of Bonus Depreciation.⁴⁷ Ms. Bridwell, like Mr. Dittmore, contends that the issue is best addressed in a reconciliation filing of the Capital Riders.⁴⁸ Ms. Bridwell contested Mr. Dittmore's recommendation that the reduced Corporate Tax Rate become effective January 1, 2018 instead of when the new Capital Rider amounts are approved and come into effect. According to Ms. Bridwell, the Company cannot retroactively discount the rates when the new Riders have not yet been implemented as the prior year's rates stay in place until new rates are approved. When the 2018 reconciliation is filed and approved in 2019, the customers' bills will be credited any amount that they may have overpaid from the few months the new rates were not in effect because the review period will be all of 2018, from January through December.⁴⁹

With respect to Mr. Dittmore's concerns about the re-assessment of the ADIT in light of the reduced corporate tax rate, Ms. Bridwell states that the Company already has American Water tax experts working on the re-measurement of the ADIT but that the final calculations will most likely not be completed until much later in 2018. As Mr. Dittmore recommends, the Company will address all parts of the ADIT, not just the parts associated with base rates.⁵⁰

SUPPLEMENTAL REBUTTAL OF TENNESSEE AMERICAN REFLECTING AMENDMENTS

In Supplemental Rebuttal Testimony filed on March 15, Ms. Bridwell states that, through mutual cooperation and negotiation, both the Company and the Consumer Advocate have come to an agreement.⁵¹ The result of this agreement increases the revenue requirement by \$19,330 to \$7,734,569.⁵² The Company amendments resulted in a QIIP surcharge of 10.05%, an EDI

⁴⁷ *Id.* at 11.

⁴⁸ *Id.*

⁴⁹ *Id.* at 11-12.

⁵⁰ *Id.* at 12-13.

⁵¹ Linda C. Bridwell, Supplemental Rebuttal Testimony, p. 1 (March 15, 2018).

⁵² *Id.*, Exhibits, at EXH Summary.

surcharge of 0.41% and a SEC surcharge of 5.97% effective January 1, 2018.⁵³ The Company projects an increase in average residential customer's bill of \$0.54 per month or \$6.48 a year.⁵⁴

According to Ms. Bridwell, changes were made to their workpapers, including the addition of a new tab to calculate the retirements and removals as used in Docket No. 16-00126.⁵⁵ Specifically, Ms. Bridwell stated that the Company has addressed Mr. Novak's concern over unsupported, hard-coded data and resolved the issue by revising the worksheets to match the supporting documentation. Ms. Bridwell testified that Mr. Novak's concerns over the consistency of the calculations have also been resolved. No changes have been made to the 3-month average for Business Units A, B, C, and D in 2017. However, the Company restored the 2017 calculations for the Business Unit allocation factors and forecast for retirements/forecast for removed costs back to the way they were before this filing. The 2018 calculations remain the same.⁵⁶ Ms. Bridwell asserts that the Company has now recalculated the tax depreciation rate for 2017 and 2018 with the deduction of CIAC, resolving this issue.⁵⁷

Ms. Bridwell maintains that the adjustments made to the filing were not consequential and were made in the spirit of "transparency, cooperation and collaboration." Ms. Bridwell therefore maintains that the Capital Riders remain in the public interest and recommends that the Commission approve the 2018 Capital Riders, as revised.⁵⁸

⁵³ *Id.*

⁵⁴ *Id.* at 7.

⁵⁵ *Id.* at 2.

⁵⁶ *Id.* at 5-6.

⁵⁷ *Id.* at 6-7.

⁵⁸ *Id.* 7-8.

MARCH 19, 2018 HEARING AND APPEARANCES

A Hearing in this matter was held before the voting panel on March 19, 2018, as noticed by the Commission on March 9, 2018. Participating in the hearing were the following parties and their respective counsel:

TAWC - Melvin J. Malone, Esq., Butler, Snow, O'Mara, Stevens & Cannada, PLLC, 1200 One Nashville Place, 150 Fourth Avenue North, Nashville, Tennessee 37219.

Consumer Advocate – Daniel P. Whitaker, III, Esq., Office of the Attorney General, P.O. Box 20207, Nashville, Tennessee 37202.

At the beginning of the hearing, the Consumer Advocate indicated that, with the filing of the Company's supplemental testimony containing amendments to the *Petition* and supporting workpapers, the parties had reached an agreement and that there were no longer any contested issues.⁵⁹ The Consumer Advocate noted that the issue concerning the treatment of ADIT and bonus depreciation raised by Mr. Dittmore was not resolved but reserved the right to address the matter in the next Capital Rider reconciliation, and the Company indicated that was their understanding of the agreement between the parties.⁶⁰

The voting panel heard testimony by Mr. Brent O'Neill and Ms. Linda Bridwell on behalf of the Company and Mr. William H. Novak and Mr. David N. Dittmore on behalf of the Consumer Advocate. During the hearing, the public was given an opportunity to offer comment, but no member of the public sought to comment on the *Petition*.

FINDINGS AND CONCLUSIONS

Upon review of the entire evidentiary record in this matter, the panel unanimously found

⁵⁹ Transcript of Proceeding, pp.11-12 (March 19, 2018).

⁶⁰ *Id.*, 12-13.

the revisions made to the worksheets to match and bolster supporting documentation for the hard coded numbers in plant additions and removal costs are proper and necessary and have sufficiently resolved the related contested issue.

The panel further concluded the recalculations made by the Company to restore the 2017 calculations for the Business Unit allocation factors and the forecast for retirements and removal costs to be reasonable. Further, the recalculation of the tax depreciation rate to include the deduction of CIAC is also reasonable. These two recalculations have adequately resolved the related contested issues. Based upon the record and assertions by the parties, the parties are in agreement that the issue as to whether and to what extent bonus depreciation is included in the calculation of ADIT should be addressed in a future Capital Rider reconciliation filing. The panel voted unanimously to accept this position and therefore find this issue is moot in the instant docket.

Based upon the preceding, the panel unanimously voted to approve a Qualified Infrastructure Investment Program Rider of 10.05%; an Economic development Investment Rider of 0.41%; and a Safety and Environmental Compliance Rider of 5.97%.

Finally, the panel voted unanimously that the three mechanisms continue to benefit both consumers and Tennessee American. The programs allow the utility timely recovery of investment related expenses to ensure safe and reliable drinking water and promote economic development, while benefitting consumers through reduced rate case and legal expenses that would otherwise result through expensive rate case proceedings.

IT IS THEREFORE ORDERED THAT:

1. The *Petition*, as subsequently amended, filed by Tennessee-American Water Company on November 7, 2017, is approved.

2. A Qualified Infrastructure Investment Rider of 10.05% resulting in annual revenues of \$ 4,730,639 is approved.

3. An Economic Development Investment Rider of 0.41% resulting in annual revenues of \$194,545 is approved.

4. A Safety and Environmental Compliance Rider of 5.97% resulting in annual revenues of \$2,809,385 is approved.

Chairman David F. Jones, Commissioner Herbert H. Hilliard and Commissioner Keith Jordan concur.

ATTEST:



Earl R. Taylor, Executive Director

ORIGINAL

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF INDIANA-AMERICAN)
WATER COMPANY, INC. FOR APPROVAL)
OF (A) A NEW DISTRIBUTION SYSTEM)
IMPROVEMENT CHARGE ("DSIC"))
PURSUANT TO IND. CODE CHAP. 8-1-31; (B))
A NEW RATE SCHEDULE REFLECTING)
THE DSIC; AND (C) INCLUSION OF THE)
COST OF ELIGIBLE DISTRIBUTION)
SYSTEM IMPROVEMENTS IN ITS DSIC)

CAUSE NO. 42351 DSIC 11

APPROVED: MAR 14 2018

ORDER OF THE COMMISSION

Presiding Officers:

David E. Ziegner, Commissioner
Brad J. Pope, Administrative Law Judge

On January 18, 2018, Indiana-American Water Company, Inc. ("Indiana-American" or "Petitioner") filed with the Indiana Utility Regulatory Commission ("Commission") its Petition and Submission of Case-in-Chief for approval of a new distribution system improvement charge ("DSIC") pursuant to Ind. Code ch. 8-1-31 and 170 IAC 6-1.1. On January 26, 2018, the City of Crown Point, Indiana ("Crown Point") filed its Petition to Intervene in this Cause, which the Presiding Officers granted on February 5, 2018. On January 29, 2018, Sullivan Vigo Rural Water Corporation ("Sullivan Vigo") filed its Petition to Intervene in this Cause, which the Presiding Officers granted on February 12, 2018. The Indiana Office of Utility Consumer Counselor ("OUCC") filed its case-in-chief on February 19, 2018. Petitioner filed its rebuttal testimony and attachments on February 26, 2018. On February 28, 2018, Sullivan Vigo filed its Motion to Withdraw Intervention, which the Presiding Officers granted on March 1, 2018.

A public evidentiary hearing was convened in this Cause on February 28, 2018, at 1:30 p.m. in Room 224 of the PNC Center, Indianapolis, Indiana. Petitioner, Crown Point, and the OUCC appeared and participated at the hearing and offered their respective evidence into the record, which was admitted without objection.

Based on the applicable law and evidence presented, the Commission now finds:

1. **Notice and Jurisdiction.** Due, legal, and timely notice of the public hearing in this Cause was given and published as required by law. Petitioner also provided notice of its filing in this Cause to its wholesale customers pursuant to 170 IAC 6-1.1-4. Petitioner is a "public utility" within the meaning of that term in Ind. Code § 8-1-2-1 and is subject to the jurisdiction of the Commission in the manner and to the extent provided by the laws of the State of Indiana. Under Ind. Code ch. 8-1-31 and 170 IAC 6-1.1, the Commission has jurisdiction over DSIC proceedings. As such, the Commission has jurisdiction over Petitioner and the subject matter of this proceeding.

2. **Petitioner's Characteristics.** Petitioner is an Indiana corporation engaged in the business of rendering water utility service to customers in numerous municipalities and counties throughout the State of Indiana for residential, commercial, industrial, public authority, sale for resale, and public and private fire protection purposes. Petitioner also provides sewer utility service in Wabash and Delaware Counties.

3. **Relief Requested.** Petitioner seeks approval of a DSIC pursuant to Ind. Code ch. 8-1-31, a new rate schedule reflecting the DSIC, and approval of the costs of the eligible Distribution System Improvements ("Improvements") in Petitioner's DSIC. Petitioner's most recent rate order was issued in Cause No. 44450 on January 28, 2015 ("2015 Rate Order"). On December 30, 2015, Petitioner filed a Step Two True-Up to update rate base as set forth in the Stipulation and Settlement Agreement approved by the 2015 Rate Order, which took effect January 29, 2016. The rate base as updated by that true-up is referred to herein as the "2015 Rate Order Rate Base." Petitioner's most recent DSIC was approved in Cause No. 42351 DSIC 10 on March 22, 2017 (the "DSIC 10 Order"), approving a DSIC that when combined with the 1.95% rate approved in Cause No. 42351 DSIC 9 on May 4, 2016 (the "DSIC 9 Order"), would equate to a 6.60% rate, calculated to produce total annual DSIC revenues of \$8,292,811. This surcharge was reduced to 6.40% because of the DSIC 9 reconciliation approved by the Commission with an effective date of May 17, 2017 (the "DSIC 9 Reconciliation Order"). In accordance with the Commission's rules, Petitioner's Reconciliation Report for the DSIC 10 Order is not due for filing until the end of the 30-day period beginning March 22, 2018. The DSIC Improvements approved in the DSIC 10 Order consisted of non-revenue producing projects placed in service between December 1, 2015, and November 30, 2016, and were not included in Petitioner's 2015 Rate Order Rate Base.

Petitioner proposes to add to the DSIC approved in the DSIC 9 Order, the DSIC 10 Order, and the DSIC 9 Reconciliation Order, non-revenue producing projects placed in service between December 1, 2016, and November 30, 2017, that were not included in the 2015 Rate Order Rate Base or prior DSICs. Petitioner's proposed DSIC would produce total annual DSIC revenues of \$7,404,634. The total DSIC combined revenues for DSIC 9 (including reconciliation), DSIC 10, and DSIC 11 are \$17,626,142 as shown on Pet. Ex. 1, Att. SSH-2, Schedule 1. The combined DSIC 9 (including reconciliation), DSIC 10, and DSIC 11 revenues represent less than 10% of the base revenue level approved in the 2015 Rate Order (as adjusted by the Step Two True-Up). Petitioner determined that the total number of meter equivalents for the DSIC 11 12-month period was 4,506,747. The total DSIC revenue of \$17,626,142 divided by the total meter equivalents results in Petitioner's proposed monthly surcharge of \$3.91 per equivalent 5/8" meter.

4. **Petitioner's Direct Evidence.** Petitioner presented the direct evidence of Gary M. VerDouw, Director of Rates and Regulatory for Indiana-American, and Stacy S. Hoffman, Director of Engineering for Indiana-American.

A. **Calculation of DSIC 11.** Mr. VerDouw testified regarding the filing requirements and methodology for calculating the DSIC. Mr. VerDouw provided evidence regarding the calculation of the proposed DSIC, and he sponsored Petitioner's proposed rate. Mr. VerDouw explained how the surcharge was calculated in previous years as a percentage that was applied to both the consumer's volumetric and metered service charge revenues for all rate groups. He also explained that amendments to Ind. Code § 8-1-31-8 have caused the surcharge

applicable to the total DSIC revenue requirement to be calculated as a fixed charge based upon a meter equivalency size in this proceeding. Mr. VerDouw explained that Petitioner currently has a DSIC surcharge in effect of 6.40%, which was approved by the Commission with an effective date of May 17, 2017, resulting from the DSIC 9 reconciliation. Mr. VerDouw testified that Petitioner proposes to add to the DSIC 9 reconciliation, DSIC 9, and DSIC 10 surcharge an additional surcharge to include only non-revenue producing projects placed in service between December 1, 2016, and November 30, 2017, that were not included in rate base in the 2015 Rate Order Rate Base.

Mr. VerDouw then discussed how Petitioner calculated the Net Investor Supplied DSIC Additions. He stated that Petitioner started with Improvements of \$70,165,650 which he reduced by the amount of related plant retirements (shown on Pet. Ex. 1, Att. GMV-2, Schedule 1, Line 1), consistent with the DSIC 8 Order. The actual amount of the cost of removal, net of salvage, of \$7,648,906 was then added. Mr. VerDouw stated that there were total reimbursements from the Indiana Department of Transportation (“INDOT”) and others in the amount of \$179,611. These reimbursements were removed from the Improvements, resulting in Net Investor Supplied DSIC Additions of \$71,859,523, as shown on Pet. Ex. 1, Att. GMV-2, Schedule 1, Line 5).

Mr. VerDouw also explained that the rate of return used in this proceeding is Petitioner’s weighted average cost of capital computed from Petitioner’s capital structure as of November 2014. He testified that Petitioner used the average embedded debt cost rate as of November 2014 to determine the long-term debt cost rate. The common equity cost rate of 9.75% is the rate approved by the Commission in the 2015 Rate Order. The weighted cost of capital of 6.60% and pre-tax rate of return of 8.13% were derived as shown on Pet. Ex. 1, Att. GMV-2, Schedule 4. Mr. VerDouw stated the pre-tax rate of return was calculated using a gross revenue conversion factor of 137.7717%, calculated using those taxes and fees that will be in effect during the time the DSIC Revenues are billed. The IURC Fee used is the fee billed by the Commission as of July 1, 2017, of 0.1338381%, consistent with the direction provided by the Commission in the DSIC 10 Order. The State Income Tax reflects three months of an Indiana State Income Tax rate of 6.0% and nine months at a rate of 5.75% for a blended State Income Tax rate of 5.8125%. The gross-up calculation also reflects the new Federal Income Tax rate of 21%, which was part of the Tax Cuts and Jobs Act of 2017. Mr. VerDouw stated that the gross revenue conversion factor was multiplied by the weighted cost of non-debt components of the capital structure to determine the pre-tax return of 8.13%.

Mr. VerDouw stated that Petitioner determined its depreciation expense of \$1,562,455 by using the annual depreciation rates by primary plant account previously approved by the Commission, multiplied by the Improvements, net of related retirements.

Mr. VerDouw explained how the annual revenue requirement of \$7,404,634 for DSIC 11 was calculated. He then restated the revenue requirements previously approved in the DSIC 9 Order and the DSIC 10 Order (which were adopted prior to the reduction in the federal income tax rate) to also reflect the Tax Cuts and Jobs Act so that the entire DSIC revenue requirement (DSIC 9, 10, and 11) reflect the lower corporate federal income tax rate. He testified and provided schedules showing that proposed DSIC Revenues of \$17,626,142, resulting from combining DSIC 9 reconciliation, DSIC 9, DSIC 10, and DSIC 11 totals, do not exceed 10% of Petitioner’s base revenue level.

B. Description of DSIC Improvements. Petitioner's witness Stacy S. Hoffman sponsored Pet. Ex. 2, Att. SSH-1, which provides a summary of costs for non-blanket and blanket project categories, and Pet. Ex. 2, Att. SSH-2 and Pet. Ex. 2, Att. SSH-3, which provide the list of projects included in this DSIC. Pet. Ex. 2, Att. SSH-2 lists non-blanket projects individually by project number with project description, the date placed in service, the project purpose, the resulting benefits, the applicability of easements, the range of age of plant retired, pipe diameters, pipe length, and the total costs incurred. Pet. Ex. 2, Att. SSH-3 lists statewide blanket projects by project number with project description, the project purpose, the resulting benefits, the range of age of plant retired, and the total costs incurred. Pet. Ex. 2, Att. SSH-3 also lists quantities of blanket project assets replaced. Pet. Ex. 2, Att. SSH-4 lists all projects with additional cost detail by utility account. Pet. Ex. 2, Att. SSH-5 lists all projects with retirement cost detail by utility account. Pet. Ex. 2, Att. SSH-6 lists all projects with cost of removal and salvage detail by utility account. Mr. Hoffman stated that Petitioner has invoices and other cost support for all projects listed in Pet. Ex. 2, Att. SSH-2 and Pet. Ex. 2, Att. SSH-3.

Mr. Hoffman generally described the types of projects included in Pet. Ex. 2, Att. SSH-2 and Pet. Ex. 2, Att. SSH-3. He stated that all of the Improvements included in this Cause are replacement infrastructure, reinforcement projects, and distribution system retirements. He explained that replacement infrastructure includes water mains, tanks, tank coating systems, valves, hydrants, service lines, and meters. He explained that a portion of the replacement infrastructure is associated with right-of-way improvements projects wherein the location of Indiana-American infrastructure directly conflicted with other public infrastructure improvement projects like road and sewer projects. Other projects included replacement of obsolete water mains, tanks, tank coating systems, hydrants, valves, meters, and service lines that are in poor condition or hydraulically deficient for providing adequate service including public fire protection. He further explained that reinforcement infrastructure consists of mains, valves, and hydrants with the purpose of improving pressure, fire flow, and service reliability of the existing distribution system. He testified that all of the retirements associated with the new infrastructure were recorded on Indiana-American's books and records as of the date of Petitioner's filing. He also testified that no costs of removals were estimated. Mr. Hoffman explained that all of the projects listed individually in Pet. Ex. 2, Att. SSH-2 and Pet. Ex. 2, Att. SSH-3 represented eligible DSIC projects, including the blanket categories. He explained the presentation of the blanket projects, noting that blanket categories are used for common, similar activities like replacement meters, service lines, hydrants, and unscheduled main replacements.

Mr. Hoffman also testified about Indiana-American's comprehensive capital improvement planning studies for each of Indiana-American's operations. He explained that the studies include a thorough evaluation of demand projections, regulatory requirements, asset service reliability and quality, replacement of poor condition infrastructure, asset impacts on safety and efficiency, public fire protection, and environmental sustainability. He testified that Indiana-American performs an evaluation used for long-term distribution system asset investment planning modeled on a multi-decade forward projection of pipeline asset replacement needs based on distribution pipe materials and the decades of installation of the pipe materials. Another evaluation is used for near-term distribution system asset investment planning, which is a detailed modeling of the distribution systems that identifies service risks associated with pipeline failure risks for all pipes in Indiana-American's distribution system. Mr. Hoffman described the key inputs to Indiana-American's five-year capital investment plan as including a multi-decade forward projection of pipeline asset

replacement needs, prioritization modeling of Indiana-American's 4,850 miles of distribution pipe, customer rates, and service reliability and impacts. The multi-decade forward projection of pipeline asset replacement needs utilizes the American Water Works Association ("AWWA") software analytics tool, "Buried No Longer Pipe Replacement Modeling Tool." Mr. Hoffman stated this modeling projects that pipe replacement needs range from a current projected need of a near 1% annual replacement rate to an annual rate of near 1.5% by the decade of 2030. He testified that the significant gap between the current projected annual pipeline replacement rate need of near 1% and Indiana-American's current actual nine-year annual average pipe replacement rate of only 0.33% without including relocations, and 0.48% including relocations translates to a need to increase Indiana-American's annual pipe replacements. He explained that this gap translates to an unrealistic pipe life expectancy of over 200 years, as compared to a more realistic pipe life expectancy of 50 to 100 years. He stated that many pipes in Indiana-American's system that were installed from 50 years ago to over 100 years ago are at or nearing the end of their expected useful life. He indicated Indiana-American is planning to increase its replacement rate in the coming years.

Mr. Hoffman went on to describe the "tidal wave" effect on the future cost to customers caused by deferral of pipe replacements year by year. He explained that to the extent pipe replacement needs are deferred further into the future, service quality will suffer from increasing numbers of pipe breaks, service disruptions, health risks from potential drinking water contamination exposure during pipe breaks, property damages, and related community opportunity costs related to community health and economic development. He referred to recent AWWA and Water Research Foundation reports highlighting the challenge of aging infrastructure for utilities, customers, and regulators, as well as a report prepared by the Economic Development Research Group, Inc. for the American Society of Civil Engineers that calculated estimates of economic impacts of failing to invest in water infrastructure across the country. Both Mr. Hoffman and Mr. VerDouw referenced the 2016 report published by the Indiana Finance Authority which estimated current utility infrastructure needs to be \$2.3 billion with an additional projected \$815 million annual spend to maintain the utilities into the future. Mr. Hoffman discussed the various challenges to closing the current gap in main replacement rates including the challenge of effectively educating all stakeholders about: (1) buried pipe infrastructure and its function in providing reliable water service; (2) the cost of replacing poor condition pipes and the link to the cost of providing water service; and (3) the consequences of delaying replacement of poor condition pipes. He also noted the challenge of attracting reasonable cost of capital.

Mr. Hoffman testified about Indiana-American's prioritization model for identifying pipeline replacement investment needs. He stated that in July 2015, Indiana-American met with Commission staff, representatives of the OUCC, Crown Point, and the Town of Schererville to review details of Indiana-American's pipeline prioritization model and process. He testified about the long-term benefits that can result from using these models to develop a more systematic approach to replacing poor condition pipes. He stated prioritization models are excellent tools for a prudent asset management approach.

Mr. Hoffman testified regarding what types of projects are eligible for inclusion in Petitioner's DSIC filings. Mr. Hoffman explained that Petitioner has been involved in 11 DSIC filings and, over the years, the Commission's Orders have clarified and provided guidance on the types of projects it considers to satisfy the DSIC statute's requirements.

Mr. Hoffman described three categories of meter replacements included in this DSIC 11: (1) meters replaced as part of Indiana-American's length of service ("LOS") plan; (2) meters replaced under Indiana-American's accelerated automated meter reading ("AAMR") plan that were or would have been ten years old or older as of November 30, 2017; and (3) meters replaced or moved while moving the meter location from inside the customer building to a meter pit outside the customer building, otherwise referred to as "meter move-outs." He stated that meter move-outs also include replacement of failed curb stops with new meter pit installations where the meter location was previously inside the customer building. He described the LOS plan, which consists of replacing meters at the LOS age approved by the Commission in Petitioner's 30-Day Filing No. 2610 approved on January 20, 2010, and of replacing broken meters regardless of age. He then described the AAMR category of meters, citing the Commission's Order dated December 27, 2012, in Cause No. 42351 DSIC 7 (the "DSIC 7 Order") as support for inclusion of meters that were or would have been ten years old or older as of November 30, 2017. He stated additions and cost of removals for the AAMR meters ten years old and older were calculated from the actual material and installation costs for these meters. He stated retirement values for the ten years old and older meters were calculated at gross original cost and computed using the Handy-Whitman index to trend back current day costs to original costs because Indiana-American's financial system for these mass assets does not show original cost for this specific subset of ten years old and older meters.

Mr. Hoffman also testified about the inclusion of tank-related projects in Petitioner's proposed DSIC, referring to the DSIC 7 Order in which the Commission authorized DSIC recovery on tank-related projects consisting of foundation rehabilitations, a paint rehabilitation, a tank roof replacement, and some distribution pump work to enable Indiana-American to take the tanks offline. He testified that the tank-related projects included in this DSIC 11 are similar to those included in DSIC 7 insofar as they consist of capital rehabilitation work on existing tanks and not construction of new tanks. He described the tank-related projects in this DSIC 11 as consisting of replacement of tank coating systems, structural steel, and tank appurtenances. He noted the projects are recorded in the National Association of Regulatory Utility Commissioners ("NARUC") Uniform System of Accounts distribution accounts, do not increase water storage capacity, and otherwise meet the statutory criteria to qualify as eligible distribution system improvements.

Mr. Hoffman testified that all Improvements listed in Pet. Ex. 2, Att. SSH-2 and Pet. Ex. 2, Att. SSH-3 meet the DSIC statutory requirements. He testified that none of the projects increase revenues by connecting the distribution system to new customers, all of the projects are in service, none of the projects were previously included in rate base, all necessary local, state and federal permits, approvals, and authorizations have been obtained, and there was no affiliate involvement in any of the transactions. Mr. Hoffman explained that as Director of Engineering he has familiarity with these projects through regular communication with Indiana-American Engineering staff during the planning, design, and construction phases of these projects. Indiana-American project managers also confirm projects are in service through a physical inspection and then enter in-service dates for completed projects in Indiana-American's accounting software system. He testified that he verified that none of the project costs identified in this Cause were included in rate base in any prior Causes. Mr. Hoffman also explained that some of the project costs included in this DSIC 11 are for projects that were placed in service prior to December 1, 2016, but were not

included in DSIC 10 and were not previously included in rate base in any prior case because the costs were incurred subsequent to the most recent rate base cutoff or because Indiana-American had not completed all accounting for these costs by the most recent rate base cutoff.

Mr. Hoffman testified regarding the funding of the Improvements. He stated that projects included in this DSIC 11 were funded by Petitioner or were reimbursed by INDOT or others, as noted by Mr. VerDouw.

Mr. Hoffman stated Petitioner has a five-year Strategic Capital Expenditure Plan that provides for budgeted amounts of approximately \$355,000,000 for replacement mains, reinforcement mains, DSIC tank related work, hydrants, services, and meters for the period 2018-2022. He testified that included in this amount is approximately \$32,500,000 budgeted over the same period for water main replacements required by state and local governments as a result of road improvements and other projects.

5. **OUC's Case-in-Chief.** The OUC presented testimony of Richard J. Corey and James T. Parks. Mr. Parks described his review of Petitioner's application for DSIC 11 and recommended that the Commission only allow Petitioner to include \$1,578,137.57 of the \$2,031,492.57 Petitioner seeks to include for the project shown in Pet. Ex. 2, Att. SSH-2 as I10-650007-01 SHL McKay Rd EST Rehab Shelbyville Tank Painting/Rehab (the "McKay Project"). The McKay Project included, among other improvements, interior and exterior sandblasting to remove the old tank coating followed by recoating with a primer, an intermediate coat, and a final coat.

Mr. Parks testified that total cost of the McKay Project is comparable to the cost for a new 1.0 MG elevated storage tank. Mr. Parks noted that the painting and rehabilitation cost Petitioner incurred for the McKay Project exceeded the estimate prepared by Petitioner's engineering firm, Tank Industry Consultants ("TIC"), of \$1,253,000 ("the engineer's estimate") for the total base cost, which included additional work allowances, and \$1,318,000 for project cost with two selected alternatives.

Mr. Parks testified that Petitioner did not competitively bid the McKay Project. Rather, he testified that Petitioner received bids from preselected painting contractors and did not openly advertise the project to allow other tank painting contractors to bid. Mr. Parks testified that in his experience, high painting prices may have occurred because Petitioner limited bidders to only preselected contractors in a rushed process that was started late in the year when many painting contractors already have contracts for other tank jobs. He further testified that the preselected contractors only had 20 days to prepare their bids, and potential bidders attending the pre-bid meeting would have known that few other potential bidders attended.

Mr. Parks testified that because the painting prices were higher than the engineer's estimated cost, Petitioner should have: (1) evaluated with its engineer the reasons for the high bids and why so few bidders participated; (2) rejected the bids because they were much higher than the engineer's estimate; and (3) rebid the project later in 2017 with the goal of attracting more bidders and more favorable pricing.

Mr. Parks testified that he believed Petitioner could have obtained a bid price more in line with the engineer's estimate. Therefore, Mr. Parks recommended that the Commission exclude \$453,355 from the calculation of DSIC 11 for the McKay Project.

Mr. Corey also testified regarding the McKay Project. Mr. Corey explained that the difference between his calculation of the DSIC and Petitioner's calculation is due to his exclusion of the \$453,355 of DSIC 11 additions relating to the McKay Project as discussed in Mr. Parks' testimony. Mr. Corey ultimately recommended that the Commission exclude \$453,355 from the calculation of the DSIC for the reasons explained in Mr. Parks' testimony and that the Commission approve a monthly DSIC rate per equivalent 5/8" meter of \$3.90.

6. Petitioner's Rebuttal. Petitioner presented rebuttal testimony of Stacy S. Hoffman to respond to statements in the direct testimony of Mr. Parks. Mr. Hoffman testified that the McKay Project was not delayed and the bidding process was not rushed as suggested by Mr. Parks. Mr. Hoffman testified that Mr. Parks cited a number of things that led him to conclude that the project was delayed and rushed including communications between Petitioner and Shelbyville, the time of the year the project was started, the length of the bidding process, and the bid amounts that were actually received, all of which Mr. Hoffman rebutted.

Mr. Hoffman testified that Mr. Parks provided no factual or engineering basis for his assertions that the successful bid price was high. Mr. Hoffman rebutted the various assumptions and inferences upon which Mr. Parks based his assertions that the bid price was too high because: (1) the project was started late in the year, and contractors already had contracts for other tank projects; (2) the project bidding was rushed; (3) Petitioner prequalifies contractors; (4) there were not more than three bidders; and (5) the bid was higher than the engineer's estimate.

A. The Project Started Late in the Year. Mr. Hoffman rebutted Mr. Parks' conclusion that the time of year in which Petitioner started the project was an indication the bidding process was rushed. Mr. Hoffman reiterated that the process was not rushed, and Mr. Parks' assertion that it was started late in the year is simply wrong. Mr. Hoffman explained that it is common for many communities and utilities to perform tank rehabilitation work either in the spring or in the fall because tanks provide important storage for peak hourly flows during the day. He stated that, depending on the type and magnitude of the tank rehabilitation work, it is often feasible that tank contractors perform desired work in the spring or fall, barring an unusual number of rain days, high humidity days, or low temperature days that would prevent blast and paintwork. He indicated that Indiana-American usually prefers to start work towards the end of summer and complete work through the fall season because days of precipitation and high humidity occur less often during that time as compared with the spring.

Mr. Hoffman testified that it is common for communities and utilities to strive for a construction schedule that avoids extending work through multiple seasons. He stated that the goal is not to suspend fall tank work through the winter resulting in needing to recommence work again in the spring. Mr. Hoffman explained that utilities do this to avoid the tank being out of service for an extended period of time, which would result in the community lacking a critical component of community fire protection. He also reiterated that the project started earlier in the year compared with other, more typical tank work schedules that are started in the fall. He stated that Mr. Parks

provided no evidence for his assertion that tank contractors already had contracts for other tank projects.

Mr. Hoffman testified that the McKay Project and bidding process was not started late in the year as Mr. Parks asserted in his testimony, but rather the project actually started earlier in the year and was performed on a longer project schedule as compared with a typical fall season tank rehabilitation project for the Petitioner. Mr. Hoffman testified that a number of factors contributed to Petitioner planning for a longer project schedule including the fact that the McKay Road Tank is a relatively large elevated tank at one million gallons volume, the tank had a legacy lead-based paint system, and the tank is situated in the midst of a developed community. Mr. Hoffman testified that these factors encouraged Petitioner to plan for a longer work duration than the typical fall season work, which is why Petitioner bid the work and awarded the project in the spring so that mobilization and construction could start by early summer versus late summer (when most fall tank rehabilitation projects start). Mr. Hoffman testified that Petitioner started the project in early summer, specifically June 1, thereby providing a longer work window through the end of fall, which is typically November. Mr. Hoffman testified that despite Mr. Parks' assertions, the project was actually started earlier in the year and was scheduled for a longer timeline than the majority of Petitioner's rehabilitation projects.

B. The Project Bidding Was Rushed. Mr. Hoffman testified that the communications between Petitioner and Shelbyville to which Mr. Parks cited do not indicate the McKay Project was delayed or that the bidding process was rushed. Mr. Hoffman testified that he presumed Mr. Parks' used the phrase "may have been rushed" because he acknowledged these communications do not demonstrate anything about a project delay or about "rushing" the process. Mr. Hoffman testified that Mr. Parks interpreted these communications through the lens of a delay and rushing theme, despite these being normal communications that take place in managing a construction schedule for a project. Mr. Hoffman testified that these communications indicate that Petitioner developed a specific project schedule for the McKay Project work in 2017. Mr. Hoffman also explained these communications indicate that Petitioner's team member assisting with the management of the schedule was attempting to ensure the work was performed on schedule. Mr. Hoffman testified that Mr. Parks' suggestion that these communications are anything otherwise is reading something into these communications that is simply not there and adding a meaning to the communication that only Mr. Parks chose to add.

Mr. Hoffman testified that he does not agree with Mr. Parks' assertion that the bidding process for the McKay Project was cut short due to delay in the project, and he testified that it was not shorter than other bid processes for this type of work. Mr. Hoffman testified that the contractors were given nearly three weeks to bid the project, which is typical bid time for this type of work. He stated that bidders who participated in this bid process were very familiar with the scope of work and what the project entailed. Mr. Hoffman testified that the contractors had more than enough time to prepare bids, and the process was not rushed. He also testified that none of the invited bidders requested more time to bid on the project.

Mr. Hoffman testified that Petitioner planned and scheduled time for a pre-bid meeting at the project site to allow contractors to inspect the site and learn more details about the work involved. Mr. Hoffman testified that the pre-bid meeting was probably not necessary because based on his considerable direct experience with tank rehabilitation projects and knowledge of the

process, it is rare that a contractor wants to visit the tank site and inspect it before bidding due to the tank rehabilitation contractors' vast experience with this type of work. Mr. Hoffman testified that contractors go online to view an aerial view of the site to observe properties around the site and to plan equipment and materials staging for bidding. Mr. Hoffman testified that given his experience, he knew a pre-bid meeting likely was not necessary, but Petitioner still planned and scheduled time in this project to require a mandatory pre-bid meeting on the project site.

Mr. Hoffman reiterated his testimony that Mr. Parks' assertion that the project bidding process was rushed is false. He also reiterated that the project started earlier in the year compared with other, more typical tank work schedules that are started in the fall. He stated that Mr. Parks provided no evidence for his assertion that tank contractors already had contracts for other tank projects.

C. Petitioner's Prequalifying of Bidders. Mr. Hoffman testified that Mr. Parks presented no factual basis for his assertion that Petitioner prequalifying bidders led to a higher bid price. Mr. Hoffman stated that it is common for a competitive bid process like this one to solicit bids from many contractors and receive three bids. He testified that prequalified contractors have demonstrated safe working practices, quality work, and performance of schedule. Mr. Hoffman testified that safety is extremely important on all types of projects, but this is especially true for projects where work is being performed on 160-foot tall tanks. Mr. Hoffman testified that a contractor's ability to perform quality work is also important. Poor quality work can result in even higher asset life cycle costs because shoddy work quality can lead to shorter life assets, opportunity costs of rework, and potential litigation costs associated with poor quality work. Mr. Hoffman also testified that a contractor's proven performance of schedule is also very important so that tanks and other assets can be returned to service on schedule and recommence providing their intended service to the community including public fire protection.

Mr. Hoffman testified that that while opening the bidding process to all potential bidders as Mr. Parks suggests could potentially produce a greater number of bids, it would not produce a greater number of quality bids. Mr. Hoffman testified that Petitioner is not interested in spending its time or resources evaluating low quality bids that ultimately produce low quality work. Mr. Hoffman testified that Petitioner invited 11 contractors to bid on the McKay Project and that Petitioner reviewed the three bids received and determined that they were market price for the bid work and commensurate with the specific scope of work for this particular tank at this particular site. Mr. Hoffman testified that Petitioner's bid process was in line with standard industry practice and that Mr. Parks has presented no evidence to prove the successful bid was somehow high.

D. There Were Not More than Three Bids. In response to Mr. Parks' assumption that the successful bid must be high because only three bidders submitted bids in the process, Mr. Hoffman explained that in his experience, it is not at all uncommon to receive three bids in a competitive bidding process. He further testified that, in fact, Petitioner received the same number of bids for similar work on the Norplex tank project, which is contained in this DSIC and the costs for which Mr. Parks has apparently accepted. Mr. Hoffman testified that it does not matter that one of the bids received was technically not responsive because the contractor could not complete the work in 2017. Mr. Hoffman testified that this does not change the analysis because the bidder who stated they could not do the work in 2017, submitted their bid for 2018, and their price for completing the work in 2018 was actually higher than the successful bid for completing

the work in 2017. Mr. Hoffman testified that because Petitioner already received two responsive bids, and because the third bid for 2018 was higher than those received for 2017, it chose not to consider rebidding the work for 2018.

E. The Successful Bid Was Higher than the Engineer's Estimate. Mr. Hoffman testified that the fact that the successful bid was higher than the engineer's estimate is in no way proof that the successful bid is higher than the actual market price. He stated that an engineer's estimate is exactly that - an estimate - and it is an estimate by someone who is not a tank rehabilitation contractor. Mr. Hoffman testified that soliciting and receiving bids for work for which bidders are prepared to sign a contract and deliver on is the precise practice typically used to determine market prices. He stated that Mr. Parks' assertion that the cost estimate provided by TIC was reasonable simply because TIC is a nationally recognized water tank consultant does not make their estimate any better than the actual market price derived from competitive bidding amongst actual tank rehabilitation contractors. Mr. Hoffman further explained that Petitioner did not engage TIC to establish market price for the McKay Project, but it contracted with TIC on the McKay Project for their inspection services expertise. Mr. Hoffman pointed out that the market prices for the McKay Project and the Norplex rehabilitation (which project Mr. Parks accepted for inclusion in this DSIC) were virtually identical on a cost per gallon basis with the cost per gallon for each tank being within 2% of each other.

Mr. Hoffman responded to Mr. Parks' testimony that Petitioner plans to build a new tank in Shelbyville at some point in the future. Mr. Hoffman explained that there is no relation between the planned ground tank and pump station recommended in Petitioner's 2007 Demand and Distribution Study and the McKay Road Tank. He testified that despite Petitioner having provided Mr. Parks with the Study, Mr. Parks inferred a relationship between the two tanks, as if the planned new tank could be built and the McKay Road Tank could be retired. Mr. Hoffman testified that this is completely opposite of what Petitioner stated in reply to the OUCC data requests. Mr. Hoffman also rebutted Mr. Parks' estimate of the cost to build the new tank. He noted that Mr. Parks' budgetary estimates do not include land, site work, and engineering costs, yet these excluded parts of a tank project can be significant costs. Mr. Hoffman testified that Mr. Parks also does not account for other necessary costs like inspection, electrical work, and SCADA work, and Mr. Parks neglected to mention pipelines costs, which can be very significant. Mr. Hoffman provided evidence of project costs for eight prior Indiana-American new elevated tank projects that were significantly higher than the tank-only-budgetary estimates Mr. Parks presented.

Mr. Hoffman testified that Petitioner delivered the McKay Project responsibly and prudently, and Petitioner received market price for the work from the successful bidder. Mr. Hoffman testified that Mr. Parks' recommendation should be rejected, and Petitioner should be allowed to include the full cost of the work for rehabilitation of the Shelbyville McKay Road Tank in this DSIC.

7. Commission Discussion and Findings.

A. DSIC Requirements and Calculation. Ind. Code ch. 8-1-31 requires the Commission to approve a DSIC in order to allow a water utility to adjust its basic rates and charges to recover a pre-tax return and depreciation expense on eligible infrastructure improvements. Ind.

Code § 8-1-31-5 defines eligible infrastructure improvements for water distribution infrastructure of a public utility as new used and useful water utility plant projects that:

- (a) do not increase revenues by connecting the distribution system to new customers;
- (b) are in service; and
- (c) were not included in the public utility's rate base in its most recent general rate case.

Under Ind. Code § 8-1-31-6, the rate of return allowed on eligible distribution system improvements is equal to the public utility's weighted cost of capital. Unless the Commission finds that such determination is no longer representative of current conditions, Ind. Code § 8-1-31-12 provides that the cost of common equity to be used in determining the weighted cost of capital shall be the most recent determination by the Commission in a general rate proceeding of the public utility.

Furthermore, in 2017, the Indiana Legislature passed House Enrolled Act 1519, which changed how the DSIC surcharge is to be calculated. In the past, the surcharge was to be calculated as a percentage that was applied to both the consumer's volumetric and metered service charge revenues for all rate groups. Now, Ind. Code § 8-1-31-8, as amended by P.L. 91-2017 (effective July 1, 2017), states as follows:

Sec. 8. (a) Except as provided in subsection (d), an eligible utility may file with the commission a petition setting forth rate schedules establishing an amount that will allow the adjustment of the eligible utility's basic rates and charges to provide for recovery of infrastructure improvement costs. **The adjustment shall be calculated as a monthly fixed charge based upon meter size.** (Emphasis added.)

As a result, Petitioner is now required to calculate the surcharge applicable to the total DSIC revenue requirement as a fixed charge based upon a meter equivalency size.

B. Approval of Proposed DSIC.

i. McKay Road Tank. The only issue in dispute is how much of the McKay Project's costs should be included in this DSIC. Mr. Parks includes considerable testimony and attachments which largely consist of questions about what "may" have occurred during the pre-bid and bid selection processes. He speculates, for instance, that "higher painting prices may have arisen," and that the "project bidding may have been rushed." Pub. Ex. 2, p. 11. However, Mr. Parks' voluminous exhibit is devoid of any evidence that the project was rushed, that higher painting prices resulted from any flaw in the process, or, most importantly, that the price as competitively bid for this project was unreasonably high. Speculation about what "may" be is not evidence.¹ Mr. Hoffman fully answered all of the questions Mr. Parks raised. We find it particularly compelling that the price per gallon for the McKay Road Tank is nearly identical to the price per gallon for the Norplex tank, which Mr. Parks did not dispute, for purposes of this

¹ "An expert's opinion that something is 'possible' or 'could have been' is insufficient to support a material factual question." *Cohen v. Pride Vending Serv.*, 659 N.E.2d 1159, 1163 (Ind. Ct. App. 1995), *trans. denied*.

proceeding. Accordingly, we find that the entire cost of the McKay Road Tank refurbishment is an eligible distribution system improvement.

ii. Projects and Amounts to Be Included as Distribution System Improvement Charges. Because we have found the entire cost of the McKay Project is an eligible infrastructure improvement, we find the total cost for the additional net investor supplied DSIC Additions is \$71,859,523. We find the pre-tax return associated with those additions, as calculated in accordance with Ind. Code ch. 8-1-31, is \$5,842,179. The revenue requirement for depreciation on the Improvements is \$1,562,455, for a total DSIC 11 revenue requirement of \$7,404,634. The total revenue requirement associated with the DSIC 9 (including reconciliation), 10, and 11 Improvements, after reflecting the Tax Cuts and Jobs Act, is \$17,626,142, which is below 10%, of the revenues authorized in Petitioner's last rate case, which therefore is not subject to reduction under Ind. Code § 8-1-31-13.

Furthermore, the evidence shows that all of the projects reflected in the proposed DSIC are in service, do not result in the addition of new customers to Petitioner's system, and fall into the NARUC Uniform System of Accounts for Water Utilities Accounts 304, 311, 320, 330, 331, 333, 334, or 335. As such, they are eligible for inclusion in a DSIC.

The evidence further shows that Petitioner calculated the DSIC surcharge in this proceeding as a monthly fixed charge based upon meter size, as required by amended Ind. Code § 8-1-31-8. Specifically, Petitioner proposes a new DSIC 11 monthly surcharge of \$3.91 per equivalent 5/8" meter.

Based on the evidence presented, the Commission finds that Petitioner's request for a DSIC complies with the requirements of Ind. Code ch. 8-1-31 and 170 IAC 6-1.1. Further, Petitioner's proposed DSIC is non-discriminatory, reasonable, and just. We find that Petitioner is therefore authorized to collect from each of its present and future water customers a monthly DSIC of \$3.91 per equivalent 5/8" meter as set forth in Pet. Ex. 1, Att. GMV-1.

C. Reconciliation of Petitioner's DSIC. Petitioner should be prepared to reconcile the DSIC approved by this Order in the manner prescribed by Ind. Code § 8-1-31-14 and 170 IAC 6-1.1-8. Under Ind. Code § 8-1-31-14, at the end of each 12-month period a DSIC is in effect the difference between the revenues produced by the DSIC and the expenses and the pre-tax reflected in it should be reconciled and the difference refunded or recovered as the case may be through adjustment of the DSIC.

IT IS THEREFORE ORDERED BY THE INDIANA UTILITY REGULATORY COMMISSION that:

1. A Distribution System Improvement Charge, calculated as a monthly fixed charge of \$3.91 per equivalent 5/8" meter and designed to generate total annual DSIC revenues of \$17,626,142, is approved for Petitioner Indiana-American Water Company, Inc.

2. Prior to placing into effect the above-authorized DSIC, Petitioner shall file with the Water/Wastewater Division of the Commission, under this Cause, Petitioner's Exhibit 1, Attachment GMV-1 as an appendix to its schedule of rates and charges for water service.

3. The above-authorized DSIC shall be subject to reconciliation as described in Finding No. 7(C) above.

4. This Order shall be effective on and after the date of its approval.

HUSTON, FREEMAN, WEBER, AND ZIEGNER CONCUR:

APPROVED: MAR 14 2018

**I hereby certify that the above is a true
and correct copy of the Order as approved.**



Mary M. Becerra
Secretary of the Commission

STATE OF IOWA
DEPARTMENT OF COMMERCE
UTILITIES BOARD

IN RE: IOWA-AMERICAN WATER COMPANY	DOCKET NO. TF-2017-0029, TF-2018-0007
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ORDER APPROVING TARIFFS

(Issued May 15, 2018)

On January 24, 2018, Iowa-American Water Company (Iowa-American) filed with the Utilities Board (Board) a proposed revision to its tariff involving its Qualified Infrastructure Plant Surcharge Mechanism (QIP). Iowa-American filed the proposed revision in Docket No. TF-2017-0029. The Board previously approved Iowa-American's compliance tariff implementing the QIP on December 27, 2017. Iowa-American's proposed revisions would alter the monetary threshold by removing a category of expenses that it believes should qualify as government mandated projects and adding the cost of removal of existing infrastructure as part of the overall infrastructure project costs.

On January 30, 2018, Iowa-American filed a proposed tariff and supporting documentation for its QIP recovery factors, which are the amounts that it proposes to charge each customer per month. Iowa-American filed proposed recovery factors for both the currently effective tariff and the revised tariff should the Board approve the tariff revision in Docket No. TF-2017-0029. The QIP recovery factor filings have been identified as Docket No. TF-2018-0007.

DOCKET NO. TF-2017-0029, TF-2018-0007
PAGE 2

On February 12, 2018, the Office of Consumer Advocate (OCA), a division of the Iowa Department of Justice, filed a conditional objection in both dockets. The Board docketed and suspended the tariffs in its February 21, 2018, order. On March 12, 2018, OCA filed an objection in Docket No. TF-2018-0007 while noting it did not object to the proposed revisions in Docket No. TF-2017-0029.

BOARD ANALYSIS

A. Threshold Amount

In Docket No. TF-2017-0029, Iowa-American proposed changes that would, in the aggregate, increase the threshold for recovery through the QIP from \$4 million to \$4.2 million. Iowa-American states that a category of infrastructure projects that are all government-mandated were included as part of the general categories. Iowa-American proposes to remove that category from the categories subject to the threshold and instead include them with the other government-mandated projects. Additionally, Iowa-American states that the cost of removal of existing infrastructure should be included, since it is a necessary component of installing new infrastructure in its place. Iowa-American also states that its depreciation rates include a cost of removal component, so cost of removal should be included to ensure accurate depreciation rates. OCA states it does not object to this revision, though it does not necessarily agree with Iowa-American's reasons for making the change.

DOCKET NO. TF-2017-0029, TF-2018-0007
PAGE 3

The Board finds that the revisions to the QIP threshold amount proposed by Iowa-American are just and reasonable. The Board will therefore approve the proposed revised tariff identified as Docket No. TF-2017-0029.

B. Proration of Recovery

Iowa-American has proposed pro-rating the threshold amount for this first period of recovery since the initial period began in March 2017 following the filing of the final order in Docket No. RPU-2016-0002. Iowa-American states that proration is appropriate because the initial recovery period is only 10 months rather than a full calendar year and the threshold should similarly be adjusted. Iowa-American notes that proration only applies to this first filing; future filings will cover an entire calendar year and therefore the threshold would not need to be adjusted.

OCA objects to the proration of the \$4.2 million threshold for this first period of recovery. OCA argues that the approved tariff does not allow for proration and states that proration would include January and February spending that the tariff explicitly excludes. OCA also argues that January and February are below-average spending months for Iowa-American and prorating the threshold would overcompensate Iowa-American as a result.

Iowa-American is only including 10 months' worth of infrastructure spending in its filings, as required by the approved tariff. While the tariff states that Net Plant is "the actual historical cost of eligible investment in excess of [\$4,200,000] annually," the first recovery period, as explicitly defined in the tariff, is not a full calendar year.

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PAGE 4

The tariff clearly contemplates some amount of projects over the remainder of the year following a rate case will be eligible for recovery through the QIP. Since that period will always be less than a full calendar year, the Board finds it just and reasonable to prorate the threshold amount for the initial QIP period. While the Board recognizes OCA's concerns that January and February do not represent average months, the Board does not believe additional adjustments are necessary.

C. Depreciation

Iowa-American has proposed recovering its actual depreciation over the 12-month period from April 2018 through March 2019. It states this will align its recovery with the depreciation expenses recorded for the QIP-eligible plant during the recovery period. OCA objects to this calculation, stating that the tariff requires Iowa-American to recover the depreciation that was incurred from March through December of 2017.

Both parties agree the tariff requires Iowa-American to recover actual depreciation expenses. The tariff allows recovery of, "Depreciation Expense for eligible QIP investments, net of third-party reimbursements, for the QIP Period." The parties disagree on which actual depreciation expenses should be recovered. OCA argues that the tariff allows recovery of the depreciation expenses incurred during the QIP period, which in this case would be March through December of 2017. Iowa-American states the tariff allows it to recover current depreciation expenses incurred during the recovery of investments made in the QIP period, which would be from April 2018 through March of 2019.

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PAGE 5

The Board finds Iowa-American's interpretation is just and reasonable. Its interpretation will allow it to match revenues with the recorded expenses during the recovery period subject to a true-up at the end of the recovery period. Iowa-American will be recovering the actual depreciation that will be recorded for QIP-eligible projects placed into service during the QIP Period.

D. Tax Gross-Up

Finally, OCA objects to the computation of Iowa-American's tax gross-up factor contained in the QIP. Specifically, OCA argues that Iowa-American is still using the old 35% corporate tax rate to compute the factor rather than the 21% rate in effect following the passage of the Tax Cuts and Jobs Act of 2017.

The Board has previously determined that all issues related to the reduction in federal tax rates following passage of the Tax Cuts and Jobs Act of 2017 should be addressed in Docket No. INU-2018-0001. Thus any reductions in the QIP related to the change in federal tax law will be made as part of Iowa-American's filings and the Board's decisions in that docket and any tariffs related to that docket. The Board will not require Iowa-American to do so as part of these tariff filings.

E. Conclusion

The Board finds that the revised tariff filed by Iowa-American on January 24, 2018, in Docket No. TF-2017-0029, is just and reasonable. Therefore, the Board will approve that revised tariff as filed, effective as of the date of this order.

DOCKET NO. TF-2017-0029, TF-2018-0007
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The Board also finds that the proposed recovery factors that incorporate the revised threshold amount are just and reasonable. The Board will therefore approve the tariff filed by Iowa-American on January 30, 2018, in Docket No. TF-2018-0007 effective as of the date of this order.

ORDERING CLAUSES

IT IS THEREFORE ORDERED:

1. The proposed revised tariff filed by Iowa-American Water Company on January 24, 2018, and identified as Docket No. TF-2017-0029 is approved effective as of the date of this order.

2. The Qualified Infrastructure Plant recovery factors based upon the revised threshold amount and identified as Docket No. TF-2018-0007 are approved effective as of the date of this order.

UTILITIES BOARD

/s/ Geri D. Huser

/s/ Nick Wagner

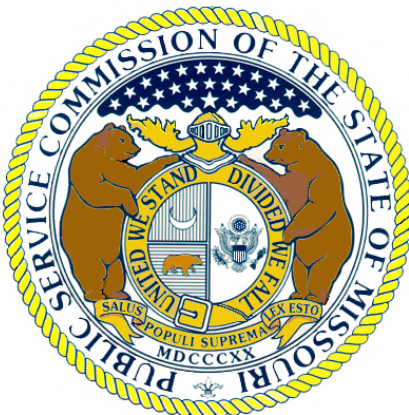
ATTEST:

/s/ Trisha M. Quijano
Executive Secretary, Designee

/s/ Richard W. Lozier Jr.

Dated at Des Moines, Iowa, this 15th day of May, 2018.

BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI



In the Matter of Petition of Missouri-American
Water Company for Approval to Establish an
Infrastructure System Replacement Surcharge
(ISRS).

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File No. WO-2018-0373
Tariff No. YW-2019-0018

REPORT AND ORDER

Issue Date: December 5, 2018

Effective Date: December 15, 2018

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Petition of Missouri-American)	
Water Company for Approval to Establish an)	<u>File No. WO-2018-0373</u>
Infrastructure System Replacement Surcharge)	Tariff No. YW-2019-0018
(ISRS).)	

APPEARANCES

Missouri-American Water Company:

Dean L. Cooper, Brydon, Swearingen & England, PO Box 456, Jefferson City, Missouri 65102.

Staff of the Missouri Public Service Commission:

Mark Johnson, Deputy Counsel, and **Ron Irving**, Legal Counsel, PO Box 360, 200 Madison Street, Jefferson City, Missouri 65102.

Office of the Public Counsel:

Lera Shemwell, Senior Public Counsel, and **John Clizer**, Associate Public Counsel, PO Box 2230, 200 Madison St., Ste. 650, Jefferson City, Missouri, 65102-2230.

Regulatory Law Judge: Charles Hatcher

REPORT AND ORDER

I. Procedural History

On August 20, 2018, Missouri-American Water Company (“MAWC”) filed an application and petition with the Missouri Public Service Commission (“Commission”) to establish an Infrastructure System Replacement Surcharge (“ISRS”).

MAWC requests to establish an ISRS rate to recover costs incurred in connection with infrastructure system replacements made during the period January 1, 2018, through September 30, 2018. The Commission issued notice of the application and provided an opportunity for interested persons to intervene. The Empire District Electric Company filed a *Motion to Intervene*, which it subsequently withdrew. No other parties sought to intervene. The Commission suspended the filed tariffs until December 18, 2018.

On October 19, the Staff of the Commission (“Staff”) filed its Recommendation and Memorandum proposing a number of corrections and adjustments to MAWC’s calculations. Staff recommended that the Commission reject the original tariff sheet and approve an ISRS rate for MAWC based on Staff’s determination of the appropriate amount of ISRS revenues.

On October 29, MAWC filed a motion objecting to Staff’s recommendations. Also on October 29, the Office of the Public Counsel (“OPC” or “Public Counsel”) filed its response in support of the Staff Recommendation. The Commission held an evidentiary hearing on November 20. In total, the Commission admitted the testimony of six witnesses and 10 exhibits into evidence and took notice of a select prior Commission decision. Post-hearing briefs were filed on November 27, and the case was deemed submitted for the Commission’s decision on that date.¹

II. Findings of Fact

Any finding of fact for which it appears that the Commission has made a determination between conflicting evidence is indicative that the Commission attributed

¹ “The record of a case shall stand submitted for consideration by the commission after the recording of all evidence or, if applicable, after the filing of briefs or the presentation of oral argument.” Commission Rule 4 CSR 240-2.150(1).

greater weight to that evidence and found the source of that evidence more credible and more persuasive than that of the conflicting evidence.

1. MAWC is an investor-owned water utility providing retail water service to large portions of Missouri, and specific to this case, most of St. Louis County.²

2. MAWC is a “water corporation” and a “public utility”, as defined in Sections 386.020(59) and (43), and 393.1000(7), RSMo 2016.³

3. OPC “may represent and protect the interests of the public in any proceeding before or appeal from the public service commission.”⁴ The Public Counsel participated in this matter.

4. Staff is a party in all Commission investigations, contested cases and other proceedings, unless it files a notice of its intention not to participate in the proceeding within the intervention deadline set by the Commission.⁵

5. On August 20, 2018, MAWC filed a petition (“Petition”) for its St. Louis County service territory, requesting an ISRS to recover eligible costs incurred for infrastructure system replacements made during the period January 1, 2018, through July 30, 2018, initially filed with pro forma ISRS costs for August 1 through September 30 (“2018 ISRS Period”).⁶

6. The ISRS request exceeds one million dollars, but is not in excess of ten percent of the base revenue levels approved by the Commission in the last MAWC rate case.⁷

² MAWC’s Petition to Establish an Infrastructure System Replacement Surcharge & Motion For Approval of Customer Notice, p. 2.

³ *Id.*

⁴ Section 386.710(2), RSMo 2016; Commission Rules 4 CSR 240-2.010(10) and (15) and 2.040(2).

⁵ MAWC’s Petition to Establish an Infrastructure System Replacement Surcharge & Motion For Approval of Customer Notice; Commission Rules 4 CSR 240-2.010(10) and (21) and 2.040(1).

⁶ Staff Recommendation, Appendix A, p. 1.

⁷ Section 393.1003.1, RSMo 2016; Staff Recommendation, Appendix A, p. 2.

7. This is MAWC's first ISRS filing since their most recent general rate case, File Number WR-2017-0285, *Report and Order* issued May 2, 2018, and *Order Approving Tariffs* issued May 15, 2018.⁸ As part of that general rate case, MAWC's existing ISRS was reset to zero.⁹

8. Water corporations are permitted to recover certain infrastructure system replacement costs outside of a formal rate case through a surcharge on its customers' bills.¹⁰ In conjunction with its Petition, MAWC filed a tariff sheet that would generate a total revenue requirement for MAWC's ISRS.¹¹ MAWC's proposed ISRS revenue requirement was later updated by MAWC to \$7,264,876.¹²

9. MAWC attached supporting documentation to its Petition for completed plant additions. This included documentation identifying the type of addition, utility account, work order description, addition amount, depreciation rate, accumulated depreciation, and depreciation expense.¹³ The company also provided estimates of capital expenditures for projects completed through September 2018, which were subsequently replaced with updated actual cost information and provided to Staff.¹⁴

⁸ Report and Order, *In the Matter of Missouri-American Water Company's Request for Authority to Implement General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas, WR-2017-0285*, issued May 2, 2018; Order Approving Tariffs, *In the Matter of Missouri-American Water Company's Request for Authority to Implement General Rate Increase for Water and Sewer Service Provided in Missouri Service Areas, WR-2017-0285, et al.*, issued May 15, 2018.

⁹ Section 393.1006.6, RSMo 2016.

¹⁰ Sections 393.1000 to 393.1006, RSMo 2016.

¹¹ MAWC's Petition to Establish an Infrastructure System Replacement Surcharge & Motion For Approval of Customer Notice, Appendix B.¹² Staff Recommendation, Appendix A, p 3; Staff's Post-Hearing Brief, p. 4.

¹² Staff Recommendation, Appendix A, p 3; Staff's Post-Hearing Brief, p. 4.

¹³ MAWC's Petition to Establish an Infrastructure System Replacement Surcharge & Motion For Approval of Customer Notice, Appendices D, E, and F.

¹⁴ Staff Recommendation, Appendix A, p. 2; Direct Testimony of Brian W. LaGrand, p. 5.

10. MAWC's updated filing removed such items as: repairs to customer owned appliances and equipment; duplicate charges; installation of new service lines; and customer owned lead service line replacement costs.¹⁵

11. MAWC's supporting documents included an amount for Accumulated Deferred Income Taxes (ADIT).¹⁶ MAWC also included a proposed calculation for a Deferred Tax Asset relating to an assumed net operating loss ("NOL") for 2018 in the amount of \$9,577,697.¹⁷

12. An NOL results when a utility does not have enough taxable income to utilize all of the tax deductions to which it would otherwise be entitled. The amount of unused deductions is the NOL.¹⁸ An NOL is a tax return adjustment and not a regulatory item.¹⁹

13. On October 19, Staff submitted its *Staff Recommendation*. Staff's recommended revenue requirement is \$6,377,959.²⁰

14. Staff and MAWC are in agreement with the *Staff Recommendation* except on one issue, specifically whether there is an NOL, and, if so, what impact it may have on the ISRS.²¹

15. Staff recommended removing approximately \$9.3 million in Deferred Tax Asset²² from MAWC's ISRS calculations because it was not an NOL resulting from the

¹⁵ Staff Recommendation, Appendix A, p. 4.

¹⁶ MAWC's Petition to Establish an Infrastructure System Replacement Surcharge & Motion For Approval of Customer Notice, Appendix C.

¹⁷ MAWC's Petition to Establish an Infrastructure System Replacement Surcharge & Motion For Approval of Customer Notice, Appendix C. See also Direct Testimony of Lisa Ferguson at p. 3.

¹⁸ Ex. 3, Oligschlaeger Direct, p. 5.

¹⁹ Hearing Transcript, p. 78 (John Riley); Direct Testimony of John S. Riley, p. 2.

²⁰ Staff's Post-Hearing Brief, p. 4.

²¹ MAWC's Response to Staff's Recommendation, p.1-2. Staff's Post-Hearing Brief, p. 2 and footnote 2 (noting that \$9,272 removed by Staff should remain included).

²² The \$9.3 million figure is derived from the Net Operating Loss/Taxable Income of \$36.7 million as shown on Schedule BWL-1, p. 2 of the Direct Testimony of Brian W. LaGrand.

2018 ISRS Period.²³ This removal results in an \$866,917 reduction in recoverable ISRS costs.²⁴

16. Only costs directly associated with qualifying ISRS plant that became in-service during the nine months of the 2018 ISRS Period should be reflected in ISRS rates.²⁵

17. MAWC has an NOL carryover from prior years.²⁶

18. No net amount of net operating loss has actually been generated for income tax purposes by MAWC on an aggregate basis since January 1, 2018, the beginning of the 2018 ISRS Period.²⁷

19. The Internal Revenue Service (“IRS”) Private Letter Rulings cited by MAWC to support its position²⁸ address time periods in which the utility in question was generating NOL amounts.²⁹

20. MAWC did not generate any NOL in the 2018 ISRS Period.³⁰

21. MAWC projects that it will be able to reflect all of its net accelerated depreciation benefits associated with ISRS plant additions on its books during the next two years without the need to record any new offsetting NOL amount.³¹

22. MAWC’s NOL as of December 31, 2017, are currently reflected in MAWC’s base rates as a result of MAWC’s last general rate case, File Number WR-2017-0285, *Report and Order* issued May 2, 2018, and *Order Approving Tariffs* issued May 15, 2018.³²

²³ Staff Recommendation, Appendix A, p. 4.

²⁴ Staff’s Post-Hearing Brief, p. 4.

²⁵ Direct Testimony of Mark L. Oligschlaeger, p. 6; Direct Testimony of Lisa M. Ferguson, p. 6

²⁶ Hearing Transcript, p 48 (Brian LaGrand); Direct Testimony of John R. Wilde, p. 12; Direct Testimony of Lisa M. Ferguson, p. 5.

²⁷ Hearing Transcript, p. 90 (Mark Oligschlaeger); Direct Testimony of Lisa M. Ferguson, p. 6; Direct Testimony of John S. Riley, p. 3.

²⁸ Direct Testimony of John R. Wilde, Schedule JRW-2 through JRW-6, ; Private Letter Ruling are issued by the IRS to the taxpayer who requested it.

²⁹ Hearing Transcript, p. 90 (Mark Oligschlaeger).

³⁰ Hearing Transcript, p. 40 (John Riley); Direct Testimony of John Riley, p. 3; Direct Testimony of Lisa M. Ferguson, p. 7.

³¹ Direct Testimony of Mark L. Oligschlaeger, p. 7; Direct Testimony of Lisa M. Ferguson, p. 5-6; Direct Testimony of John R. Wilde, p. 13.

23. A taxpayer cannot utilize an NOL carryforward amount from a prior tax year without first exhausting all of the deductions available to it for the current tax year.³³

III. Conclusions of Law

MAWC is a “water corporation” and “public utility” as those terms are defined by Section 386.020, RSMo 2016.³⁴ MAWC is subject to the Commission’s jurisdiction, supervision, control, and regulation as provided in Chapters 386 and 393, RSMo. The Commission has the authority under Sections 393.1000 through 393.1006, RSMo, to consider and approve ISRS requests such as the one proposed in the Petition. Since MAWC brought the Petition, it bears the burden of proof.³⁵ The burden of proof is the preponderance of the evidence standard.³⁶ In order to meet this standard, MAWC must convince the Commission it is “more likely than not” that its allegations are true.³⁷

Section 393.1006.2(4) provides that where the Commission finds that a petition complies with the statutory requirements, the Commission “shall enter an order authorizing the water corporation to impose an ISRS that is sufficient to recover “appropriate pretax revenues.” Section 393.1000(1) defines “appropriate pretax revenues” to include “recognition of accumulated deferred income taxes and accumulated depreciation associated with eligible infrastructure system replacements which are included in a currently effective ISRS.”

³² Hearing Transcript, p. 87 (Mark Oligschlaeger); Direct Testimony of Lisa M. Ferguson, p. 5 and 7.

³³ Hearing Transcript, p. 68-69 (John Wilde).

³⁴ Unless otherwise stated, all statutory citations are to the Revised Statutes of Missouri 2016.

³⁵ “The burden of proof, meaning the obligation to establish the truth of the claim by preponderance of the evidence, rests throughout upon the party asserting the affirmative of the issue”. *Clapper v. Lakin*, 343 Mo. 710, 723, 123 S.W.2d 27, 33 (1938); see also Section 393.150.2.

³⁶ *Bonney v. Environmental Engineering, Inc.*, 224 S.W.3d 109, 120 (Mo. App. 2007); *State ex rel. Amrine v. Roper*, 102 S.W.3d 541, 548 (Mo. banc 2003); *Rodriguez v. Suzuki Motor Corp.*, 936 S.W.2d 104, 110 (Mo. banc 1996).

³⁷ *Holt v. Director of Revenue, State of Mo.*, 3 S.W.3d 427, 430 (Mo. App. 1999); *McNear v. Rhoades*, 992 S.W.2d 877, 885 (Mo. App. 1999); *Rodriguez*, 936 S.W.2d at 109 -111; *Wollen v. DePaul Health Center*, 828 S.W.2d 681, 685 (Mo. banc 1992).

IV. Decision

The issue presented in this case is whether MAWC should be allowed to reduce its ADIT to reflect an NOL. To address this issue, we must answer two questions: 1) is MAWC generating an NOL in the applicable 2018 ISRS recovery period; and 2) if it is generating an NOL, is that NOL associated with the replacements included in the proposed ISRS.

Is there an NOL for MAWC in 2018?

MAWC has not provided evidence to support that it will in fact have an NOL in 2018. On the contrary, the evidence indicates MAWC is generating more revenue for 2018 than it is generating expenses that qualify for deductions. Thus, MAWC is expected to utilize prior NOL carryovers to offset its taxable income in 2018 and 2019, but will not generate a new NOL. Since the IRS Private Letter Rulings only address periods where an NOL is generated, there is no legal support for MAWC's position that an exclusion of an NOL would violate normalization requirements of the IRS Code.³⁸

Because MAWC is expected to have taxable income in 2018, it is reasonable to conclude that MAWC is not generating an NOL during the 2018 ISRS Period at issue, either. And in fact, there was no evidence of an NOL being generated during the 2018 ISRS Period. In short, although the ISRS statute requires recognition of ADIT, which might include reflection of an NOL, we cannot allow MAWC to reduce its ADIT balance to reflect an NOL that does not exist.

If there is an NOL, is it associated with the replacements included in the currently effective ISRS?

Since there is not an NOL in the 2018 ISRS Period, the question of whether an NOL is associated with the proposed ISRS is moot.

³⁸ Hearing Transcript, p. 87, 89, 90, and 92. (Mark Oligschlaeger).

Based on Staff's adjustments to exclude the ineligible costs, the corrected ISRS calculation will result in MAWC collecting ISRS revenues in the amount of \$6,377,959. The Commission also concludes that the appropriate rate design is that which was testified to by Matthew J. Barnes and to which there were no objections.

MAWC has complied with the requirements of the applicable ISRS statutes to authorize its use of an ISRS, however, for the reasons previously stated, the recovery should not include NOL. The Commission concludes that MAWC shall be permitted to establish an ISRS to recover ISRS surcharges for these cases in the amount of \$6,377,959. Since the revenues and rates authorized in this order differ from those contained in the tariffs the company first submitted, the Commission will reject those tariffs. The Commission will allow MAWC an opportunity to submit new tariffs consistent with this order.

Section 393.1015.2(3), RSMo, requires the Commission to issue an order to become effective not later than 120 days after the petition is filed. That deadline is December 18, 2018, so the Commission will make this order effective on December 15, 2018.

THE COMMISSION ORDERS THAT:

1. Missouri-American Water Company is authorized to establish an Infrastructure System Replacement Surcharge ("ISRS") sufficient to recover ISRS revenues in the amount of \$6,377,959. Missouri-American Water Company is authorized to file an ISRS rate for each customer class as described in the body of this order.

2. The tariff sheet filed by Missouri-American Water Company on August 20, 2018, and assigned Tariff Tracking No. YW-2019-0018, is rejected.

3. Missouri-American Water Company is authorized to file new tariffs to recover

the revenue authorized in this Report and Order.

4. This order shall become effective on December 15, 2018.



BY THE COMMISSION

A handwritten signature in cursive script that reads "Morris L. Woodruff".

Morris L. Woodruff
Secretary

Silvey, Chm., Kenney, Hall, Rupp, and
Coleman, CC., concur.

Hatcher, Regulatory Law Judge



STATE OF NEW JERSEY
Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
Post Office Box 350
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

WATER

IN THE MATTER OF THE PETITION OF NEW)	DECISION AND ORDER
JERSEY-AMERICAN WATER COMPANY, INC. FOR)	APPROVING
AUTHORIZATION TO IMPLEMENT A DISTRIBUTION)	STIPULATION OF
SYSTEM IMPROVEMENT CHARGE)	SETTLEMENT
)	
)	DOCKET NO. WR17111183

Parties of Record:

Robert J. Brabston, Esq., New Jersey-American Water Company, Inc., Petitioner
Stefanie A. Brand, Esq., Director, New Jersey Division of Rate Counsel

BY THE BOARD:

On November 17, 2017, New Jersey-American Water Company, Inc. ("Company" or "Petitioner"), a public utility corporation of the State of New Jersey, filed a petition pursuant to N.J.S.A. 48:2-21 and N.J.A.C. 14:9-10.1 et seq., for approval to file and implement an adjustment clause tariff that would establish a Distribution System Improvement Charge ("DSIC") for the renewal of water distribution system assets for the period of 2018 through 2020 ("Foundational Filing").

BACKGROUND/PROCEDURAL HISTORY

The Company's initial DSIC Foundational Filing was approved by the Board on October 23, 2012 in BPU Docket No. WR12070669. The Company filed its base rate filing, BPU Docket No. WR15010035, on January 9, 2015, which incorporated the entirety of the Company's DSIC charge from its first DSIC recovery period (October 23, 2012 through April 30, 2013); second DSIC recovery period (May 1, 2013 through October 31, 2013); third DSIC recovery period (November 1, 2013 through April 30, 2014); and fourth DSIC recovery period (May 1, 2014 through October 31, 2014). Additionally, it incorporated DSIC eligible projects that were placed in service between November 1, 2014 and July 31, 2015, the end of the test year.

The Petitioner filed its second Foundational Filing on June 12, 2015 in BPU Docket No. WR15060724. The Company filed its base rate filing, BPU Docket No. WR15010035, on

January 9, 2015, which incorporated the entirety of the Company's DSIC charge from its first DSIC recovery period (September 21, 2015 through March 31, 2016); second DSIC recovery period (April 1, 2016 through September 30, 2016); third DSIC recovery period (October 1, 2016 through March 31, 2017); and fourth DSIC recovery period (April 1, 2017 through September 30, 2017). Additionally, it incorporated DSIC eligible projects that were placed in-service between November 1, 2016 and July 31, 2017, the end of the test year.

The Petitioner ultimately filed its third Foundational Filing on November 17, 2017, as a separately docketed matter from the base rate case. While the Company, the Division of Rate Counsel ("Rate Counsel"), and the Staff of the Board of Public Utilities (collectively, "Parties") worked to issue and respond to discovery questions in a timely manner, this matter was delayed pending rate case determination which would permit this matter to be acted upon by the Board after the 120 day period specified in N.J.A.C. 14:9-10.4(c). The Petitioner responded to discovery requested from all Parties. A discovery conference was held on August 14, 2018, with representatives from all Parties in attendance. At that conference, representatives of the Company responded to questions from Board Staff and Rate Counsel.

Revised Appendices C&D were resubmitted on August 24, 2018. These appendices were being resubmitted as requested by both Staff and Rate Counsel. In addition, a supplemental Appendix which included all projects previously approved, but not initiated, under the BPU-approved 2015 Foundational Filing was submitted. Since these projects were approved and eligible for inclusion in a future DSIC recovery period filing, it is the Company's intention to utilize these projects listed in the supplemental Appendix in the future as either substitute projects or as DSIC-eligible projects initiated under any future gap period, as set forth in, inter alia, N.J.A.C. 14:9-10.4.

After proper notice, a public hearing was held at the Howell Municipal Building on March 14, 2018, at 5:30 pm. Seven members of the public appeared at the hearing and two members provided comments on two issues: affordability concerns resulting from living on a fixed income of social security; and water quality concerns, specifically, water that leaves black stains.

STIPULATION

As a result of an analysis of the Petitioner's Foundational Filing, which included a review of the discovery responses, the Parties reached an agreement on this matter. On October 16, 2018, the Parties executed a stipulation of settlement ("Stipulation"). In sum, the Stipulation¹ states:

1. The Parties recommend that the Board find that the Company's Foundational Filing, including a revised Appendix C—Project List, summary of which is attached to this Stipulation as Exhibit A, satisfies all of the requirements of N.J.A.C. 14:9-10.4(b) and that the Board approve the Foundational Filing as modified by revised Appendix C. The revised Appendix C omits those projects originally identified by the Company as "DSIC-eligible projects" which the Parties agreed to remove from the project list due to the projects having been recognized in the Company's pending rate case.

2. The Parties recommend that the Board find that the projects listed in the revised Appendix C—Project List, summary of which is attached hereto as Exhibit A, are "DSIC-eligible projects" within the scope and meaning of the definition set forth in N.J.A.C. 14:9-10.2 and

¹ Although summarized in this Order, the detailed terms of the Stipulation are controlling, subject to the findings and conclusions of this Order.

N.J.A.C. 14:9-10.3(a) and that the Board approve the Project List. NJAWC represents that the projects listed in the revised Appendix C-Project List only include projects that are scheduled to begin construction after the effective date of this Foundational Filing. The Parties also agree that the projects listed in Appendix C-1, which were also removed from the as-filed Appendix C, are provided for informational purposes only. The Company will comply with the notice procedures in N.J.A.C.14:9-10.4(b) before proceeding to implement any projects listed on Appendix C-1.

3. The Parties agree that the revenue requirement associated with the actual costs of the approved projects listed in Exhibit A, Appendix C be recovered through future "DSIC filings" made during the "DSIC period" as those terms are defined in N.J.A.C. 14:9-10.2 at intervals and in a manner consistent with the requirements of N.J.A.C. 14:9-10.5.

4. The Parties agree that the annual "base spending" as defined in N.J.A.C. 14:9-10.2 is \$28,019,927, based on the information filed in the Company's last annual report on file with the Board (the 2017 Annual Report) at the time new base rates are expected to be set.

5. The Parties agree that the maximum amount of annual DSIC revenue that may be collected by the NJAWC is \$34,777,379, or 5% of the revenues expected to be set in the Company's current base rate case.

DISCUSSION AND FINDINGS

Based upon the information presented in the Foundational Filing and agreed to by the Parties in the Stipulation, the Board **HEREBY FINDS** that the Company's 2017 overall revenue for DSIC purposes is \$695,547,570. The Board **FURTHER FINDS** that the Petitioner's maximum amount of annual DSIC revenues that may be collected is \$34,777,379, or no more than 5% of the Company's total water revenues established in the Company's most recent base rate case.² The Company will implement the DSIC surcharge if, and when, it achieves specific levels of infrastructure investment and completes and places the facilities into service as required by N.J.A.C. 14:9-10.1 et seq. As an example, an average residential customer with a 5/8-inch meter may be subjected to a maximum monthly DSIC surcharge of \$3.37. These proposed rates are estimates and may change, however the maximum annual DSIC revenue requirement, \$34,777,379, cannot be exceeded.

The Board **HEREBY ORDERS** that, in accordance with N.J.A.C. 14:9-10.5(b), the Petitioner shall make DSIC filings on a semi-annual basis, commencing approximately six months after the effective date of the Foundational Filing. Petitioner must submit its semi-annual DSIC filing within 15 days of the end of the DSIC recovery period. DSIC filings shall be reviewed by Board Staff and Rate Counsel. Petitioner may recover the interim surcharge associated with the DSIC-eligible projects closed during the DSIC recovery period not objected to by Board Staff or Rate Counsel beginning 60 days after the end of the DSIC recovery period, subject to refund at the Board's discretion. It is **FURTHER ORDERED** that Petitioner must comply with the base spending requirements set forth in this Order. Failure to comply with the base spending requirements will result in a reduction and refund, where appropriate, of the DSIC surcharge. Thus, Petitioner's DSIC surcharge is interim, subject to refund, and shall not exceed the annual maximum revenue requirement of \$34,777,379, set forth in this Order.

The Board **FURTHER ORDERS**, that in accordance with N.J.A.C. 14:9-10.4(e), if within three

² The rate case is being decided on the Board's October 29, 2018.

(3) years after the effective date of this Order, Petitioner has not filed a petition in accordance with the Board's rules for the setting of its base rates, all interim charges collected under the DSIC shall be deemed an over-recovery, and shall be credited to customers in accordance with the Board's rules.

The Board **FURTHER ORDERS**, that as of the effective date of the Order entered in the Company's base rate filing dated October 29, 2018, Docket Number WR17090985, the prior foundational filing (effective September 21, 2015, Docket No. WR15060724) was concluded, the DSIC rate was reset to zero and no additional DSIC filings or DSIC rates may be collected, made or implemented pursuant thereto.

Having reviewed the Foundational Filing and the Stipulation, the Board **FINDS** that the Parties have voluntarily agreed to the Stipulation, and that the Stipulation fully disposes of all issues in this proceeding and is consistent with the law. The Board **FINDS** the Foundational Filing and Stipulation to be reasonable, in the public interest, and in accordance with the law. Therefore, the Board **HEREBY ADOPTS** the Stipulation, attached hereto, including all attachments and schedules, as its own, incorporating by reference the terms and conditions of the Stipulation, as if they were fully set forth at length herein, subject to the requirements set forth in N.J.A.C. 14:9-10.1 et seq., and the conditions set forth in this Order.

DSIC shall be deemed an over-recovery, and shall be credited to customers in accordance with the Board's rules.

The Board **FURTHER ORDERS**, that as of the effective date of the New Jersey-American Water Company October 29, 2018 Base Rate Order, Docket Number WR17090985, the prior foundational filing (effective September 21, 2015, Docket No. WR15060724) was concluded, the DSIC rate was reset to zero and no additional DSIC filings or DSIC rates may be collected, made or implemented pursuant thereto.

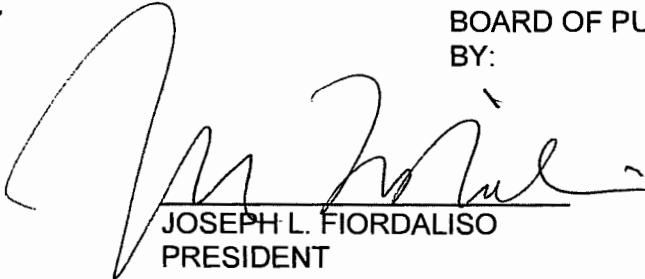
Having reviewed the Foundational Filing and the Stipulation, the Board **FINDS** that the Parties have voluntarily agreed to the Stipulation, and that the Stipulation fully disposes of all issues in this proceeding and is consistent with the law. The Board **FINDS** the Foundational Filing and Stipulation to be reasonable, in the public interest, and in accordance with the law. Therefore, the Board **HEREBY ADOPTS** the Stipulation, attached hereto, including all attachments and schedules, as its own, incorporating by reference the terms and conditions of the Stipulation, as if they were fully set forth at length herein, subject to the requirements set forth in N.J.A.C. 14:9-10.1 et seq., and the conditions set forth in this Order.

Based upon the foregoing, the Board **HEREBY APPROVES** the Company's Foundational Filing and **ORDERS** that the Company may implement a Distribution System Improvement Charge, subject to this Order and Petitioner's ongoing compliance with the DSIC regulations, as well as conformity of the base spending requirements and semi-annual true-up submissions.

The effective date of this Order is October 29, 2018.

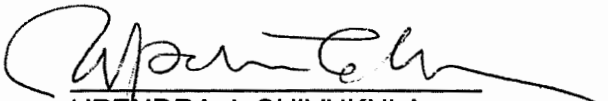
DATED: 10/29/18

BOARD OF PUBLIC UTILITIES
BY:


JOSEPH L. FIORDALISO
PRESIDENT


MARY-ANNA HOLDEN
COMMISSIONER


DIANNE SOLOMON
COMMISSIONER


UPENDRA J. CHIVUKULA
COMMISSIONER


ROBERT M. GORDON
COMMISSIONER

ATTEST: 
AIDA CAMACHO-WELCH
SECRETARY

IN THE MATTER OF THE PETITION OF NEW JERSEY-AMERICAN WATER COMPANY, INC.
FOR AUTHORIZATION TO IMPLEMENT A DISTRIBUTION SYSTEM
IMPROVEMENT CHARGE
DOCKET NO. WR17111183

BOAED ORDER SERVICE LIST

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STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE PETITION OF : BPU DOCKET NO. WR17111183
NEW JERSEY-AMERICAN WATER :
COMPANY, INC. FOR AUTHORIZATION : STIPULATION OF SETTLEMENT
TO IMPLEMENT A DISTRIBUTION :
SYSTEM IMPROVEMENT CHARGE :

APPEARANCES:

Robert J. Brabston, Esquire for Petitioner, New Jersey-American Water Company, Inc.;

Andrew Kuntz and Emma Xiao, Esquires, Deputy Attorneys General for Staff of the New Jersey Board of Public Utilities (**Gurbir S. Grewal**, Attorney General of New Jersey); and

Christine Juarez, Assistant Deputy Rate Counsel for the Division of Rate Counsel (Stefanie A. Brand, Esquire, Director).

TO THE HONORABLE BOARD OF PUBLIC UTILITIES:

On November 17, 2017, New Jersey-American Water Company, Inc. ("NJAWC"), a public utility of the State of New Jersey, filed a Petition with the Board of Public Utilities ("Board") pursuant to N.J.S.A. 48:2-21 and New Jersey Administrative Code (N.J.A.C.) 14:9-10.1 et seq. and such statutes and regulations and Board orders that may be deemed by the Board to be applicable, for approval of its Foundational Filing to enable the implementation of a Distribution System Improvement Charge ("DSIC" or "Surcharge") for the renewal of water distribution system assets for the period of 2018 through 2020.

NJAWC is a regulated public utility corporation engaged in the production, treatment and distribution of water, and collection and treatment¹ of wastewater within its defined service territory within the State of New Jersey. Said service territory includes portions of the following counties: Atlantic; Bergen, Burlington; Camden; Cape May; Essex; Gloucester; Hunterdon; Middlesex; Mercer; Monmouth; Morris; Ocean; Passaic; Salem; Somerset; Union; and Warren.

¹ Currently, NJAWC treats wastewater at its Pottersville, Deep Run, and former AWWM facilities.

As of December 31, 2018, NJAWC serves approximately 631,000 water and fire service customers and 41,000 sewer service customers in 18 counties throughout the state.

In support of its Petition, NJAWC submitted a Foundational Filing, consisting of the following information required by N.J.A.C. 14:9-10.4:

a) An engineering evaluation report (“Engineering Report”) of the water utility’s distribution system that:

i. Identifies the rationale for the work needed to be accelerated for the water utility to properly sustain its water distribution network; and

ii. Demonstrates that the plan proposed to accelerate the renewal of the distribution network is the most cost effective plan; and

iii. To the extent that elements of the distribution network are failing, identifies what mechanisms are causing the failures; and

iv. Identifies what is being done to extend the life of the water utility’s assets.

b) Information about proposed “DSIC-eligible projects” as defined in N.J.A.C. 14:9-10.2 and 14:9-10.3 for the upcoming “DSIC period” as defined in N.J.A.C. 14:9-10.2 that includes the following:

i. Aggregate information capturing blanket type DSIC-eligible infrastructure to be rehabilitated or replaced (e.g., estimated number of valves, number of hydrants, or number of service lines replaced) and the estimated annual cost of such blanket type replacement programs;

ii. Vintage, condition, and other similar relevant, reasonably available information about the eligible infrastructure that is being rehabilitated or replaced;

- iii. The nature, location, estimated duration of project work (including estimated in-service dates) and a description and reason for project necessity;
 - iv. A list of projects with project identification numbers, DSIC-eligible asset class or category, and estimated project costs;
 - v. Other such relevant and appropriate information.
- c) The expected amount of NJAWC's base spending including underlying detail documenting that the base spending has been made on the appropriate types of infrastructure; a proposed DSIC assessment, calculated in accordance with subsection N.J.A.C. 14:9-10.8; and work papers showing the detailed calculations supporting the proposed assessment schedule.

In BPU Docket No. WO10090655, the Board approved a Distribution System Improvement Charge (DSIC), which was published in the New Jersey Register on June 4, 2012 and effective on that date. The DSIC rules were adopted as an amendment and addition to the N.J.A.C. as §§ 14:9-10.1 et seq. Subsequently, on August 7, 2017, the Board readopted the DSIC Rules with amendments and published the current Rule in the New Jersey Register in Volume 49, Issue Number 15 at 49 N.J.R. 2542(a). The rule sets forth the conditions and procedures pursuant to which regulated water utilities may seek recovery of eligible capital investments through monthly surcharges, set semi-annually, on customer bills.

The Petition in this matter was filed in accordance with N.J.A.C. 14:9-10.1 et seq. and 14:1-5.1 et seq.

On March 14, 2018, a public hearing was conducted at 5:30 p.m. in Howell Township, New Jersey at the Howell Municipal Building.

As a result of the foregoing, the Parties agree to the following settlement terms:

SETTLEMENT AGREEMENT

1. NJAWC recently settled a full base rate case in BPU Docket No. WR17090985 (with one issue reserved for briefing, which issue will not impact rates to be implemented at this time). The settlement is expected to be approved by the Board at its October 29, 2018 agenda meeting, after which the Board's Order will be served and become effective consistent with N.J.S.A. 48:2-40, at which time the previous DSIC rate will be reset to zero, and this Stipulation for the DSIC Foundational Filing herein is also expected to be approved by the Board on October 29, 2018, and the Board Order approving this Stipulation will likewise become effective in accordance with N.J.S.A. 48:2-40.

2. The Parties recommend that the Board find that NJAWC's Foundational Filing, including a revised Appendix C—Project List, summary of which is attached to this Stipulation in Exhibit A, satisfies all of the requirements of N.J.A.C. 14:9-10.4(b) and that the Board approve the Foundational Filing as modified by revised Appendix C. The revised Appendix C omits those projects originally identified by the Company as “DSIC-eligible projects” which the parties agreed to remove from the project list due to the projects having been recognized in the Company's pending rate case.

3. The Parties recommend that the Board find that the projects listed in the revised Appendix C—Project List, summary of which is attached hereto in Exhibit A, are “DSIC-eligible projects” within the scope and meaning of the definition set forth in N.J.A.C. 14:9-10.2 and N.J.A.C. 14:9-10.3(a) and that the Board approve the Project List. NJAWC represents that the projects listed in the revised Appendix C-Project List only include projects that are scheduled to begin construction after the effective date of this Foundational Filing. The Parties also agree that the projects listed in Appendix C-1, which were also removed from the as-filed Appendix C, are provided for informational purposes only. The Company will comply with the notice of

substitution procedures in N.J.A.C.14:9-10.4(b)5 before proceeding to implement any projects listed on Appendix C-1.

4. The Parties to this Stipulation agree that the revenue requirement associated with the actual costs of the approved projects listed in Exhibit A (Appendix C) be recovered through future "DSIC filings" made during the "DSIC period" as those terms are defined in N.J.A.C. 14:9-10.2 at intervals and in a manner consistent with the requirements of N.J.A.C. 14:9-10.5.

5. The Parties to this Stipulation agree that the annual "base spending" as defined in N.J.A.C. 14:9-10.2 is \$28,019,927, based on the information filed in the Company's last annual report on file with the Board (the 2017 Annual Report) at the time new base rates are expected to be set. An updated Appendix D showing the calculation of the Base Spending amount based on information in the 2017 Annual Report is provided herein as Exhibit B.

6. The Parties agree that the maximum amount of annual DSIC revenue that may be collected by the NJAWC is \$34,777,379, or 5% of the revenues expected to be set in the Company's current base rate case.

7. Adequate public notice of this filing, and the effect thereof, was made by serving the public notice by mail upon the clerks of municipalities within the NJAWC's service area, upon the Clerks of the Boards of Chosen Freeholders within NJAWC's service area, and upon the County Executives within NJAWC's service area, at least twenty (20) days prior to the dates set for the public hearings, which notice included and specified the times and places of said hearings.

8. Customers were notified of this filing and the effect thereof as well as the time and place of the public hearing by publication of the public notice at least twenty (20) days prior to the date set for the public hearing, in newspapers of general circulation within

NJAWC's service territory. In addition, customers were also made aware of this filing and the effect thereof by bill message included on customers' bills and by posting the entire Foundational Filing on the NJAWC company website.

9. Proof of Service of the Notice as previously referred to herein was submitted to the Board at the public hearing on March 14, 2018.

10. The Parties agree and recommend to the Board that the Company's Foundational Filing, including its revised project list in Appendix C be considered by the Board at the next agenda meeting, scheduled for October 29, 2018. The Parties understand that service of the Board Order approving this Stipulation shall be in accordance with N.J.S.A. 48:2-40.

11. This Stipulation shall be binding on the Parties to this proceeding upon approval hereof by the Board. This Stipulation shall bind the Parties in this matter only and shall not be considered precedent in any other proceeding involving the Parties hereto.

12. This Stipulation contains terms, each of which is interdependent with the others and essential in its own right to the signing of this Stipulation. Each term is vital to the agreement as a whole, since the signatory Parties individually and jointly state that they would not have signed the Stipulation had any term been modified in any way. In the event that any modifications whatsoever are made to this Stipulation, each of the Parties hereto is entitled to certain procedures in the event of such occurrence.

13. If any modification is made to the terms of this Stipulation, the signatory Parties must be given the right to be placed in the position in which each Party was before this Stipulation was executed. It is essential that each party be given the option either to modify its own position, to accept the proposed change(s) or to resume the proceeding as if no agreement had been reached.

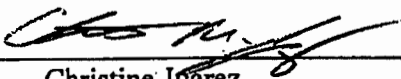
14. The Parties believe that these procedures are fair to all concerned and, therefore, they are made an integral and essential element of this Stipulation.

15. This Stipulation may be executed in as many counterparts as there are signatories to this Stipulation, each of which counterpart shall be an original, but all of which shall constitute one and the same instrument.

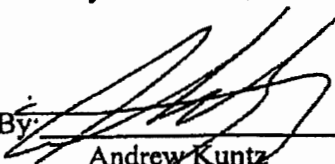
NEW JERSEY-AMERICAN WATER COMPANY, INC.

By: _____
Robert J. Brabston
Vice President and General Counsel

STEFANIE A. BRAND, DIRECTOR
DIVISION OF RATE COUNSEL

By:  _____ 10/23/18
Christine Juárez
Assistant Deputy Rate Counsel

GURBIR S. GREWAL
ATTORNEY GENERAL OF NEW JERSEY
Attorney for the Staff of the Board of Public Utilities

By:  _____
Andrew Kuntz
Deputy Attorney General

Dated: 10/19/18

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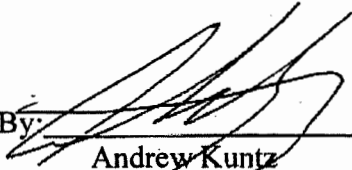
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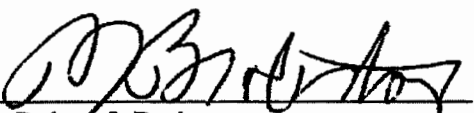
By:  _____
Andrew Kuntz
Deputy Attorney General

Dated: 10/19/18

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NEW JERSEY-AMERICAN WATER COMPANY, INC.

By:  10/23/2018
Robert J. Brabston
Vice President and General Counsel

STEFANIE A. BRAND, DIRECTOR
DIVISION OF RATE COUNSEL

By: _____
Christine Juarez
Assistant Deputy Rate Counsel

GURBIR S. GREWAL
ATTORNEY GENERAL OF NEW JERSEY
Attorney for the Staff of the Board of Public Utilities

By: _____
Andrew Kuntz
Deputy Attorney General

Dated:

Exhibit B

NJAWC Proposed DSIC Assessment 1

Note: Includes Gap period of April 2018 through September 2018)

Total Proposed DSIC Additions (Nov 2018-Apr 2019)	\$	138,018,000	
Less: Base Expenditures (Nov 2018-Apr 2019)		(8,000,000)	
Eligible Investment (Qualified DSIC Additions to UPIS During DSIC Period)		130,018,000	(A)
Less: Accum Depr		(498,428)	(B)
Less: Deferred Tax		(168,368)	(C)
Eligible Net Investment (net DSIC Additions to UPIS During DSIC Period)		129,351,204	
Times Pre-Tax ROR	X	8.84%	(D)
Pre-Tax Return on Investment		11,433,624	
Add Depreciation		1,993,712	
Revenue Recovery		13,427,335	
Revenue Factor		1.170197	(E)
DSIC Revenue Requirement Recovery Amount - Annual		15,712,633	(F)
DSIC Revenue Requirement Recovery Amount - Monthly		\$1,309,386	

(A) - Includes 6-months actual DSIC eligible projects closed to UPIS during DSIC Period

(B) - Accumulated Depreciation:

DSIC Eligible projects closed to UPIS	\$130,018,000
Composite Depreciation rate	1.53%
Depreciation Expense	1,993,712
1/2 Year Convention (for first 6-months)	498,428

(C) - Deferred Taxes:

DSIC Eligible projects closed to UPIS	\$130,018,000
MACRC rate for 1st Year Water Plant	4.00%
Tax Depreciation 1st Year	1,300,180
Book Depreciation	498,428
Tax Depr Greater than Book	801,752
Deferred Taxes at 21%	\$168,368

(D) - Pre-Tax Rate of Return:

	RATIOS	COST RATE	WEIGHTED AVG COST of CAPITAL	Pre-Tax ROR
Long Term Debt	46.00%	4.95%	2.28%	2.28%
Common Equity	54.00%	9.60%	5.18%	6.56%
Subtotal Return on Rate Base	100.00%		7.46%	8.84%

(E) - Revenue Factor:

Dollar of Revenue	\$1.00000
Less: GRT Tax	(0.1376832) (per WR17090985 As Filed)
Less: Bad Debts & Reg Assessments	(0.0049000) (per WR17090985 As Filed)
Less: BPU Assessment	(0.0023461) (per most recent assessment)
Less: DRC Assessment	(0.0005141) (per most recent assessment)
Revenue remaining after taxes, bad debts, and assessments	\$0.854557
Revenue [Gross-up] Factor	\$1.170197

(F)- Revenue Requirement:

Please note that the revenue requirement is limited by the DSIC-cap described above. For example if the Company's annual revenues established in their last base rate case were \$100,000,000, then the DSIC-cap would be calculated as follows:

Total annual revenues from most recent base rate case of \$100,000,000 X 5.00% = \$5,000,000

The Company's revenue requirement in the above example can not be greater than \$5,000,000 per year.

Monthly cost per 5/8th Inch Meter - Typical Residential Customer -
DSIC Revenue as a % of total Water Revenue \$695,547,570

\$1.52

2.26%

NJAWC Proposed DSIC Assesment 2

Total Proposed DSIC Additions (May 2019-Oct 2019)	102,806,313
Less: Base Expenditures (May 2019-Oct 2019)	(20,019,927)
Total Proposed DSIC Additions (Nov 2018-Apr 2019)	138,018,000
Less: Base Expenditures (Nov 2018-Apr 2019)	(8,000,000)
Eligible Investment (Qualified DSIC Additions to UPIS During DSIC Period)	212,804,386 (A)
Less: Accum Depr	(1,812,648) (B)
Less: Deferred Tax	(612,309) (C)
Eligible Net Investment (net DSIC Additions to UPIS During DSIC Period)	210,379,429
Times Pre-Tax ROR	X 8.84% (D)
Pre-Tax Return on Investment	18,595,878
Add Depreciation	3,263,168
Revenue Recovery	21,859,046
Revenue Factor	1.170197 (E)
DSIC Revenue Requirement Recovery Amount - Annual	25,579,399 (F)
DSIC Revenue Requirement Recovery Amount - Monthly	\$2,131,617

(A) - Includes 6-months actual DSIC eligible projects closed to UPIS during DSIC Period

(B) - Accumulated Depreciation:

	1st 6-Months	2nd 6-Months	Total
DSIC Eligible projects closed to UPIS	\$130,018,000	82,786,386	\$212,804,386
Composite Depreciation rate	1.53%	1.53%	1.53%
Depreciation Expense	1,993,712	1,269,456	3,263,168
1/2 Year Convention (for first 6-months)	\$1,495,284	\$317,364	\$1,812,648

(C) - Deferred Taxes:

	1st 6-Months	2nd 6-Months	Total
DSIC Eligible projects closed to UPIS	\$130,018,000	\$82,786,386	\$212,804,386
MACRC rate for 1st Year Water Plant	4.00%	4.00%	4.00%
Tax Depreciation 1st Year	3,900,540	827,864	4,728,404
Book Depreciation	1,495,284	317,364	1,812,648
Tax Depr Greater than Book	2,405,256	510,500	2,915,756
Deferred Taxes at 21%	\$505,104	\$107,205	\$612,309

(D) - Pre-Tax Rate of Return:

	RATIOS	COST RATE	WEIGHTED AVG COST of CAPITAL	Pre-Tax ROR
Long Term Debt	46.00%	4.95%	2.28%	2.28%
Common Equity	54.00%	9.60%	5.18%	6.56%
Subtotal Return on Rate Base	100.00%		7.46%	8.84%

(E) - Revenue Factor:

Dollar of Revenue	\$1.00000
Less: GRT Tax	(0.1376832) (per WR17090985 As Filed)
Less: Bad Debts & Reg Assessments	(0.0049000) (per WR17090985 As Filed)
Less: BPU Assessment	(0.0023461) (per most recent assessment)
Less: DRC Assessment	(0.0005141) (per most recent assessment)
Revenue remaining after taxes, bad debts, and assessments	\$0.854557
Revenue [Gross-up] Factor	\$1.170197

(F)- Revenue Requirement:

Please note that the revenue requirement is limited by the DSIC-cap described above. For example if the Company's annual revenues established in their last base rate case were \$100,000,000, then the DSIC-cap would be calculated as follows:

Total annual revenues from most recent base rate case of \$100,000,000 X 5.00% = \$5,000,000

The Company's revenue requirement in the above example can not be greater than \$5,000,000 per year.

**Monthly cost per 5/8th Inch Meter - Typical Residential Customer -
DSIC Revenue as a % of total Water Revenue \$695,547,570**

\$2.48
3.68%

NJAWC Proposed DSIC Assesment 3

Total Proposed DSIC Additions (Nov 2019-Apr 2020)	\$ 104,312,000
Proposed DSIC Additions Above Requirement (Nov 2019-Apr 2020)	\$ (9,488,011)
Total Proposed DSIC Additions to Meet Cap Requirement (Nov 2019-Apr 2020)	\$ 94,823,989
Less: Base Expenditures (Nov 2019-Apr 2020)	(18,212,000) (G)
Total Proposed DSIC Additions (May 2019-Oct 2019)	102,806,313
Less: Base Expenditures (May 2019-Oct 2019)	(20,019,927)
Total Proposed DSIC Additions (Nov 2018-Apr 2019)	138,018,000
Less: Base Expenditures (Nov 2018-Apr 2019)	(8,000,000)
Eligible Investment (Qualified DSIC Additions to UPIS During DSIC Period)	\$ 289,416,375 (A)
Less: Accum Depr	(3,774,299) (B)
Less: Deferred Tax	(1,274,951) (C)
Eligible Net Investment (net DSIC Additions to UPIS During DSIC Period)	284,367,126
Times Pre-Tax ROR	X 8.84% (D)
Pre-Tax Return on Investment	25,135,805
Add Depreciation	4,583,436
Revenue Recovery	29,719,241
Revenue Factor	1.170197 (E)
DSIC Revenue Requirement Recovery Amount - Annual	34,777,379 (F)
DSIC Revenue Requirement Recovery Amount - Monthly	\$2,898,115

(A) - Includes 6-months actual DSIC eligible projects closed to UPIS during DSIC Period

(B) - Accumulated Depreciation:

	1st 6-Months	2nd 6-Months	3rd 6-Months	Total
DSIC Eligible projects closed to UPIS	130,018,000	82,786,386	\$86,100,000	\$298,904,386
Composite Depreciation rate	1.53%	1.53%	1.53%	1.53%
Depreciation Expense	1,993,712	1,269,456	1,320,268	4,583,436
1/2 Year Convention (for first 6-months)	\$2,492,140	\$952,092	\$330,067	\$3,774,299

(C) - Deferred Taxes:

	1st 6-Months	2nd 6-Months	3rd 6-Months	Total
DSIC Eligible projects closed to UPIS	\$130,018,000	\$82,786,386	\$86,100,000	\$298,904,386
MACRC rate for 1st Year Water Plant	4.00%	4.00%	4.00%	4.00%
Tax Depreciation 1st Year	6,500,900	2,483,592	861,000	9,845,492
Book Depreciation	2,492,140	952,092	330,067	3,774,299
Tax Depr Greater than Book	4,008,760	1,531,499	530,933	6,071,193
Deferred Taxes at 21%	\$841,840	\$321,615	\$111,496	\$1,274,951

(D) - Pre-Tax Rate of Return:

	RATIOS	COST RATE	WEIGHTED AVG COST of CAPITAL	Pre-Tax ROR
Long Term Debt	46.00%	4.95%	2.28%	2.28%
Common Equity	54.00%	9.60%	5.18%	6.56%
Subtotal Return on Rate Base	100.00%		7.46%	8.84%

(E) - Revenue Factor:

Dollar of Revenue	\$1.000000
Less: GRT Tax	(0.1376832) (per most recent base rate case)
Less: Bad Debts & Reg Assessments	(0.0049000) (per most recent base rate case)
Less: BPU Assessment	(0.0023461) (per most recent assessment)
Less: DRC Assessment	(0.0005141) (per most recent assessment)
Revenue remaining after taxes, bad debts, and assessments	\$0.854557
Revenue [Gross-up] Factor	\$1.170197

(F)- Revenue Requirement:

Please note that the revenue requirement is limited by the DSIC-cap described above. For example if the Company's annual revenues established in their last base rate case were \$100,000,000, then the DSIC-cap would be calculated as follows:

Total annual revenues from most recent base rate case of \$100,000,000 X 5.00% = \$5,000,000

The Company's revenue requirement in the above example can not be greater than \$5,000,000 per year.

(G) - The DSIC spend will reach the cap in Assessment 3, however, Assessment 4 may be required to meet the annual base spend.

Monthly cost per 5/8th Inch Meter - Typical Residential Customer -
DSIC Revenue as a % of total Water Revenue \$695,547,570

\$3.37
5.00%

**Base Spend
Based on 2017 BPU Report**

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>A + D</u>
	Depr per 2017 BPU Report	Actual 2017 Taxable CIAC Amort	Actual 2017 NT CIAC Amort	Actual 2017 CIAC Total	
TD Mains Not Classified	\$4,597,321				
TD Mains 4in & Less	794,756				
TD Mains 6in to 8in	7,631,496				
TD Mains 10in to 16in	4,147,459				
TD Mains 18in & Grtr	2,116,411				
Subtotal - T&D Mains	343 19,287,444	(13,170)	(2,673,942)	(2,687,112)	
Services	345 8,832,182	(89,031)	(22,790)	(111,821)	
Hydrants	348 2,729,663	(1,539)	(28,889)	(30,428)	
Total	30,849,288	(103,739)	(2,725,621)	(2,829,361)	28,019,927

**Composite Depreciation Rate DSIC -
Based on WR17090985 - Settlement**

	Balance	Weight	Depr Rate	Weighted Rate	Annual Depr
TD Mains Not Classified	497,874,376	18.71%	0.80%	0.150%	3,982,995
TD Mains 4in & Less	44,223,231	1.66%	2.76%	0.046%	1,220,561
TD Mains 6in to 8in	744,347,636	27.96%	1.64%	0.459%	12,207,301
TD Mains 10in to 16in	480,558,516	18.05%	1.11%	0.200%	5,334,200
TD Mains 18in & Grtr	220,299,524	8.28%	1.26%	0.104%	2,775,774
Subtotal - T&D Mains	343 1,987,303,283	74.66%		0.959%	25,520,831
Services	345 529,946,031	19.91%	2.09%	0.416%	11,075,872
Hydrants	348 144,462,515	5.43%	2.92%	0.158%	4,218,305
Total	2,661,711,829	100.00%		1.53%	40,815,008

Monthly DSIC Charge Based on Meter Size and % Increase (B)

Meter Size	5/8" Equivalent (A)	Monthly DSIC Charge Based on Meter Size and % Increase (B)							
		0.50%	1.00%	1.50%	2.00%	3.00%	4.00%	5.00%	
5/8	1.0	\$ 0.34	\$ 0.67	\$ 1.01	\$ 1.35	\$ 2.02	\$ 2.70	\$ 3.37	
3/4	1.5	\$ 0.51	\$ 1.01	\$ 1.52	\$ 2.02	\$ 3.04	\$ 4.05	\$ 5.06	
1	2.5	\$ 0.84	\$ 1.69	\$ 2.53	\$ 3.37	\$ 5.06	\$ 6.75	\$ 8.43	
1-1/2	5.0	\$ 1.69	\$ 3.37	\$ 5.06	\$ 6.75	\$ 10.12	\$ 13.49	\$ 16.87	
2	8.0	\$ 2.70	\$ 5.40	\$ 8.10	\$ 10.80	\$ 16.19	\$ 21.59	\$ 26.99	
3	15.0	\$ 5.06	\$ 10.12	\$ 15.18	\$ 20.24	\$ 30.36	\$ 40.48	\$ 50.60	
4	25.0	\$ 8.43	\$ 16.87	\$ 25.30	\$ 33.74	\$ 50.60	\$ 67.47	\$ 84.34	
6	50.0	\$ 16.87	\$ 33.74	\$ 50.60	\$ 67.47	\$ 101.21	\$ 134.94	\$ 168.68	
8	80.0	\$ 26.99	\$ 53.98	\$ 80.96	\$ 107.95	\$ 161.93	\$ 215.90	\$ 269.88	
10	100.0	\$ 33.74	\$ 67.47	\$ 101.21	\$ 134.94	\$ 202.41	\$ 269.88	\$ 337.35	
12	125.0	\$ 42.17	\$ 84.34	\$ 126.51	\$ 168.68	\$ 253.01	\$ 337.35	\$ 421.69	
16	200.0	\$ 67.47	\$ 134.94	\$ 202.41	\$ 269.88	\$ 404.82	\$ 539.76	\$ 674.70	

(A) Based on American Water Works Association ("AWWA") flow rates. A 5/8-inch meter is equivalent to one (1) unit, whereas a 1-inch meter is equivalent to 2.5 units based on the amount of water that will flow through the meter size.

(B) Please note that the DSIC surcharge will be implemented on a monthly basis, after the approval of the Foundational Filing listing all of the projects; the completion of approved projects that are providing utility service to the customer; and the submission of the semi-annual filing documenting the completion, location, timing, and cost of the individual project. The maximum surcharge is 5.0%; however the surcharge will be implemented in semi-annual increments as the approved projects are placed in service. The Company may never reach the allowed maximum amount of 5.0%, and if it does, it will most likely take 24 - 36 months to do so.

DSIC SURCHARGE BILL IMPACT

NEW JERSEY-AMERICAN WATER COMPANY

BASIS FOR ALLOCATING METER COSTS TO CUSTOMER CLASSIFICATIONS

Meter Size	5/8" Equivalent	GMS		Resale		Exempt		Total	
		Number of Meters	Weighting	Number of Meters	Weighting	Number of Meters	Weighting**	Number of Meters	Weighting
5/8	1.0	547,801	547,801	1	1	16	14	547,818	547,816
3/4	1.5	18,327	27,491	0	0	2	3	18,329	27,494
1	2.5	44,030	110,075	2	5	4	9	44,036	110,089
1-1/2	5.0	4,219	21,095	0	0	0	0	4,219	21,095
2	8.0	12,154	97,232	3	24	8	55	12,165	97,311
3	15.0	939	14,085	4	60	3	39	946	14,184
4	25.0	762	19,050	18	450	5	108	785	19,608
6	50.0	194	9,700	28	1,400	2	86	224	11,186
8	80.0	65	5,200	13	1,040	6	414	84	6,654
10	100.0	26	2,600	2	200	2	172	30	2,972
12	125.0	4	500	0	0	0	0	4	500
16	200.0	0	0	0	0	1	172	1	172
Total		628,521	854,829	71	3,180	49	1,072	628,641	859,081

*Meter Count as of 9/30/2017
 **Weighting deducts impact of GRAFT

PROOF OF REVENUE (Monthly Charge)

Annual Revenue @ 5% cap	34,777,379	(a)
Monthly Revenue	2,898,115	(b)
Weighted No of Meters	859,081	(c)
5/8" Meter Charge	3.37	(d)=(b)/(c)

Meter Size	5/8" Equivalent	GMS		Resale		Exempt		Total
		Charge	Charge x Meters	Charge	Charge x Meters	Charge	Charge x Meters	
5/8	1.0	\$3.37	\$1,848,010	\$3.37	\$ 3	\$2.91	\$ 47	\$1,848,060
3/4	1.5	5.06	92,739	5.06	-	4.36	9	\$92,748
1	2.5	8.43	371,339	8.43	17	7.27	29	\$371,385
1-1/2	5.0	16.87	71,164	16.87	-	14.55	-	\$71,164
2	8.0	26.99	328,013	26.99	81	23.27	186	\$328,280
3	15.0	50.60	47,516	50.60	202	43.64	131	\$47,849
4	25.0	84.34	64,265	84.34	1,518	72.73	364	\$66,147
6	50.0	168.68	32,723	168.68	4,723	145.45	291	\$37,737
8	80.0	269.88	17,542	269.88	3,508	232.72	1,396	\$22,447
10	100.0	337.35	8,771	337.35	675	290.90	582	\$10,028
12	125.0	421.69	1,687	421.69	-	363.63	-	\$1,687
16	200.0	674.70	-	674.70	-	581.81	582	\$582
Total			\$2,883,769		\$10,728		\$3,616	\$2,898,113

Notes:
 (a) Total Base Water Revenue - Settlement (included PWAC) 695,547,570

5% Cap \$34,777,379

Exhibit A

New Jersey American Water Company, Inc.
2018 DSIC Foundational Filing
Appendix C

ID	District	Municipality	Project Title	NAAW Funded (dollars)	Project Type	Prop. Length (feet)	Prop. Dia. (inches)	Proposed Pipe Material	Decade Installed	Ex. Dia. (inches)	Existing Pipe Material	Accelerated Asset Investment Category	Est. Project Duration	Est. In-Service Quarter	2018 GAP	Previously Approved Under 2015 Foundational Filing
5269	Coastal Operating Area	ABERDEEN	Aberdeen - Imperia Place Main Replacement	\$ 168,045	Replace	1,163	8.00	PVC	1960's	8.00	Unknown	Safety and Reliability	60	2020Q3	No	Yes
5296	Coastal Operating Area	ABERDEEN	Aberdeen - Alden Ct Main Replacement	\$ 56,250	Replace	375	6.00	PVC	1960's	8.00	Unknown	Safety and Reliability	30	2018Q4	Yes	Yes
5297	Coastal Operating Area	ABERDEEN	Aberdeen - Line Road Main Replacement	\$ 700,000	Replace	6,051	12.00	PVC	1960's	4	Unknown	Safety and Reliability	120	2020Q3	No	Yes
6042	Coastal Operating Area	ABERDEEN	Overlea Lane Main Replacement	\$ 210,000	Replace	1,400	8.00	PVC	1960's	8	Cast Iron	Safety and Reliability	60	Complete	Yes	Yes
6044	Coastal Operating Area	ABERDEEN	Ormont Lane Main Replacement	\$ 112,500	Replace	750	8.00	PVC	1960's	4	Unknown	Safety and Reliability	60	Complete	Yes	Yes
6046	Coastal Operating Area	ABERDEEN	Oaklyn Lane Main Replacement	\$ 97,500	Replace	650	8.00	PVC	1960's	6	Cast Iron	Safety and Reliability/Structural	60	Complete	Yes	Yes
6047	Coastal Operating Area	ABERDEEN	Opal Place Main Replacement	\$ 31,500	Replace	210	6.00	PVC	1960's	8	Ductile Iron	Safety and Reliability	30	Complete	Yes	Yes
6053	Coastal Operating Area	ABERDEEN	Weston Place Main Replacement	\$ 88,500	Replace	590	8.00	PVC	1960's	8	Cast Iron	Safety and Reliability	60	Complete	Yes	Yes
6079	Coastal Operating Area	ABERDEEN	June Place Main Replacement	\$ 112,500	Replace	750	6.00	PVC	1960's	8	Stove Pipe	Safety and Reliability/Structural	60	2019Q1	No	Yes
6080	Coastal Operating Area	ABERDEEN	Juniper Place Main Replacement	\$ 225,000	Replace	1,500	8.00	PVC	1960's	6	Stove Pipe	Safety and Reliability	60	2019Q1	No	Yes
6081	Coastal Operating Area	ABERDEEN	Jordan Place Main Replacement	\$ 30,000	Replace	200	6.00	PVC	1960's	6	Stove Pipe	Safety and Reliability	30	2019Q1	No	Yes
6084	Coastal Operating Area	ABERDEEN	Jubilee Circle Main Replacement	\$ 165,000	Replace	1,100	6.00	PVC	1960's	6	Stove Pipe	Safety and Reliability	60	2019Q1	No	Yes
6159	Coastal Operating Area	ABERDEEN	Duda Lane Main Replacement	\$ 114,750	Replace	765	6.00	PVC	1960's	6	Cast Iron	Safety and Reliability	60	2019Q1	No	Yes
8167	Coastal Operating Area	ABERDEEN	Cornell Way 6" AC	\$ 60,000	Replace	300	8.00	PVC	1960	6	AC	Safety and Reliability/Structural	30	2020Q3	No	No
8168	Coastal Operating Area	ABERDEEN	Crest Way 3" CI	\$ 40,000	Replace	200	8.00	PVC	1960	3	CI	Safety and Reliability/Structural	30	2020Q3	No	No
8169	Coastal Operating Area	ABERDEEN	Invar Way 6" AC	\$ 44,000	Replace	220	8.00	Ductile Iron	1960	6	AC	Safety and Reliability/Structural	30	2020Q3	No	No
8171	Coastal Operating Area	ABERDEEN	Idlewild Ln Btwn Llyod Rd. & Ingress Way	\$ 64,000	Replace	320	10.00	PVC	1960	6	AC	Safety and Reliability/Structural	30	2020Q3	No	No
8173	Coastal Operating Area	ABERDEEN	Ivins Ct. 6" AC	\$ 120,000	Replace	600	8.00	PVC	1960	6	AC	Safety and Reliability/Structural	60	2020Q3	No	No
8905	Coastal Operating Area	ABERDEEN	Blair Rd. 8"AC	\$ 160,000	Replace	800	8.00	PVC	1960	8	AC	Safety and Reliability/Structural	60	2020Q3	No	No
9765	Coastal Operating Area	ABERDEEN	Lloyd Rd, High Pressure Main Replacement from Rt 34 to Warren Dr	\$ 430,000	Replace	2,150	8.00	PVC	1920	6	CI	Safety and Reliability/Structural	90	2019Q3	No	No
9766	Coastal Operating Area	ABERDEEN	Lloyd Rd, Low Pressure Main Replacement from Oxford to the Marlboro Interconnect	\$ 540,000	Replace	2,700	8.00	PVC	1960	6	AC	Crossing Risk Reduction	90	2019Q3	No	No
5508	Coastal Operating Area	ABSECON	Osage Lane from Alameda Avenue to Seminole Avenue	\$ 125,000	Replace	479	6.00	Ductile Iron	1940's	4	Cast Iron	Water Quality	30	2021Q3	No	Yes
5509	Coastal Operating Area	ABSECON	Richmond Circle from Shady Lane to the end	\$ 93,250	Replace	373	6.00	Ductile Iron	1910's	4	bestos Cem	Water Quality	30	2021Q3	No	Yes
6056	Coastal Operating Area	ABSECON	Berkley Avenue between Shore Road and Euclid Drive	\$ 112,500	Replace	611	8.00	Ductile Iron	Unknown	6	bestos Cem	System Flows and Pressure	60	2021Q3	No	Yes
6057	Coastal Operating Area	ABSECON	Cordova Drive between Shore Road and Lisbon Ave	\$ 50,000	Replace	255	6.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	30	2021Q3	No	Yes
6059	Coastal Operating Area	ABSECON	Davis Avenue between Amy Lane and Shore Road	\$ 81,250	Replace	127	8.00	Ductile Iron	Unknown	6	bestos Cem	Safety and Reliability/Structural	30	2021Q3	No	Yes
6064	Coastal Operating Area	ABSECON	W. Church Street between 12th Street and New Road	\$ 100,000	Replace	300	8.00	Ductile Iron	Unknown	4	Ductile Iron	System Flows and Pressure	30	2021Q3	No	Yes
6065	Coastal Operating Area	ABSECON	Alameda Avenue between New Road and Mill Road	\$ 325,000	Replace	1,233	8.00	Ductile Iron	Unknown	6	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes
5915	Coastal Operating Area	ALLENHURST	Elberon Ave	\$ 315,000	Replace	1,499	8.00	Ductile Iron	1910's	6	Ivanized St	Water Quality	60	2019Q1	No	Yes
5916	Coastal Operating Area	ALLENHURST	Cedar ave	\$ 420,000	Replace	2,400	8.00	Ductile Iron	Unknown	12.00	Unknown	System Flows and Pressure	90	2019Q1	No	Yes
6979	Coastal Operating Area	ALLENHURST	Cedar Ave Railroad Crossing	\$ 90,000	Replace	550	8.00	Ductile Iron	1910's	Unknown	Unknown	System Flows and Pressure	60	2019Q1	No	Yes
7158	Coastal Operating Area	ALLENHURST	Allen Ave - Main Replacement of 4-inch CI with 8-inch DI	\$ 540,000	Replace	3,000	8.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	90	2019Q1	No	Yes
7755	Coastal Operating Area	ALLENHURST	Corties Ave. 4" CI	\$ 360,000	Replace	3,503	8.00	Ductile Iron	1980	4	CI	Safety and Reliability/Structural	90	2021Q1	No	No
9576	Coastal Operating Area	ALLENHURST	Main st.	\$ 385,000	Replace	3,768	12.00	Ductile Iron	1940	4	CI	Safety and Reliability	90	2019Q1	No	No
7774	Coastal Operating Area	ASBURY PARK	Atlantic Ave. 4" CI	\$ 50,000	Replace	500	8.00	Ductile Iron	1940	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7775	Coastal Operating Area	ASBURY PARK	Atkins Ave 4" CI	\$ 60,000	Replace	600	8.00	Ductile Iron	1930	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7776	Coastal Operating Area	ASBURY PARK	Mattison Ave. 4" CI & 2.5 CI	\$ 150,000	Replace	1,500	8.00	Ductile Iron	1940	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No

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7777	Coastal Operating Area	ASBURY PARK	Sewall Ave. 4" CI	\$ 110,000	Replace	1,100	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7778	Coastal Operating Area	ASBURY PARK	Sewall Ave. 4" CI BTWN Terminus & Main St.	\$ 30,000	Replace	300	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	30	2019Q4	No	No
7779	Coastal Operating Area	ASBURY PARK	Monroe Ave. 4" CI	\$ 50,000	Replace	500	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7780	Coastal Operating Area	ASBURY PARK	1st Ave 4" CI BTWN Heck st. & Main St.	\$ 200,000	Replace	2,000	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	90	2019Q3	No	No
7781	Coastal Operating Area	ASBURY PARK	3rd Ave. 4" CI & 6" CI	\$ 1,120,000	Replace	5,100	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	120	2019Q4	No	No
7782	Coastal Operating Area	ASBURY PARK	Prospectv Ave. 4" CI & 6" CI	\$ 220,000	Replace	2,200	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	90	2019Q4	No	No
7783	Coastal Operating Area	ASBURY PARK	Dunlewy Street 4" CI	\$ 110,000	Replace	1,100	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7784	Coastal Operating Area	ASBURY PARK	Winn Ave. 2" CI	\$ 40,000	Replace	400	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	30	2019Q4	No	No
7785	Coastal Operating Area	ASBURY PARK	Drummond Ave. 2" CI	\$ 70,000	Replace	700	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7786	Coastal Operating Area	ASBURY PARK	Central Ave 2" CI BTWN 4th Ave. & Terminus.	\$ 20,000	Replace	200	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	30	2019Q4	No	No
7787	Coastal Operating Area	ASBURY PARK	2nd Ave. 4" CI	\$ 110,000	Replace	1,100	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7788	Coastal Operating Area	ASBURY PARK	Comstock Street 2" GALV BTWN 1st & 2nd. Ave.	\$ 40,000	Replace	400	8.00	Ductile Iron	1900	2	GALV	Safety and Reliability/Structural	30	2019Q4	No	No
7789	Coastal Operating Area	ASBURY PARK	Comstock Street 2" GALV & 6" CI BTWN 5th Ave & Terminus	\$ 150,000	Replace	15,000	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	120	2019Q4	No	No
7790	Coastal Operating Area	ASBURY PARK	Bond Street 4" CI	\$ 50,000	Replace	500	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
7791	Coastal Operating Area	ASBURY PARK	Summerfield Ave. 2" CI	\$ 40,000	Replace	400	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	30	2019Q4	No	No
7795	Coastal Operating Area	ASBURY PARK	7th Ave 4" CI & 6" CI	\$ 600,000	Replace	3,000	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural	90	2019Q4	No	No
8327	Coastal Operating Area	ASBURY PARK	Sunset Dr. 6" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	60	2019Q4	No	No
8331	Coastal Operating Area	ASBURY PARK	5th Ave 6" CI, 4" CI & 8" CI	\$ 600,000	Replace	3,000	8.00	Ductile Iron	1920	8	CI	Safety and Reliability/Structural	90	2019Q3	No	No
8332	Coastal Operating Area	ASBURY PARK	Sunset Ave. 6" CI & 8" CI	\$ 1,740,000	Replace	8,200	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	120	2019Q3	No	No
8333	Coastal Operating Area	ASBURY PARK	Central Ave. 6" CI	\$ 280,000	Replace	1,400	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	60	2019Q4	No	No
8334	Coastal Operating Area	ASBURY PARK	Sewall Ave. 6" CI BTWN Prospect Ave. & Ridge Ave.	\$ 180,000	Replace	900	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	60	2019Q4	No	No
8335	Coastal Operating Area	ASBURY PARK	Pine St. 6" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
8337	Coastal Operating Area	ASBURY PARK	4th Ave. 6" CI BTWN Bergh St. & Memorial Dr.	\$ 500,000	Replace	2,500	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	90	2019Q3	No	No
8340	Coastal Operating Area	ASBURY PARK	Monroe Ave. 6" CI BTWN Prospect Ave. & Memorial Dr.	\$ 400,000	Replace	2,000	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	90	2019Q4	No	No
8341	Coastal Operating Area	ASBURY PARK	Monroe Ave. 6" CI BTWN Main St. & Park Hall Pl.	\$ 60,000	Replace	300	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	30	2019Q3	No	No
8358	Coastal Operating Area	ASBURY PARK	Bangs Ave. 6" CI & 6" AC	\$ 304,000	Replace	1,520	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
8366	Coastal Operating Area	ASBURY PARK	Mattison Ave. 6" CI	\$ 160,000	Replace	800	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
8367	Coastal Operating Area	ASBURY PARK	Jefferson Ave. 6" CI	\$ 80,000	Replace	400	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural	30	2019Q3	No	No
8368	Coastal Operating Area	ASBURY PARK	Monmouth Ave. 6" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
8369	Coastal Operating Area	ASBURY PARK	Bangs Ave 6" CI BTWN Memorial Dr. & Comstock St.	\$ 180,000	Replace	900	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural System Flows and	60	2019Q3	No	No
110	Southwest Operating Area	AUDUBON	Audubon - South Logan Avenue and South Haviland Avenue	\$ 361,000	Replace	1,900	8.00	Ductile Iron	1930's	4	Cast Iron	Pressure System Flows and	60	2021Q1	No	Yes
419	Southwest Operating Area	AUDUBON	Audubon - Wyoming Avenue - Audubon Avenue to Washington Terrace	\$ 608,000	Replace	3,200	8.00	Ductile Iron	1930's	2	Cast Iron	Pressure System Flows and	90	2019Q3	No	Yes
9477	Southwest Operating Area	AUDUBON	Lake Drive	\$ 225,000	Replace	1,097	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
9703	Southwest Operating Area	AUDUBON	Merchant Street	\$ 450,000	Replace	1,587	8.00	Ductile Iron	1900	6	CI	Pressure System Flows and	60	2019Q1	No	No
9815	Southwest Operating Area	AUDUBON	Audubon - RR - Pine Street @ Atlantic Avenue	\$ 250,000	Replace	92	8.00	Ductile Iron	1900	4	CI	Crossing Risk Reduction	30	2019Q4	No	No
9816	Southwest Operating Area	AUDUBON	Audubon - East Gralsbury Avenue - Between East Atlantic Avenue to South Barrett Avenue	\$ 480,000	Replace	1,946	8.00	Ductile Iron	1900	4	CI	Safety and Reliability	60	2020Q3	No	No
8351	Coastal Operating Area	BAY HEAD	Holly Ave, 6" CI	\$ 28,000	Replace	174	6.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural	30	2019Q1	No	No

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8352	Coastal Operating Area	BAY HEAD	S Park Ave, 6" CI, AC	\$ 240,000	Replace	1,496	6.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural	60	2019Q1	No	No
8354	Coastal Operating Area	BAY HEAD	W Lake Ave, 6" AC, DI, CI	\$ 360,000	Replace	2,244	6.00	Ductile Iron	1930	4	CI	Safety and Reliability/Structural	90	2019Q1	No	No
8373	Coastal Operating Area	BAY HEAD	Willow Dr, 6" AC	\$ 52,800	Replace	328	6.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural	30	2019Q1	No	No
8375	Coastal Operating Area	BAY HEAD	Grove Ave, 6" CI, DI	\$ 144,000	Replace	885	6.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural	60	2019Q1	No	No
8425	Coastal Operating Area	BAY HEAD	Club Dr, 6" AC, CI	\$ 204,000	Replace	1,274	6.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural	60	2019Q1	No	No
8426	Coastal Operating Area	BAY HEAD	Meadow Ave, 6" AC	\$ 64,000	Replace	403	6.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural	30	2019Q1	No	No
8427	Coastal Operating Area	BAY HEAD	Bayberry Ln, 6" AC	\$ 24,800	Replace	155	6.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural	30	2019Q1	No	No
6713	North Operating Area	BEDMINSTER	BEDMINSTER - Route 206 between Somerville Rd and Lamington Rd	\$ 300,000	Replace	1,500	8.00	Ductile Iron	1950's	Unknown	Unknown	Safety and Reliability	60	2021Q3	No	Yes
539	North Operating Area	BERNARDS TWP	Bernards Twp - South Maple Ave, from Owens to Prospect	\$ 1,500,000	Replace	5,100	20.00	PVC	1980's	2	Ivanized St	Safety and Reliability/Structural	120	Complete	Yes	Yes
5556	North Operating Area	BERNARDS TWP	Prospect Avenue, S. Maple to Manchester Dr.	\$ 452,200	Replace	1,160	20.00	PVC	Unknown	4	Cast Iron	Safety and Reliability/Structural	60	2021Q3	No	Yes
6322	North Operating Area	BERNARDS TWP	MT AIRY RD BETWEEN MEEKER AND STACY	\$ 383,000	Replace	1,700	12.00	Ductile Iron	1970's	6	Cast Iron	System Flows and Pressure	60	2020Q1	No	Yes
6782	North Operating Area	BERNARDS TWP	BERNARDS TWP - Lyons Rd from Lyons Pl to Goltra Dr	\$ 1,280,000	Replace	6,400	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability	120	2020Q1	No	Yes
6798	North Operating Area	BERNARDS TWP	BERNARDS TWP - S Maple Ave from Hilltop to Owens	\$ 605,000	Replace	2,800	8.00	PVC	Unknown	Unknown	Unknown	Safety and Reliability	90	Complete	Yes	Yes
6819	North Operating Area	BERNARDS TWP	BERNARDS TWP - Valley Rd from Passaic Rivier (Long Hill Twp) to tank easement west of Elizabeth	\$ 1,305,000	Replace	5,800	12.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	120	2020Q3	No	Yes
7684	North Operating Area	BERNARDS TWP	Orchard Pl & Southerd Pl	\$ 389,000	Replace	1,948	6.00	Ductile Iron	1950	6	CI	Water Quality	60	2019Q1	No	No
9776	North Operating Area	BERNARDS TWP	Bernards Twp - From discharge of Basking Ridge Booster station to N. Maple Avenue	\$ 495,000	Replace	937	20.00	PVC	1970	12	DI	System Flows and Pressure	60	2021Q3	No	No
9785	North Operating Area	BERNARDS TWP	Martinsville Rd / Liberty Corner Rd over Rte 78	\$ 500,000	Rehab	296	14.00	PVC	1960	12	CI	Safety and Reliability/Structural	30	2019Q3	No	No
6298	North Operating Area	BERNARDSVILLE	Olcott Rd from Anderson Hill Road to Childsworth Ave	\$ 285,000	Replace	1,265	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	2019Q1	No	Yes
6305	North Operating Area	BERNARDSVILLE	Anderson Rd from Chestnut Ave to Seney Drive	\$ 596,250	Replace	2,650	12.00	Ductile Iron	1960's	4	Cast Iron	System Flows and Pressure	90	2019Q3	No	Yes
6306	North Operating Area	BERNARDSVILLE	Anderson Hill Rd from Olcott Ave to Mill Street	\$ 145,000	Replace	725	12.00	Ductile Iron	1980's	6	Cast Iron	System Flows and Pressure	60	2020Q1	No	Yes
6320	North Operating Area	BERNARDSVILLE	MT AIRY RD FROM PROSPECT TO MINEBROOK	\$ 600,000	Replace	800	12.00	Ductile Iron	1930's	12	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes
8968	North Operating Area	BERNARDSVILLE	Twin Lakes - Hillside Ave & Mountain Ave from Hillside to Lakeview	\$ 170,000	Replace	850	6.00	Ductile Iron	2000	4	UNKNOWN	Safety and Reliability/Structural	60	2019Q3	No	No
9780	North Operating Area	BERNARDSVILLE	Mendham Rd from Tower Mnt Discharge side to Lloyd Road	\$ 1,144,000	Replace	2,674	16.00	Ductile Iron	1990	8	CI	System Flows and Pressure	90	2021Q3	No	No
9789	North Operating Area	BERNARDSVILLE	Bernardsville Boro - From Morristown Road at Childs Road to suction of Tower Mountain booster station	\$ 3,520,000	Replace	7,790	16.00	Ductile Iron	1940	8	AC	System Flows and Pressure	120	2020Q3	No	No
9792	North Operating Area	BERNARDSVILLE	Bernardsville Boro - From Timber Rock Trail at Flintlock Court in Mine Mt Road and Seney Drive to Old Fort Road	\$ 1,628,000	Replace	3,684	16.00	Ductile Iron	1950	8	CI	System Flows and Pressure	90	2021Q3	No	No
7679	Southwest Operating Area	BEVERLY	Laurel Street, Spruce St, Putnam St, Pine St	\$ 800,000	Replace	4,056	8.00	Ductile Iron	1930	4	CI	System Flows and Pressure	120	2020Q3	No	No
7298	Central Operating Area	BOUND BROOK BOROUGH	Daley Pl Main replacement	\$ 75,000	Replace	420	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	30	2020Q3	No	No
9016	Central Operating Area	BOUND BROOK BOROUGH	Codrington Pl Main Replacement	\$ 288,000	Replace	797	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2019Q1	No	No
9267	Central Operating Area	BOUND BROOK BOROUGH	Helfin St. Main Replacement	\$ 200,000	Replace	720	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2021Q4	No	No
9603	Central Operating Area	BOUND BROOK BOROUGH	Verona Pl Main Replacement	\$ 236,000	Replace	463	8.00	Ductile Iron	1950	6	CI	Safety and Reliability	30	2019Q1	No	No
7718	Coastal Operating Area	BRADLEY BEACH	Pacific Avenue- 4" CI & 6" CI	\$ 200,000	Replace	1,000	8.00	Ductile Iron	1900	4	CI	Safety and Reliability/Structural	60	2020Q4	No	No
7720	Coastal Operating Area	BRADLEY BEACH	Atlantic Ave. 2" and 2.5"	\$ 132,000	Replace	660	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2020Q4	No	No
7723	Coastal Operating Area	BRADLEY BEACH	Madison Ave. 2"CI	\$ 700,000	Replace	3,500	8.00	Ductile Iron	1930	2	CI	Safety and Reliability/Structural	90	2020Q4	No	No
7724	Coastal Operating Area	BRADLEY BEACH	3rd Ave 6" CI	\$ 300,000	Replace	1,500	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	60	2020Q1	No	No
7725	Coastal Operating Area	BRADLEY BEACH	4th Ave. 6" CI	\$ 1,150,000	Replace	5,000	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	120	2020Q4	No	No
7726	Coastal Operating Area	BRADLEY BEACH	5th Ave. 6" CI & 2" CI	\$ 800,000	Replace	4,000	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	120	2020Q4	No	No
7728	Coastal Operating Area	BRADLEY BEACH	Central Ave. 2" CI	\$ 80,000	Replace	400	8.00	Ductile Iron	1900	2	CI	Safety and Reliability/Structural	30	2020Q1	No	No

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7729	Coastal Operating Area	BRADLEY BEACH	Beach Ave. 2" CI	\$ 30,000	Replace	300	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	30	2020Q1	No	No
7730	Coastal Operating Area	BRADLEY BEACH	Hammond Ave. 2" CI BTWN Brinley Ave. & 4th Ave.	\$ 148,000	Replace	740	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2020Q4	No	No
7731	Coastal Operating Area	BRADLEY BEACH	Hammond Ave. 2" CI BTWN Newark Ave. & Brinley Ave.	\$ 308,000	Replace	1,540	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2020Q1	No	No
7732	Coastal Operating Area	BRADLEY BEACH	Fletcher Lake Ave. 2.25" CI BTWN Evergreen Ave. & 2nd Ave.	\$ 76,000	Replace	380	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	30	2020Q4	No	No
7733	Coastal Operating Area	BRADLEY BEACH	Fletcher Lake Ave. 2" CI, 2.25" CI, 6" CI & 6" AC BTWN 3rd Ave & Lake Terrace (RT-18)	\$ 560,000	Replace	2,800	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	90	2020Q1	No	No
7734	Coastal Operating Area	BRADLEY BEACH	3rd Ave 2" GALV	\$ 80,000	Replace	400	8.00	Ductile Iron	1920	2	GALV	Safety and Reliability/Structural	30	2020Q1	No	No
7735	Coastal Operating Area	BRADLEY BEACH	Madison Ave. 1" GALV & 2" CI BTWN Park Place & Lake Terrace	\$ 120,000	Replace	600	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2020Q1	No	No
7736	Coastal Operating Area	BRADLEY BEACH	Kent Ave. 2" GALV	\$ 60,000	Replace	600	8.00	Ductile Iron	1920	2	GALV	Safety and Reliability/Structural	60	2020Q1	No	No
7737	Coastal Operating Area	BRADLEY BEACH	Lake Terrace / RT-18 2" GALV BTWN Beach Ave. & Fletcher Lake	\$ 260,000	Replace	1,300	8.00	Ductile Iron	1920	2	GALV	Safety and Reliability/Structural	60	2020Q1	No	No
7738	Coastal Operating Area	BRADLEY BEACH	Lake Terrace/ RT-18 2.5" CI & 6" CI	\$ 168,000	Replace	840	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2020Q4	No	No
8439	Coastal Operating Area	BRICK TWP	Baytree Ct, 6" AC	\$ 40,000	Replace	250	6.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	30	2020Q1	No	No
70	Central Operating Area	BRIDGEWATER TWP	Bridgewater - Morgan laRt 22 to Union ave	\$ 462,600	Replace	2,570	16.00	Ductile Iron	1960's	16	Cast Iron	Safety and Reliability/Structural	90	2021Q1	No	Yes
5779	Central Operating Area	BRIDGEWATER TWP	Finderne ave 16" A/C main replacement	\$ 400,000	Replace	1,300	16.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	2020Q1	No	Yes
5792	Central Operating Area	BRIDGEWATER TWP	Vosseller Ave Main Replacement	\$ 400,000	Replace	1,800	8.00	Ductile Iron	1930's	4	Cast Iron	Water Quality	60	2020Q3	No	Yes
7066	Central Operating Area	BRIDGEWATER TWP	Marie Avenue Main replacement	\$ 475,000	Replace	2,100	8.00	Ductile Iron	1950's	Unknown	Unknown	Safety and Reliability/Structural	90	2021Q1	No	Yes
7614	Central Operating Area	BRIDGEWATER TWP	Cartret rd Main replacement	\$ 1,600,000	Replace	4,026	8.00	Ductile Iron	1960	8	CI	Safety and Reliability/Structural	120	2020Q3	No	No
9641	Central Operating Area	BRIDGEWATER TWP	Thompson Ave Main Replacement	\$ 800,000	Replace	1,200	24.00	Ductile Iron	1980	14	CEM	Safety and Reliability/Structural	60	2019Q3	No	No
9731	Central Operating Area	BRIDGEWATER TWP	Bridgewater Ave. Main Replacement	\$ 550,000	Replace	1,462	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
315	Southwest Operating Area	CAMDEN	Camden - Cambridge Avenue - River Road to Harrison Avenue	\$ 228,000	Replace	1,200	8.00	Ductile Iron	1920's	2	Ivanized St	Pressure System Flows and	60	2021Q1	No	Yes
316	Southwest Operating Area	CAMDEN	Camden - Cramer Street and 28th Street - 27th Street to 30th Street	\$ 266,000	Replace	1,400	8.00	Ductile Iron	1920's	2	Ivanized St	Pressure System Flows and	60	2021Q1	No	Yes
317	Southwest Operating Area	CAMDEN	Camden - Saunders Street - 27th Street to 30th Street	\$ 228,000	Replace	1,200	8.00	Ductile Iron	1920's	4	Cast Iron	Pressure System Flows and	60	2021Q3	No	Yes
5828	Southwest Operating Area	CAMDEN	Camden - Concord Avenue - North 27th Street to North 29th Street	\$ 209,000	Replace	1,100	8.00	Ductile Iron	1900's	4	Cast Iron	Pressure System Flows and	60	2020Q3	No	Yes
5830	Southwest Operating Area	CAMDEN	Camden - Garfield Avenue - North 27th Street to North 29th Street	\$ 209,000	Replace	1,100	8.00	Ductile Iron	1900's	4	Cast Iron	Pressure System Flows and	60	2020Q3	No	Yes
5831	Southwest Operating Area	CAMDEN	Camden - Arthur Avenue - North 27th Street to North 29th Street	\$ 209,000	Replace	1,100	8.00	Ductile Iron	1940's	4	Cast Iron	Pressure System Flows and	60	2020Q3	No	Yes
5832	Southwest Operating Area	CAMDEN	Camden - Sherman Avenue - North 27th Street to North 29th Street	\$ 304,000	Replace	1,600	8.00	Ductile Iron	2000's	6	Cast Iron	Pressure System Flows and	60	2020Q3	No	Yes
5846	Southwest Operating Area	CAMDEN	Camden - North Dudley Street / Morrison Street - North 30th Street to Federal Street	\$ 313,500	Replace	1,650	8.00	Ductile Iron	1900's	6	Cast Iron	Pressure System Flows and	60	2020Q1	No	Yes
5847	Southwest Operating Area	CAMDEN	Camden - Church Street - Westfield Avenue to Federal Street	\$ 123,500	Replace	650	8.00	Ductile Iron	1900's	6	Jestos Cem	Pressure System Flows and	60	2020Q1	No	Yes
5848	Southwest Operating Area	CAMDEN	Camden - North 35th Street - Lemuel Avenue to Fairfax Drive	\$ 247,000	Replace	1,300	8.00	Ductile Iron	1920's	8	Jestos Cem	Pressure System Flows and	60	2020Q3	No	Yes
5862	Southwest Operating Area	CAMDEN	Camden - Mickie Street and South 26th Street - Marlton Avenue to Federal Street	\$ 247,000	Replace	1,300	8.00	Ductile Iron	1900's	2	Jestos Cem	Pressure System Flows and	60	2019Q1	No	Yes
5864	Southwest Operating Area	CAMDEN	Camden - Merril Avenue - North 36th Street to North 34th Street	\$ 100,700	Replace	530	8.00	Ductile Iron	1930's	2	PVC	Pressure System Flows and	60	2021Q3	No	Yes
5865	Southwest Operating Area	CAMDEN	Camden - North 34th Street - Merril Avenue to Rosedale Avenue	\$ 118,750	Replace	625	8.00	Ductile Iron	1930's	12	Jestos Cem	Pressure System Flows and	60	2021Q3	No	Yes
5866	Southwest Operating Area	CAMDEN	Camden - River Avenue - East State Street to North 27th Street	\$ 608,000	Replace	3,200	12.00	Ductile Iron	1920's	6	Cast Iron	Pressure System Flows and	90	2018Q4	No	Yes
5867	Southwest Operating Area	CAMDEN	Camden - North 35th Street - Merril Avenue to Rosedale Avenue	\$ 110,200	Replace	580	8.00	Ductile Iron	1930's	8	Cast Iron	Pressure System Flows and	60	2021Q3	No	Yes
5873	Southwest Operating Area	CAMDEN	Camden - N 28th Street - Arthur Avenue to Concord Avenue	\$ 142,500	Replace	750	6.00	Ductile Iron	1940's	6	Cast Iron	Pressure Relocation/Opportunity	60	2020Q3	No	Yes
5880	Southwest Operating Area	CAMDEN	Camden - E State St - River Ave to 12" main south of valve VCA-425	\$ 130,000	Replace	650	12.00	Ductile Iron	1960's	2	Jestos Cem	Pressure System Flows and	60	2018Q4	No	Yes
5887	Southwest Operating Area	CAMDEN	Camden - Carman Street - Marlton Avenue to Baird Blvd	\$ 289,880	Replace	1,520	8.00	Ductile Iron	1900's	6.00	Jestos Cem	Pressure System Flows and	60	2019Q1	No	Yes
5888	Southwest Operating Area	CAMDEN	Camden - South 24th Street - Federal Street to Marlton Avenue	\$ 148,200	Replace	780	8.00	Ductile Iron	1900's	6	Jestos Cem	Pressure System Flows and	60	2019Q1	No	Yes

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Id	District	Municipality	Project Title	NAWA Funded (dollars)	Project Type	Prop. Length (feet)	Prop. Dia. (Inches)	Proposed Pipe Material	Decade Installed	Ex. Dia. (Inches)	Existing Pipe Material	Accelerated Asset Investment Category	Est. Project Duration	Est. In-Service Quarter	2018 GAP	Previously Approved Under 2013 Foundational Filing
5892	Southwest Operating Area	CAMDEN	Camden - Rowe Street - North 32nd Street to North 35th Street	\$ 171,000	Replace	900	8.00	Ductile Iron	1920's	2	Ivanized St	System Flows and Pressure	60	2020Q3	No	Yes
5894	Southwest Operating Area	CAMDEN	Camden - Rosedale Avenue - North 33rd Street to North 36th Street	\$ 117,800	Replace	620	8.00	Ductile Iron	1930's	4	Unknown	System Flows and Pressure	60	2021Q3	No	Yes
7556	Southwest Operating Area	CAMDEN	Marlton Avenue, Berwick Avenue, Morse St, Sewell Street, Westminster Avenue	\$ 350,000	Replace	1,735	8.00	Ductile Iron	1900	6	CI	System Flows and Pressure	60	2019Q3	No	No
8901	Southwest Operating Area	CAMDEN	Camden - RRX at 36th Street & River Avenue	\$ 1,500,000	Replace	580	8.00	Ductile Iron	1960	8	CI	System Flows and Pressure	60	2020Q4	No	No
9702	Southwest Operating Area	CAMDEN	Leonard Avenue and 28th Street	\$ 400,000	Replace	707	8.00	Ductile Iron	1900	8	CI	System Flows and Pressure	60	2020Q1	No	No
9745	Southwest Operating Area	CAMDEN	Rosedale Avenue, 33rd Street, 34th Street, 35th Street	\$ 500,000	Replace	2,437	8.00	Ductile Iron	1930	4	CI	System Flows and Pressure	90	2021Q3	No	No
9747	Southwest Operating Area	CAMDEN	Fremont Ave, 32nd Street, 33rd Street	\$ 640,000	Replace	3,208	8.00	Ductile Iron	1920	4	CI	System Flows and Pressure	90	2021Q1	No	No
9748	Southwest Operating Area	CAMDEN	35th Street - Federal Street to Highland Avenue	\$ 230,000	Replace	1,166	8.00	Ductile Iron	1920	4	CI	System Flows and Pressure	60	2021Q1	No	No
9749	Southwest Operating Area	CAMDEN	Hayes Avenue, North 19th Street, and North 34th Street	\$ 1,600,000	Replace	7,000	12.00	Ductile Iron	1900	4	CI	System Flows and Pressure	120	2020Q3	No	No
9770	Southwest Operating Area	CAMDEN	Westfield Avenue, North 27th Street, Federal Street	\$ 325,000	Replace	540	12.00	Ductile Iron	1900	6	CI	Relocation/Opportunity	60	2019Q3	No	No
7601	Southwest Operating Area	CARNEYS POINT	Carneys Point - Shell Rd	\$ 750,000	Replace	4,623	12.00	Ductile Iron	1930	6	CI	Relocation/Opportunity	120	2019Q3	No	No
9479	Southwest Operating Area	CARNEYS POINT	South Golfwood Road	\$ 50,000	Replace	500	2.00	HDPE	1950	1	PE	Safety and Reliability/Structural	60	2019Q1	No	No
9735	Southwest Operating Area	CARNEYS POINT	Shell Road (VCP-412 to Hawks Bridge Road)	\$ 1,500,000	Replace	6,507	8.00	Ductile Iron	1960	8	CI	Relocation/Opportunity	120	2019Q3	No	No
6865	North Operating Area	CHATHAM TWP	CHATHAM - River Rd from Fairmont to Henry	\$ 740,000	Replace	3,700	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability	90	2021Q1	No	Yes
9549	North Operating Area	CHATHAM TWP	Cypress Road & Woodlawn Drive	\$ 240,000	Replace	952	8.00	Ductile Iron	1930	2	CI	Safety and Reliability/Structural	60	2019Q1	No	No
9631	North Operating Area	CHATHAM TWP	Park View Rd from Southern Blvd to cul-de-sac	\$ 228,000	Replace	1,015	8.00	Ductile Iron	1970	6	CI	Safety and Reliability/Structural	60	2019Q1	No	No
5330	Southwest Operating Area	CHERRY HILL	Cherry Hill - Utah Avenue - Kings Highway to Dead End	\$ 87,400	Replace	427	4.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	30	2018Q4	No	Yes
7606	Southwest Operating Area	CHERRY HILL	Cherry Hill - Bowling Green Drive (North & South) and Bryant Road	\$ 1,100,000	Replace	5,353	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	120	2020Q3	No	No
9696	Southwest Operating Area	CHERRY HILL	State Highway 70 - Brookmead Road to Ranaldo Terrace	\$ 750,000	Replace	3,124	12.00	Ductile Iron	1950	12	AC	Relocation/Opportunity	90	2020Q3	No	No
9697	Southwest Operating Area	CHERRY HILL	State Highway 70 - Grove Street to Maine Avenue	\$ 1,950,000	Replace	7,973	12.00	Ductile Iron	1960	8	CI	Relocation/Opportunity	120	2020Q3	No	No
9698	Southwest Operating Area	CHERRY HILL	State Highway 70 - Wiedo Lane to Springdale Road	\$ 165,000	Replace	930	8.00	Ductile Iron	1970	8	CI	Relocation/Opportunity	60	2020Q4	No	No
9751	Southwest Operating Area	CHERRY HILL	Mackin Drive	\$ 230,000	Replace	1,209	8.00	Ductile Iron	1960	6	CI	Safety and Reliability	60	2021Q1	No	No
9752	Southwest Operating Area	CHERRY HILL	Windsor Drive, Windsor Court, Westwood Avenue, Windsor Circle	\$ 810,000	Replace	3,840	8.00	Ductile Iron	1960	6	CI	Safety and Reliability	90	2021Q1	No	No
9753	Southwest Operating Area	CHERRY HILL	Brookmead Drive, Grass Road, Parkwood Road	\$ 225,000	Replace	1,273	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	60	2021Q1	No	No
9754	Southwest Operating Area	CHERRY HILL	Sharrowvale Road and West Gate Drive	\$ 485,000	Replace	2,401	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	90	2021Q3	No	No
9755	Southwest Operating Area	CHERRY HILL	Thornhill Road, Tunbridge Road, Heather Lane, Latches Lane, Ramsgate Road, Anvil Court	\$ 1,380,000	Replace	6,823	8.00	Ductile Iron	1960	6	CI	Safety and Reliability/Structural	120	2021Q4	No	No
7643	North Operating Area	CHESTER BOROUGH	Main Street from Crystal Lake Dr. to Collis Ln.	\$ 643,500	Replace	1,950	12.00	Ductile Iron	2000	8	CI	System Flows and Pressure	60	2019Q3	No	No
6967	Central Operating Area	CLARK TWP	Alice La. (Coldevin to James)	\$ 261,600	Replace	1,308	8.00	Ductile Iron	1940's	Unknown	Unknown	System Flows and Pressure	60	Complete	Yes	Yes
6968	Central Operating Area	CLARK TWP	Clauss Rd. (Schmidt to Blake)	\$ 184,000	Replace	920	8.00	Ductile Iron	1950's	Unknown	Unknown	System Flows and Pressure	60	2018Q4	Yes	Yes
6969	Central Operating Area	CLARK TWP	Coldevin Rd. (Sunset to James)	\$ 371,800	Replace	1,859	8.00	Ductile Iron	1940's	Unknown	Unknown	System Flows and Pressure	60	Complete	Yes	Yes
6971	Central Operating Area	CLARK TWP	Georgian Dr. (Ross to Sherwood)	\$ 225,800	Replace	1,129	8.00	Ductile Iron	1950's	Unknown	Unknown	System Flows and Pressure	60	Complete	Yes	Yes
6972	Central Operating Area	CLARK TWP	Grand St. (Brant to Dead End)	\$ 128,000	Replace	640	8.00	Ductile Iron	1950's	Unknown	Unknown	System Flows and Pressure	60	2018Q4	Yes	Yes
6974	Central Operating Area	CLARK TWP	Lupine Way (Malvern to Park Ridge)	\$ 165,200	Replace	826	8.00	Ductile Iron	1950's	Unknown	Unknown	System Flows and Pressure	60	2019Q3	No	Yes
6975	Central Operating Area	CLARK TWP	Meadow Rd. (Lake to Stonehedge)	\$ 507,800	Replace	2,539	8.00	Ductile Iron	1940's	Unknown	Unknown	System Flows and Pressure	90	2019Q3	No	Yes
6976	Central Operating Area	CLARK TWP	Willow Way (Briar Heath to Lake)	\$ 393,235	Replace	1,829	8.00	Ductile Iron	1940's	Unknown	Unknown	System Flows and Pressure	60	Complete	Yes	Yes
9270	Central Operating Area	CLARK TWP	Willow Way, Brookside Terr., Orchard Terr., Clark	\$ 2,140,000	Rehab	10,520	6.00	Other Plastic	1950	6	CI	System Flows and Pressure	120	2019Q3	No	No
9271	Central Operating Area	CLARK TWP	Willow Way, Williams St., Briar Heath Ln., Clark	\$ 1,600,000	Rehab	7,998	6.00	Other Plastic	1950	6	CI	System Flows and Pressure	120	2019Q3	No	No

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9739	Central Operating Area	CLARK TWP	Central Ave RR Crossing Directional Drill	\$ 150,000	Replace	803	12.00	HDPE	1920	6	CI	Safety and Reliability/Structural System Flows and Pressure	60	2019Q4	No	No
9801	Central Operating Area	CLARK TWP	Oak Ridge Rd (Lake Ave to Kinkaid Pl)	\$ 570,000	Replace	1,738	12.00	Ductile Iron	1960	36	CI	Safety and Reliability/Structural System Flows and Pressure	60	2019Q1	No	No
8913	Southwest Operating Area	DELANCO	Walter Ave. & Washington Street & Orchard St	\$ 410,000	Replace	2,132	8.00	Ductile Iron	1950	4	CI	Safety and Reliability/Structural Relocation/Opportunity	90	2019Q3	No	No
8925	Southwest Operating Area	DELANCO	2nd Street, Peachtree Street, Magnolia Lane, Fenimore Lane	\$ 700,000	Replace	3,652	8.00	Ductile Iron	1960	6	AC	Sustained Economic Growth	90	2020Q1	No	No
9469	Southwest Operating Area	DELANCO	Delanco - Union Avenue, Poplar Street, Laurel Street, Walnut Street, Spruce Street - South side of Burlington Avenue	\$ 600,000	Replace	2,827	8.00	Ductile Iron	1930	4	CI	Sustained Economic Growth	90	2019Q3	No	No
6995	Central Operating Area	DUNELLEN BOROUGH	Fairview Ave. (Walnut to Center)	\$ 322,200	Replace	1,611	8.00	Ductile Iron	1910's	Unknown	Unknown	System Flows and Pressure	60	2019Q1	No	Yes
6997	Central Operating Area	DUNELLEN BOROUGH	Madison Ave. (North to 1st)	\$ 222,800	Replace	1,114	8.00	Ductile Iron	1920's	Unknown	Unknown	System Flows and Pressure	60	2019Q1	No	Yes
6998	Central Operating Area	DUNELLEN BOROUGH	Oak Parkway (New Market to Maple)	\$ 266,400	Replace	1,332	8.00	Ductile Iron	1920's	Unknown	Unknown	System Flows and Pressure	60	2019Q3	No	Yes
6999	Central Operating Area	DUNELLEN BOROUGH	Orange St. (New Market to S. Washington)	\$ 118,600	Replace	593	8.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	60	2019Q3	No	Yes
7000	Central Operating Area	DUNELLEN BOROUGH	N. Washington Ave. (North to 1st)	\$ 219,000	Replace	1,095	8.00	Ductile Iron	1910's	Unknown	Unknown	System Flows and Pressure	60	2019Q1	No	Yes
5557	Coastal Operating Area	EATONTOWN	Eatontown - Locust Ave main replacement	\$ 102,000	Replace	680	6.00	Ductile Iron	1940's	4	Cast Iron	Safety and Reliability	60	2019Q1	No	Yes
9554	Coastal Operating Area	EATONTOWN	Wyckoff Rd	\$ 975,000	Replace	5,411	8.00	Ductile Iron	1940	8	AC	Safety and Reliability	120	2021Q3	No	No
9713	Southwest Operating Area	EDGEWATER PARK	Harrison Ave (N & S), Hayes Ave, Arthur Dr (N & S), Ivy Road	\$ 1,600,000	Replace	7,858	8.00	Ductile Iron	1960	6	CI	Safety and Reliability/Structural Relocation/Opportunity	120	2020Q4	No	No
9733	Southwest Operating Area	EDGEWATER PARK	Beverly-Bridgeboro Rd, Mt Holly Road, Green Street	\$ 350,000	Replace	6,457	16.00	Ductile Iron	1960	12	CI	Safety and Reliability/Structural Relocation/Opportunity	120	2019Q3	No	No
156	Coastal Operating Area	EGG HARBOR TWP	Cordova Ave. - Bay Dr. - Blk. Horse Pike	\$ 140,000	Replace	546	8.00	PVC	1920's	2	Ivanized St	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	Yes
157	Coastal Operating Area	EGG HARBOR TWP	Toledo Ave. - Bay Dr. - Blk. Horse Pike	\$ 93,750	Replace	372	8.00	PVC	1920's	6	Cast Iron	Safety and Reliability/Structural System Flows and Pressure	30	2020Q3	No	Yes
571	Coastal Operating Area	FAIR HAVEN	Hillside Pl. - Buena Vista to terminus	\$ 105,000	Replace	700	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	Yes
573	Coastal Operating Area	FAIR HAVEN	Forman Street - Cedar to Hance Ave.	\$ 225,000	Replace	1,500	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	Yes
7215	Coastal Operating Area	FAIR HAVEN	Woodland Rd	\$ 109,080	Replace	606	8.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	60	2019Q1	No	Yes
8092	Coastal Operating Area	FAIR HAVEN	Highland Ave. 2" CI	\$ 220,000	Replace	1,100	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	No
8093	Coastal Operating Area	FAIR HAVEN	Heights Terrace 2" CI	\$ 160,000	Replace	800	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	No
8094	Coastal Operating Area	FAIR HAVEN	S. Woodland Dr. 2" CI	\$ 144,000	Replace	720	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	No
8095	Coastal Operating Area	FAIR HAVEN	Katherine Street 2.5" CI	\$ 104,000	Replace	520	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	No
8096	Coastal Operating Area	FAIR HAVEN	Lockwood Pl. 4" CI & 2" CI	\$ 108,000	Replace	540	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	No
8097	Coastal Operating Area	FAIR HAVEN	Sycamore Ln. 6" CI	\$ 80,000	Replace	400	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	30	2020Q3	No	No
8098	Coastal Operating Area	FAIR HAVEN	Doughty Ln. 4" PVC & 2" CI	\$ 80,000	Replace	400	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	30	2020Q3	No	No
8103	Coastal Operating Area	FAIR HAVEN	Fair Haven Rd. 2" CI, 4" CI, & 6" AC	\$ 520,000	Replace	2,600	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	90	2020Q3	No	No
8105	Coastal Operating Area	FAIR HAVEN	Browns Ln. 2" CI & 6" CI	\$ 180,000	Replace	900	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2020Q3	No	No
8106	Coastal Operating Area	FAIR HAVEN	Park Ln. 2" CI	\$ 1,200	Replace	600	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8107	Coastal Operating Area	FAIR HAVEN	Park Ln. 6" AC BTWN Laurel Dr. & Oak Pl.	\$ 164,000	Replace	820	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8114	Coastal Operating Area	FAIR HAVEN	Locust Ave. 2" CI	\$ 140,000	Replace	700	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8115	Coastal Operating Area	FAIR HAVEN	Navesink Ave. 2" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8117	Coastal Operating Area	FAIR HAVEN	1st Street 2" CI	\$ 260,000	Replace	1,300	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8119	Coastal Operating Area	FAIR HAVEN	Smith St. 2" CI & 6" CI	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8120	Coastal Operating Area	FAIR HAVEN	Jackson St. 2" CI	\$ 272,000	Replace	1,360	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No
8122	Coastal Operating Area	FAIR HAVEN	Colonial Ct. 2" CI	\$ 64,000	Replace	320	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	30	2021Q3	No	No
8123	Coastal Operating Area	FAIR HAVEN	2nd St. 2" CI & 6" CI	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure	60	2021Q3	No	No

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7592	Central Operating Area	FRENCHTOWN BOROUGH	South Harrison St Main Replacement	\$ 100,000	Replace	380	6.00	Ductile Iron	2000	2	GALV	Safety and Reliability	30	2019Q1	No	No
7597	Central Operating Area	FRENCHTOWN BOROUGH	6th Street Main replacement	\$ 162,000	Replace	335	8.00	Ductile Iron	1930	8	CI	Safety and Reliability/Structural	30	2019Q1	No	No
308	Central Operating Area	GARWOOD BOROUGH	Garwood/Cranford Rehab - Ph4 23000 LF of Distribution mains N of Unami Park	\$ 1,725,000	Rehab	23,000	6.00	Other	1920's	2.5	Cast Iron	System Flows and Pressure	120	2018Q4	No	Yes
9746	Central Operating Area	GARWOOD BOROUGH	Garwood Main Cleaning North Side	\$ 3,180,000	Rehab	16,807	6.00	Other	1900	6	CI	System Flows and Pressure	120	2020Q3	No	No
9761	Central Operating Area	GARWOOD BOROUGH	3rd Ave Main replacement	\$ 170,000	Replace	836	8.00	Ductile Iron	1900	6	CI	System Flows and Pressure	60	2019Q1	No	No
9543	Southwest Operating Area	GLOUCESTER TWP	Gloucester Township - 8th Avenue and 9th Avenue	\$ 330,600	Replace	1,720	8.00	Ductile Iron	1960	6	CI	Reliability/Structural	60	2021Q1	No	No
7010	Central Operating Area	GREEN BROOK TWP	Lenox Ave. (Fitzrandolph to Highland)	\$ 296,000	Replace	1,480	8.00	Ductile Iron	1920's	Unknown	Unknown	Pressure	60	2018Q3	Yes	Yes
5957	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - North Park Avenue and Station Avenue - Green Street to White Horse Pike	\$ 642,200	Replace	3,380	8.00	Ductile Iron	1900's	4	jestos Cem	System Flows and Pressure	90	2020Q1	No	Yes
5958	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - South Park Avenue - Bellmawr Avenue to Station Avenue	\$ 281,200	Replace	1,480	8.00	Ductile Iron	1900's	12.00	Cast Iron	Sustained Economic Growth	60	2020Q1	No	Yes
5959	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - 3rd Avenue - East Kings Highway to High Street	\$ 511,100	Replace	2,690	8.00	Ductile Iron	1900's	8.00	jestos Cem	System Flows and Pressure	90	2020Q1	No	Yes
7602	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - First Avenue, Crest Avenue, E High St	\$ 665,000	Replace	3,559	8.00	Ductile Iron	1920	6	CI	Reliability/Structural	90	2021Q4	No	No
9730	Southwest Operating Area	HADDON HEIGHTS	South Park Avenue and Bellmawr Ave	\$ 430,000	Replace	1,495	8.00	Ductile Iron	1950	6	AC	Reliability/Structural	60	2021Q3	No	No
7102	Southwest Operating Area	HADDONFIELD	Haddonfield - Haddon Avenue (CR-561) - Ellis Street (CR-651) to Marne Avenue	\$ 1,450,000	Replace	6,300	12.00	Ductile Iron	Unknown	Unknown	Unknown	Reliability/Structural	120	2019Q3	No	Yes
8679	Southwest Operating Area	HADDONFIELD	Haddonfield - Maple Avenue, Princeton Avenue, Ardmore Avenue, Marne Avenue, and Maple Court	\$ 1,630,200	Replace	8,580	8.00	Ductile Iron	Unknown	4	CI	Safety and Reliability/Structural	120	2021Q3	No	No
9249	Southwest Operating Area	HADDONFIELD	Haddonfield Cleaning and Lining - 2018	\$ 2,200,000	Rehab	8,500	8.00	Other	1900	10	CI	Safety and Reliability/Structural	120	2018Q4	No	No
9567	Southwest Operating Area	HADDONFIELD	West Redman Avenue, Mt Vernon Ave, Peyton Ave, Linden Ave.	\$ 1,660,000	Replace	7,282	12.00	Ductile Iron	1960	4	CI	System Flows and Pressure	120	2019Q4	No	No
9699	Southwest Operating Area	HADDONFIELD	Kings Highway - Park Drive (Cherry Hill) to Birchall Dr	\$ 2,500,000	Replace	19,003	16.00	Ductile Iron	1900	10	CI	Relocation/Opportunity	120	2021Q3	No	No
9715	Southwest Operating Area	HADDONFIELD	Knolltop Lane	\$ 180,000	Replace	1,126	8.00	Ductile Iron	1960	6	CI	Safety and Reliability/Structural	60	2019Q1	No	No
5427	Coastal Operating Area	HIGHLANDS	Highlands - Chestnut St / Oak St Replacement	\$ 135,000	Replace	900	6.00	Ductile Iron	1940's	4	Cast Iron	Safety and Reliability	60	2018Q4	Yes	Yes
5843	Coastal Operating Area	HIGHLANDS	Waterwitch Ave Main Replacement	\$ 78,750	Replace	525	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	60	2018Q4	Yes	Yes
7444	Coastal Operating Area	HIGHLANDS	Shore Drive - Replacement of approximately 2500 LF of 6-Inch CI with 12-inch	\$ 600,000	Replace	2,500	12.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	90	2021Q1	No	No
9756	Central Operating Area	HILLSIDE	Hillside Main Cleaning and Lining: Streets surrounded by Liberty Ave, Conant St, Central Ave, and Long Ave	\$ 3,700,000	Rehab	19,022	6.00	Other	1980	16	CI	System Flows and Pressure	120	2021Q3	No	No
7392	Coastal Operating Area	HOWELL TWP	Monticello from Salem Hill to Taunton	\$ 432,000	Replace	1,792	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural	60	2019Q4	No	No
7401	Coastal Operating Area	HOWELL TWP	Forrest Hill Road from Monticello to Taunton Dr	\$ 310,000	Replace	1,240	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2019Q3	No	No
7402	Coastal Operating Area	HOWELL TWP	Salem Hill RD (From Aldrich to Newport)	\$ 444,000	Replace	2,197	8.00	Ductile Iron	1970	8	AC	Safety and Reliability/Structural	90	2019Q3	No	No
7404	Coastal Operating Area	HOWELL TWP	Darien Cir	\$ 67,200	Replace	280	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	30	2020Q3	No	No
7405	Coastal Operating Area	HOWELL TWP	Darien Rd from Salem Hill to Northgate Dr	\$ 360,000	Replace	1,500	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2020Q3	No	No
7406	Coastal Operating Area	HOWELL TWP	Forrest Hill Drive from Taunton Dr to Old Bridge Dr.	\$ 260,000	Replace	1,038	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural	60	2019Q3	No	No
7407	Coastal Operating Area	HOWELL TWP	Northgate Dr (Aldrich to Darien Rd)	\$ 90,000	Replace	375	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	30	2021Q3	No	No
7408	Coastal Operating Area	HOWELL TWP	Old Bridge Drive from Taunton to Newbury	\$ 355,000	Replace	1,288	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural	60	2019Q3	No	No
7409	Coastal Operating Area	HOWELL TWP	Darien (from Northgate dr by Aldrich, to Northgate Dr by Brookhill Dr)	\$ 360,000	Replace	1,500	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2021Q3	No	No
7410	Coastal Operating Area	HOWELL TWP	Northgate (Between Darien Rd / Brookhill)	\$ 240,000	Replace	1,000	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2021Q3	No	No
7411	Coastal Operating Area	HOWELL TWP	Brookhill Dr from Darien Road to Darien Road	\$ 456,000	Replace	1,400	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2020Q3	No	No
7412	Coastal Operating Area	HOWELL TWP	Hampton Rd from Salem Hill Rd to Darien Rd	\$ 288,000	Replace	1,200	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2021Q1	No	No
7413	Coastal Operating Area	HOWELL TWP	Taunton Drive from Newbury Rd to Newbury Rd	\$ 675,000	Replace	2,704	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural	90	2019Q3	No	No
7414	Coastal Operating Area	HOWELL TWP	Darien Rd (from Brookhill Rd to Princeton Dr)	\$ 312,000	Replace	1,300	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2020Q3	No	No
7415	Coastal Operating Area	HOWELL TWP	Darien Rd between Princeton Dr and Princeton Dr	\$ 360,000	Replace	1,500	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2020Q3	No	No

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7417	Coastal Operating Area	HOWELL TWP	Princeton Dr (between Darien Rd and Darien Rd	\$ 408,000	Replace	1,700	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q1	No	No
7418	Coastal Operating Area	HOWELL TWP	Southgate Dr (between Salem Hill Rd & Kensington Dr)	\$ 216,000	Replace	900	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q1	No	No
7419	Coastal Operating Area	HOWELL TWP	Newbury Rd (from Westbrook Rd to Kensington Dr.)	\$ 540,000	Replace	2,250	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	90	2019Q3	No	No
7420	Coastal Operating Area	HOWELL TWP	Newbury Cir.	\$ 180,000	Replace	750	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q3	No	No
7421	Coastal Operating Area	HOWELL TWP	Darien Rd (from Newbury Rd to Princeton Dr)	\$ 210,000	Replace	875	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q3	No	No
7422	Coastal Operating Area	HOWELL TWP	Nottingham Dr from Kingston Dr to Darien Rd	\$ 384,000	Replace	1,600	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q3	No	No
7423	Coastal Operating Area	HOWELL TWP	Newbury Road Taunton to Westbrook	\$ 200,000	Replace	797	8.00	Ductile Iron	1970	8	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q3	No	No
7424	Coastal Operating Area	HOWELL TWP	Kensington Dr from Darien Rd to Newbury Rd	\$ 312,000	Replace	1,300	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q3	No	No
7425	Coastal Operating Area	HOWELL TWP	Arlington Dr from Southgate to Newbury Rd	\$ 216,000	Replace	900	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q1	No	No
7426	Coastal Operating Area	HOWELL TWP	Newbury Rd (From Kensington to Salem Hill)	\$ 156,000	Replace	650	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q3	No	No
7427	Coastal Operating Area	HOWELL TWP	Springhill Road from Monticello to Newbury	\$ 575,000	Replace	2,300	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	90	2019Q4	No	No
7428	Coastal Operating Area	HOWELL TWP	Stockport Way from Westbrook to Spring Hill	\$ 130,000	Replace	525	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q3	No	No
7429	Coastal Operating Area	HOWELL TWP	Westbrook Road from Lexington to Newbury	\$ 800,000	Replace	3,200	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	90	2020Q3	No	No
7430	Coastal Operating Area	HOWELL TWP	Westbrook Circle from Westbrook Road to end of Cul-De-Sac	\$ 80,000	Replace	325	6.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	30	2020Q3	No	No
7431	Coastal Operating Area	HOWELL TWP	Lexington Road from Monticello to Kingsport Drive	\$ 185,000	Replace	732	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q1	No	No
7432	Coastal Operating Area	HOWELL TWP	Chatham Drive from Salem Hill to Westbrook	\$ 280,000	Replace	1,125	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q3	No	No
7433	Coastal Operating Area	HOWELL TWP	Lexington Road between Kingsport and Chatham	\$ 430,000	Replace	1,784	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q1	No	No
7434	Coastal Operating Area	HOWELL TWP	Kingsport Drive from Lexington to Chatham	\$ 400,000	Replace	1,600	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q1	No	No
9055	Coastal Operating Area	HOWELL TWP	Newport Dr. 6" AC	\$ 320,000	Replace	1,600	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2020Q3	No	No
9056	Coastal Operating Area	HOWELL TWP	Chestnut Hill Rd. 6" AC	\$ 364,000	Replace	1,820	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9058	Coastal Operating Area	HOWELL TWP	Brunswick Dr. 6" AC	\$ 180,000	Replace	900	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9059	Coastal Operating Area	HOWELL TWP	N Longview Rd. 6" AC	\$ 220,000	Replace	1,100	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9060	Coastal Operating Area	HOWELL TWP	Beacon Dr. 6" AC	\$ 208,000	Replace	1,040	8.00	Ductile Iron	2010	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9061	Coastal Operating Area	HOWELL TWP	Meadowbrook Dr. 6" AC	\$ 300,000	Replace	1,500	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9062	Coastal Operating Area	HOWELL TWP	Putnam Rd. 6" AC	\$ 180,000	Replace	900	8.00	Ductile Iron	1970	6	AC	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q3	No	No
7763	Coastal Operating Area	INTERLAKEN	Bridlemere Ave. 4" CI	\$ 120,000	Replace	1,200	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
7764	Coastal Operating Area	INTERLAKEN	Interlaken Dr. 4" CI	\$ 40,000	Replace	400	8.00	Ductile Iron	1930	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	30	2019Q1	No	No
7765	Coastal Operating Area	INTERLAKEN	Iona Street 4" CI	\$ 100,000	Replace	1,000	8.00	Ductile Iron	1930	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
7766	Coastal Operating Area	INTERLAKEN	Bridlemere Ave. 4" CI	\$ 70,000	Replace	700	8.00	Ductile Iron	1930	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
7767	Coastal Operating Area	INTERLAKEN	Scarba St. 2" CI	\$ 60,000	Replace	600	8.00	Ductile Iron	1930	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
7768	Coastal Operating Area	INTERLAKEN	Barra Street 2" CI	\$ 60,000	Replace	600	8.00	Ductile Iron	1960	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q1	No	No
7769	Coastal Operating Area	INTERLAKEN	Woodmere Road 4" CI	\$ 50,000	Replace	500	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
7770	Coastal Operating Area	INTERLAKEN	Fernmere Ave. 2" CI	\$ 110,000	Replace	1,100	8.00	Ductile Iron	1960	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2021Q1	No	No
7771	Coastal Operating Area	INTERLAKEN	Grassmere Ave. 4" CI	\$ 160,000	Replace	1,600	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
7772	Coastal Operating Area	INTERLAKEN	Hetrick Point Rd. 2" CI & 4" CI	\$ 50,000	Replace	500	8.00	Ductile Iron	1900	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and	60	2019Q1	No	No
6879	North Operating Area	IRVINGTON	IRVINGTON - Mill Rd from Union to Stuyvesant	\$ 405,000	Replace	1,800	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability Safety and Reliability Safety and	60	2020Q1	No	Yes
7520	North Operating Area	IRVINGTON	Clermont Ave, Irvington from Union Ave toward Mt Vernon Ave 500'	\$ 110,000	Replace	445	12.00	Ductile Iron	1900	12	CI	Safety and Reliability Safety and Reliability Safety and	30	2021Q1	No	No

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9629	North Operating Area	IRVINGTON	Mount Vernon Ave from Cleremont Ave to Melville Pl	\$ 360,000	Replace	1,200	16.00	Ductile Iron	1940	12	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2019Q3	No	No
5724	Central Operating Area	JAMESBURG	Rhode Hill Rd. main replacement	\$ 250,000	Replace	1,000	8.00	Ductile Iron	1950's	4	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2020Q1	No	Yes
6427	Central Operating Area	JAMESBURG	Maple Dr from Half Acre Rd to Forsgate Dr	\$ 235,000	Replace	1,175	8.00	Ductile Iron	1940's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	Yes
6470	Central Operating Area	JAMESBURG	West Church Street from Davison Ave to Gatzmer Ave	\$ 65,000	Replace	325	8.00	Ductile Iron	1940's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2020Q3	No	Yes
6478	Central Operating Area	JAMESBURG	Forge Street from Buckelew Ave to beyond valve # VJ8-175	\$ 200,000	Replace	1,000	8.00	Ductile Iron	1940's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
6479	Central Operating Area	JAMESBURG	Michael St from Bucklew Ave to dead end	\$ 146,000	Replace	730	8.00	Ductile Iron	1940's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
6480	Central Operating Area	JAMESBURG	William Street from Buckelew Ave to dead ends (Both sides of Buckelew Ave)	\$ 236,000	Replace	1,180	8.00	Ductile Iron	1940's	6	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
6481	Central Operating Area	JAMESBURG	New Street from Buckelew Ave to dead end	\$ 120,000	Replace	600	8.00	Ductile Iron	1940's	6	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
6482	Central Operating Area	JAMESBURG	Marryott St from Buckelew Ave to dead end	\$ 140,000	Replace	700	8.00	Ductile Iron	1940's	6	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
7622	Central Operating Area	JAMESBURG	East /West Rail Road Ave Main tie in	\$ 250,000	Replace	321	12.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2019Q3	No	No
5576	Central Operating Area	KENILWORTH	Springfield Road (Rt. 22 to 36" @ Black Brook Park)	\$ 295,000	Replace	1,471	8.00	Ductile Iron	1950's	6	Jestco Cem	System Flows and Pressure System Flows and Pressure System Flows and Pressure System Flows and Pressure	60	2020Q1	No	Yes
5577	Central Operating Area	KENILWORTH	Springfield Rd. (36" @ Black Brook Park to Borlight & Lafayette)	\$ 664,000	Replace	3,317	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure System Flows and Pressure System Flows and Pressure System Flows and Pressure	90	2020Q1	No	Yes
269	Coastal Operating Area	LAKEWOOD	Lakewood -Fifth Street (from Madison Ave to Clifton Ave)	\$ 56,000	Replace	400	6.00	Ductile Iron	Unknown	12	Ductile Iron	System Flows and Pressure System Flows and Pressure System Flows and Pressure System Flows and Pressure	30	2020Q4	No	Yes
279	Coastal Operating Area	LAKEWOOD	Lakewood -Park Avenue-2nd street to Main street	\$ 150,000	Replace	1,000	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure System Flows and Pressure System Flows and Pressure System Flows and Pressure	60	2018Q4	Yes	Yes
6173	Coastal Operating Area	LAKEWOOD	Carey St from Lexington Ave to Squankum Rd	\$ 385,000	Replace	1,925	8.00	Ductile Iron	1920's	Unknown	Cast Iron	Safety and Reliability Safety and Reliability Safety and Reliability Safety and Reliability	60	2018Q4	Yes	Yes
6174	Coastal Operating Area	LAKEWOOD	6th Street from Sixth Street Tank to Forest Ave, then north to 7th St, then east to Lexington	\$ 490,000	Replace	2,450	12.00	Ductile Iron	1930's	3	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	2020Q4	No	Yes
6175	Coastal Operating Area	LAKEWOOD	Lakewood Ave from 5th Street to 9th Street	\$ 282,000	Replace	1,410	8.00	Ductile Iron	1930's	8	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
6176	Coastal Operating Area	LAKEWOOD	Lexington Ave from 7th St. to 15t. Street	\$ 430,000	Replace	2,150	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	2018Q4	Yes	Yes
6180	Coastal Operating Area	LAKEWOOD	Somerset St, Ridge, Manetta, E 5th St, School & Clover St from E 7th St to Laurel Ave	\$ 1,113,750	Replace	4,950	12.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	120	2018Q4	Yes	Yes
6181	Coastal Operating Area	LAKEWOOD	Carey St from Forest Ave to Lexington Ave	\$ 376,000	Replace	1,880	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2018Q4	Yes	Yes
6197	Coastal Operating Area	LAKEWOOD	E. County Line Rd. from Clifton Ave to Lexington, then in Lexington to 11th St.	\$ 550,000	Replace	2,200	16.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	2018Q4	Yes	Yes
6198	Coastal Operating Area	LAKEWOOD	Lexington Ave from 11th St. to 7th St., then in 7th to Monmouth Ave.	\$ 550,000	Replace	2,200	16.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	2018Q4	No	Yes
6312	Coastal Operating Area	LAKEWOOD	5th Street from Madison Avenue to Lexington Avenue	\$ 254,000	Replace	1,270	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability Safety and Reliability Safety and Reliability Safety and Reliability	60	2020Q4	No	Yes
6638	Coastal Operating Area	LAKEWOOD	9th Street - Lakewood Ave to Route 9	\$ 345,000	Replace	1,725	8.00	Ductile Iron	1950's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
6639	Coastal Operating Area	LAKEWOOD	8th Street - Lakewood Ave to Rt 9	\$ 460,000	Replace	2,300	8.00	Ductile Iron	1930's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	Complete	Yes	Yes
6642	Coastal Operating Area	LAKEWOOD	5th Street - Lakewood Ave to Rt 9	\$ 460,000	Replace	2,300	8.00	Ductile Iron	1930's	Unknown	Unknown	System Flows and Pressure System Flows and Pressure System Flows and Pressure System Flows and Pressure	90	2020Q4	No	Yes
6919	Coastal Operating Area	LAKEWOOD	Forest Avenue from West County Line Road to 7th Street	\$ 560,000	Replace	3,700	12.00	Ductile Iron	1930's	Unknown	Unknown	System Flows and Pressure System Flows and Pressure System Flows and Pressure System Flows and Pressure	90	2018Q4	No	Yes
7963	Coastal Operating Area	LAKEWOOD	Manetta Pl, 2"	\$ 35,000	Replace	365	8.00	PVC	1960	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2019Q1	No	No
7964	Coastal Operating Area	LAKEWOOD	Drum Ct, 2" CI	\$ 14,000	Replace	137	8.00	PVC	2000	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2019Q4	No	No
7965	Coastal Operating Area	LAKEWOOD	New England Ct, 2.25"	\$ 12,500	Replace	122	8.00	PVC	2000	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2019Q4	No	No
7970	Coastal Operating Area	LAKEWOOD	Caranetta Dr, 4" CI	\$ 310,000	Replace	3,045	8.00	PVC	1930	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	2020Q4	No	No
7973	Coastal Operating Area	LAKEWOOD	Harrison Pl, 1" CI	\$ 22,500	Replace	226	8.00	PVC	1930	1	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2020Q4	No	No
7983	Coastal Operating Area	LAKEWOOD	Sunset Rd, 2" CI	\$ 105,000	Replace	1,018	8.00	PVC	1930	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2020Q4	No	No
7984	Coastal Operating Area	LAKEWOOD	S Lake Dr, 4" CI	\$ 150,000	Replace	1,446	8.00	PVC	1930	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2020Q4	No	No
7985	Coastal Operating Area	LAKEWOOD	Kimball Rd, 2"	\$ 29,000	Replace	286	8.00	PVC	1930	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2020Q4	No	No
7986	Coastal Operating Area	LAKEWOOD	Bradshaw 2"	\$ 30,000	Replace	301	8.00	PVC	1930	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2020Q4	No	No
7988	Coastal Operating Area	LAKEWOOD	Glen Terrace, 2" CI	\$ 9,500	Replace	94	8.00	PVC	1970	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	30	2019Q4	No	No

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7989	Coastal Operating Area	LAKEWOOD	Daley Ct, 2.25" CI	\$ 17,500	Replace	166	8.00	PVC	1950	2	CI	Safety and Reliability/Structural Safety and	30	2019Q4	No	No
7990	Coastal Operating Area	LAKEWOOD	Polinsetta Ct, 2.25"	\$ 11,000	Replace	105	8.00	PVC	1950	2	CI	Safety and Reliability/Structural Safety and	30	2019Q4	No	No
7991	Coastal Operating Area	LAKEWOOD	Arbutus Dr, 4" CI	\$ 41,500	Replace	412	8.00	PVC	1930	4	CI	Safety and Reliability/Structural Safety and	30	2019Q4	No	No
7992	Coastal Operating Area	LAKEWOOD	Ardenwood Ave, 2.25" CI	\$ 70,000	Replace	688	8.00	PVC	1930	2	CI	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
7993	Coastal Operating Area	LAKEWOOD	Courtney Rd, 6", 2"	\$ 130,000	Replace	1,181	8.00	PVC	1930	6	CI	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
7994	Coastal Operating Area	LAKEWOOD	Park Pl, 2"	\$ 80,000	Replace	760	8.00	PVC	1980	2	CI	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
7995	Coastal Operating Area	LAKEWOOD	School St, 4" CI	\$ 48,500	Replace	480	8.00	PVC	1950	4	CI	Safety and Reliability/Structural Safety and	30	2019Q4	No	No
7997	Coastal Operating Area	LAKEWOOD	Congress St, 1.5" GALV, 2" CI	\$ 85,000	Replace	748	8.00	PVC	1950	1	GALV	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
8019	Coastal Operating Area	LAKEWOOD	E 8th St, 2" CI, 6" DI	\$ 137,500	Replace	1,364	8.00	PVC	2000	6	DI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8021	Coastal Operating Area	LAKEWOOD	9th St, 1.5" GALV, 6" CI	\$ 90,000	Replace	897	8.00	PVC	2000	1	GALV	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8736	Coastal Operating Area	LAKEWOOD	Cardinal Ct, 6" AC	\$ 84,000	Replace	391	8.00	Ductile Iron	1980	6	AC	Safety and Reliability/Structural Safety and	30	2019Q4	No	No
8738	Coastal Operating Area	LAKEWOOD	Regent Pl, 6" AC	\$ 203,700	Replace	966	8.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
8739	Coastal Operating Area	LAKEWOOD	Robin Dr, 6" AC	\$ 283,500	Replace	1,348	8.00	Ductile Iron	1980	8	AC	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
8985	Coastal Operating Area	LAKEWOOD	6th St. 6" CI BTWN Clifton & Lexington	\$ 140,000	Replace	700	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8990	Coastal Operating Area	LAKEWOOD	8th St.6" CI BTWN RT-9 & Monmouth Ave.	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8991	Coastal Operating Area	LAKEWOOD	9th St. 6"CI	\$ 200,000	Replace	1,000	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8993	Coastal Operating Area	LAKEWOOD	10th Street 6" CI	\$ 648,000	Replace	3,240	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	90	2021Q3	No	No
8995	Coastal Operating Area	LAKEWOOD	11th Street 6"CI	\$ 800,000	Replace	4,000	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	120	2021Q3	No	No
8997	Coastal Operating Area	LAKEWOOD	12th Street 6" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8998	Coastal Operating Area	LAKEWOOD	12th Street 6" AC	\$ 260,000	Replace	1,300	8.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
8999	Coastal Operating Area	LAKEWOOD	13th Street 6" AC & 6" CI	\$ 380,000	Replace	1,900	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9000	Coastal Operating Area	LAKEWOOD	13th Street 6" CI BTWN Forest & RT-9	\$ 120,000	Replace	600	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9006	Coastal Operating Area	LAKEWOOD	15th Street 6"AC	\$ 80,000	Replace	400	8.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural Safety and	30	2021Q3	No	No
9042	Coastal Operating Area	LAKEWOOD	Chicanos Dr. 6" CI	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
9043	Coastal Operating Area	LAKEWOOD	Steven Ln. 6" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1930	6	CI	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
9047	Coastal Operating Area	LAKEWOOD	Stratford Pl. 6" CI	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural Safety and	60	2019Q4	No	No
9074	Coastal Operating Area	LAKEWOOD	Ashley Ave. 6"AC	\$ 180,000	Replace	900	8.00	Ductile Iron	1960	6	AC	Safety and Reliability/Structural Safety and	60	2021Q3	No	No
9723	Coastal Operating Area	LAKEWOOD	S Oakland Ave from Route 88 to end	\$ 36,600	Replace	183	6.00	Ductile Iron	1950	1	GALV	System Flows and Pressure	30	2019Q4	No	No
7673	Southwest Operating Area	LAUREL SPRINGS	Lindsay Avenue, Maple Avenue, Elma Avenue, Lakeview Avenue	\$ 785,000	Replace	4,065	8.00	Ductile Iron	1950	4	DI	System Flows and Pressure Safety and	120	2019Q3	No	No
6077	Central Operating Area	LINDEN CITY	Tremley Point Main Replacement Phase 3 Linden	\$ 675,000	Replace	2,250	16.00	PVC	1910's	6	Stove Pipe	System Flows and Pressure	90	2018Q3	Yes	Yes
6645	Central Operating Area	LINDEN CITY	S. Wood Ave. (W. Stimpson to Cedar)	\$ 90,000	Replace	450	8.00	Ductile Iron	1920's	Unknown	Unknown	System Flows and Pressure	30	2019Q3	No	Yes
7022	Central Operating Area	LINDEN CITY	Brunswick Ave. (Park to Moses Mill) Bayway Refinery	\$ 720,000	Replace	3,200	12.00	Ductile Iron	1900's	Unknown	Unknown	System Flows and Pressure	90	2019Q3	No	Yes
9076	Central Operating Area	LINDEN CITY	E. Curtis St. (Maple to W. Baltimore)	\$ 575,340	Replace	2,676	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	90	2019Q3	No	No
9122	Central Operating Area	LINDEN CITY	Union St. (Maple to W. Baltimore)	\$ 559,215	Replace	2,601	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	90	2019Q3	No	No
9123	Central Operating Area	LINDEN CITY	Cleveland Ave (Maple to Lincoln)	\$ 471,495	Replace	2,193	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2019Q3	No	No
9124	Central Operating Area	LINDEN CITY	Jackson Ave. (Maple to Lincoln)	\$ 451,500	Replace	2,100	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2019Q3	No	No
9126	Central Operating Area	LINDEN CITY	Van Buren Ave (McCandless to Dead end.)	\$ 278,425	Replace	1,295	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2019Q3	No	No

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9127	Central Operating Area	LINDEN CITY	Pierce ave(bower to dead end)	\$ 162,755	Replace	757	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2019Q3	No	No
9140	Central Operating Area	LINDEN CITY	Keep St(between W St. Georges and N. Stiles St	\$ 297,775	Replace	1,385	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2019Q3	No	No
9141	Central Operating Area	LINDEN CITY	Ercama St (between W St. Georges Ave and W Henry St)	\$ 378,400	Replace	1,760	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2019Q3	No	No
9142	Central Operating Area	LINDEN CITY	Eruo St (between W St. Georges to W. Elm St)	\$ 479,880	Replace	2,232	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	90	2021Q3	No	No
9146	Central Operating Area	LINDEN CITY	Summit St(between W St. George Ave and W. Curtis St)	\$ 341,850	Replace	1,590	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2020Q3	No	No
9148	Central Operating Area	LINDEN CITY	Ainsworth St(between W St. George Ave to W. Curtis St.)	\$ 330,240	Replace	1,536	8.00	Ductile Iron	Unknown	6	CI	System Flows and Pressure	60	2020Q3	No	No
9150	Central Operating Area	LINDEN CITY	Orchard Ter.(between W. St. George Ave to Gesner St)	\$ 136,525	Replace	652	8.00	Ductile Iron	Unknown	6	CI	System Flows and Pressure	60	2020Q3	No	No
9151	Central Operating Area	LINDEN CITY	Gesner St(between N. Wood Ave to Laurita St.)	\$ 520,300	Replace	2,420	8.00	Ductile Iron	Unknown	6	CI	Water Quality	90	2020Q3	No	No
9158	Central Operating Area	LINDEN CITY	W. Henry St (between N Stiles St and N Wood Ave)	\$ 696,600	Replace	3,240	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	90	2020Q3	No	No
9161	Central Operating Area	LINDEN CITY	W. Elm St(between N. Stiles St and N. Wood Ave)	\$ 647,150	Replace	3,010	8.00	Ductile Iron	2010	8	DI	System Flows and Pressure	90	2021Q3	No	No
9162	Central Operating Area	LINDEN CITY	Knopf St(between N. Stiles St and N Wood Ave)	\$ 584,800	Replace	2,720	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2021Q3	No	No
9167	Central Operating Area	LINDEN CITY	W. Curtis St(between N. Stiles and N. Wood Ave)	\$ 766,905	Replace	3,567	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	90	2021Q3	No	No
9170	Central Operating Area	LINDEN CITY	Laurita St(between W. Curtis St and N. Stiles St.)	\$ 385,280	Replace	1,792	8.00	Ductile Iron	1930	4	CI	System Flows and Pressure	60	2021Q3	No	No
9172	Central Operating Area	LINDEN CITY	Miltonia St(between W. Curtis St and N Stiles St.)	\$ 477,085	Replace	2,219	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2021Q3	No	No
9173	Central Operating Area	LINDEN CITY	Lafayette St(between W Curtis and W Blancke St.)	\$ 447,200	Replace	2,080	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2021Q3	No	No
9174	Central Operating Area	LINDEN CITY	Spruce St (between W Curtis St and W Blancke St)	\$ 425,485	Replace	1,979	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2021Q3	No	No
9175	Central Operating Area	LINDEN CITY	Miner Ter (between W Curtis St to W Blancke St.)	\$ 409,360	Replace	1,904	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2021Q3	No	No
9176	Central Operating Area	LINDEN CITY	Brook St (between W Curtis St and W Blancke St)	\$ 391,730	Replace	1,822	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2021Q3	No	No
9180	Central Operating Area	LINDEN CITY	W Blancke St (between N Wood Ave to N Stiles St)	\$ 499,875	Replace	2,325	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2020Q3	No	No
9181	Central Operating Area	LINDEN CITY	W Price St (Between Donaldson Pl and Lumber St)	\$ 213,925	Replace	995	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2020Q3	No	No
9182	Central Operating Area	LINDEN CITY	Donaldson St (between W Price St to Dead End towards tracks)	\$ 142,975	Replace	665	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2020Q3	No	No
9613	Central Operating Area	LINDEN CITY	PSEG ROW Main replacement along railroad(from Kohler Inter south to the new hot box)	\$ 1,500,000	Replace	5,062	12.00	PVC	2000	10	DI	Safety and Reliability/Structural	120	2020Q3	No	No
9771	Central Operating Area	LINDEN CITY	Tremley Point Rd Phase 4 Loop	\$ 1,600,000	Replace	3,609	16.00	PVC	1950	12	CI	Safety and Reliability/Structural	90	2020Q3	No	No
7594	Southwest Operating Area	LINDENWOLD	Lindenwold - Pinegrove Ave, Monroe Ave, Wallace Ave	\$ 380,000	Replace	1,876	8.00	Ductile Iron	1970	2	GALV	Safety and Reliability/Structural	60	2019Q3	No	No
7603	Southwest Operating Area	LINDENWOLD	Lindenwold - Aston Martin Dr, Bentley Road, Mercedes Road, Lancia Pl, Delahaye Rd, Thunderbird Road, Healey Place	\$ 1,500,000	Replace	7,745	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	120	2019Q3	No	No
225	Coastal Operating Area	LINWOOD	Ocean Heights Avenue - Between Shore Road & Wabash Avenue	\$ 215,000	Replace	817	16.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	60	2019Q3	No	Yes
226	Coastal Operating Area	LINWOOD	Ocean Heights Avenue - Between Wabash Avenue & Steelman Avenue	\$ 217,300	Replace	837	16.00	Ductile Iron	1980's	4	Cast Iron	System Flows and Pressure	60	2019Q3	No	Yes
227	Coastal Operating Area	LINWOOD	Ocean Heights Avenue - Between Steelman Avenue & US Route 9	\$ 227,900	Replace	815	16.00	Ductile Iron	1960's	4	Cast Iron	System Flows and Pressure	60	2019Q3	No	Yes
6465	Coastal Operating Area	LINWOOD	Kirklin Avenue between Shore Road and New Road	\$ 587,500	Replace	2,325	12.00	Ductile Iron	1950's	6	AC	Safety and Reliability/Structural	90	2019Q3	No	Yes
6503	Coastal Operating Area	LINWOOD	Grammercy Avenue between Ocean Heights Ave and N. end of Road	\$ 300,000	Replace	940	12.00	Ductile Iron	1960's	6	CI	Safety and Reliability/Structural	60	2019Q3	No	Yes
6537	Coastal Operating Area	LINWOOD	Frances Avenue between US Rt 9 and Shore Road	\$ 598,500	Replace	2,394	8.00	Ductile Iron	1950's	6	AC	Safety and Reliability/Structural	90	2019Q3	No	Yes
6541	Coastal Operating Area	LINWOOD	W. Seaview Avenue between Shore Road and Wabash Avenue	\$ 108,750	Replace	453	8.00	Ductile Iron	1940's	2	CI	Safety and Reliability/Structural	30	2021Q4	No	Yes
6553	Coastal Operating Area	LINWOOD	Shore Road phase VII (LW PH 2) from Delmar Avenue to Belhaven Avenue	\$ 1,245,000	Replace	3,046	16.00	Ductile Iron	1910's	8	CI	Safety and Reliability/Structural	90	2021Q3	No	Yes
6557	Coastal Operating Area	LINWOOD	Shore Road phase VI (LW Ph 1) between Dee Drive to Delmar Avenue	\$ 1,330,000	Replace	4,004	16.00	Ductile Iron	1910's	8	CI	Safety and Reliability/Structural	120	2020Q3	No	Yes
8382	Coastal Operating Area	LINWOOD	Edgewood Avenue between Route 9 and Pine Street	\$ 305,000	Replace	1,219	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	60	2019Q3	No	No
9247	Coastal Operating Area	LINWOOD	Linwood Cleaning and Lining - 2018	\$ 4,200,000	Rehab	8,500	8.00	Other	1910	6	AC	Safety and Reliability/Structural	120	2018Q4	No	No
554	North Operating Area	LITTLE FALLS	Little Falls - E Main St from Paterson Ave to Browertown Rd	\$ 1,700,000	Replace	3,700	16.00	Ductile Iron	1930's	2	Ivanized St	Safety and Reliability/Structural	90	2018Q4	No	Yes

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9781	North Operating Area	LITTLE FALLS	C&L Little Falls phase 1 around 1st street	\$ 3,000,000	Rehab	17,500	6.00	Cast Iron	1940	6	CI	Water Quality	120	2020Q3	No	No
5815	Coastal Operating Area	LITTLE SILVER	N Lovett Ave Main Replacement	\$ 153,750	Replace	1,025	8.00	Ductile Iron	1950's	8	Cast Iron	System Flows and Pressure	60	2019Q3	No	Yes
5816	Coastal Operating Area	LITTLE SILVER	Woodland St Main Replacement	\$ 105,000	Replace	700	6.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	2019Q1	No	Yes
9706	Coastal Operating Area	LITTLE SILVER	Rumson Place Main Replacement Phase 1	\$ 1,200,000	Replace	562	36.00	Ductile Iron	1920	36	CI	Crossing Risk Reduction	60	2019Q1	No	No
9707	Coastal Operating Area	LITTLE SILVER	Rumson Place Main Replacement Phase 2	\$ 1,200,000	Replace	562	36.00	Ductile Iron	1920	36	CI	Crossing Risk Reduction	60	2019Q3	No	No
9708	Coastal Operating Area	LITTLE SILVER	Rumson Place Main Replacement Phase 3	\$ 1,200,000	Replace	3,358	36.00	Ductile Iron	1920	36	CI	Crossing Risk Reduction	90	2020Q3	No	No
9709	Coastal Operating Area	LITTLE SILVER	Rumson Place Main Replacement Phase 4	\$ 1,200,000	Replace	562	36.00	Ductile Iron	1920	36	CI	Relocation/Opportunity	60	2020Q1	No	No
9710	Coastal Operating Area	LITTLE SILVER	Rumson Place Main Replacement Phase 5	\$ 1,200,000	Replace	562	36.00	Ductile Iron	1920	36	CI	Safety and Reliability/Structural	60	2021Q1	No	No
9711	Coastal Operating Area	LITTLE SILVER	Rumson Place Main Replacement Phase 6	\$ 1,200,000	Replace	562	36.00	Ductile Iron	1920	36	CI	Crossing Risk Reduction	60	2021Q3	No	No
7754	Coastal Operating Area	LOCH ARBOUR	Edgemont Dr. 4" CI	\$ 290,000	Replace	2,900	8.00	Ductile Iron	1900	4	CI	Safety and Reliability/Structural	90	2020Q4	No	No
7825	Coastal Operating Area	LONG BRANCH	Lockwood Ave 2" CI & 2" GALV	\$ 340,000	Replace	1,700	8.00	Ductile Iron	1920	2	GALV	Safety and Reliability/Structural	60	2020Q3	No	No
7826	Coastal Operating Area	LONG BRANCH	Cummings Ave. 2" CI & Overlook Ave 2" GALV	\$ 600,000	Replace	3,000	8.00	Ductile Iron	1920	2	GALV	Safety and Reliability/Structural	90	2020Q3	No	No
6526	North Operating Area	LONG HILL TWP	Essex St from Passaic Ave to Warren Ave	\$ 650,000	Replace	1,975	8.00	Ductile Iron	1950's	Unknown	Unknown	Safety and Reliability/Structural	60	Complete	Yes	Yes
9736	North Operating Area	LONG HILL TWP	LONG HILL - Valley Rd to Long Hill Rd	\$ 1,800,000	Replace	2,983	20.00	Ductile Iron	1950	6	CI	System Flows and Pressure	90	2021Q3	No	No
6010	Southwest Operating Area	LUMBERTON TWP	Lumberton - Ross Street - Chestnut Street to Main Street	\$ 115,000	Replace	575	12.00	Ductile Iron	1970's	6	Unknown	System Flows and Pressure	60	2018Q4	No	Yes
6011	Southwest Operating Area	LUMBERTON TWP	Lumberton - Moore Street - Main Street to Chambers Street	\$ 80,750	Replace	425	8.00	Ductile Iron	1970's	6	Unknown	System Flows and Pressure	30	2018Q4	No	Yes
6012	Southwest Operating Area	LUMBERTON TWP	Lumberton - Chambers Street - Chestnut Street to Moore Street	\$ 85,500	Replace	450	8.00	Ductile Iron	1970's	4	Cast Iron	System Flows and Pressure	30	2018Q4	No	Yes
9721	Southwest Operating Area	LUMBERTON TWP	Lexington Avenue, Kilby Street, Richmond Avenue	\$ 600,000	Replace	2,621	12.00	Ductile Iron	1990	6	DI	System Flows and Pressure	90	2019Q4	No	No
7615	Southwest Operating Area	MAGNOLIA	Magnolia - Warwick Rd @ Atlantic Ave Railroad Crossing	\$ 200,000	Replace	157	8.00	Ductile Iron	1950	8	AC	Safety and Reliability/Structural	30	2019Q4	No	No
7822	Southwest Operating Area	MAGNOLIA	Warwick Road - Evesham Road to Atlantic Ave	\$ 350,000	Replace	1,632	8.00	Ductile Iron	1950	8	DI	Safety and Reliability/Structural	60	2019Q3	No	No
8574	Southwest Operating Area	MAGNOLIA	Magnolia - Camden Avenue, Brook Avenue, Williams Road, Paulson Drive, Fern Avenue, Phillips Avenue, Maryland Avenue, Marion Avenue, Davis Road, Johnson Place, and	\$ 1,960,800	Replace	10,320	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	120	2021Q3	No	No
9718	Southwest Operating Area	MAGNOLIA	Otter Branch Dr, Sherwood Ave, Grant Ave	\$ 750,000	Replace	3,814	8.00	Ductile Iron	1950	8	CI	Safety and Reliability/Structural	90	2021Q1	No	No
9109	Central Operating Area	MANVILLE BOROUGH	South St Main Replacement	\$ 285,000	Replace	1,000	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2020Q1	No	No
9117	Central Operating Area	MANVILLE BOROUGH	Washington Ave Main Replacement	\$ 22,800	Replace	520	8.00	Ductile Iron	1950	8	AC	Safety and Reliability/Structural	60	2020Q1	No	No
9139	Central Operating Area	MANVILLE BOROUGH	Filak Ave /South 2nd St Main Replacement	\$ 200,000	Replace	567	8.00	Ductile Iron	1950	4	CI	Safety and Reliability/Structural	60	2021Q1	No	No
9166	Central Operating Area	MANVILLE BOROUGH	South 16th Ave Main Replacement	\$ 300,000	Replace	896	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2020Q1	No	No
9171	Central Operating Area	MANVILLE BOROUGH	South 15th Ave main replacement	\$ 300,000	Replace	910	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2021Q1	No	No
9178	Central Operating Area	MANVILLE BOROUGH	South 14 Ave. Main Replacement	\$ 300,000	Replace	1,123	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2021Q1	No	No
9179	Central Operating Area	MANVILLE BOROUGH	South 13 Ave Main replacement	\$ 300,000	Replace	1,157	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2021Q1	No	No
9630	Central Operating Area	MANVILLE BOROUGH	Onka Street Main replace / tie in dead ends	\$ 533,000	Replace	1,600	8.00	Ductile Iron	1950	6	AC	Safety and Reliability	60	2019Q3	No	No
9701	Central Operating Area	MANVILLE BOROUGH	East Frech Ave. Main Replacement	\$ 350,000	Replace	500	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	60	2019Q1	No	No
5702	North Operating Area	MAPLEWOOD	Hickory Drive - Kermit to Ridgewood	\$ 250,000	Replace	1,150	8.00	Ductile Iron	1910's	4	Cast Iron	System Flows and Pressure	60	2021Q1	No	Yes
5704	North Operating Area	MAPLEWOOD	Maplewood Ave - Jefferson to Parker	\$ 192,000	Replace	850	12.00	Ductile Iron	1910's	8	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes
5705	North Operating Area	MAPLEWOOD	Maplewood Ave and Beach Pl - Maplewood Ave from Jefferson to Beach Pl and Beach Pl from Maplewood Av to Woodland	\$ 275,000	Replace	1,100	12.00	Ductile Iron	1910's	4	Cast Iron	System Flows and Pressure	60	2019Q1	No	Yes
5706	North Operating Area	MAPLEWOOD	Maplewood Ave - Lenox Ave to Beach Place	\$ 500,000	Replace	2,000	12.00	Ductile Iron	1910's	4	Cast Iron	System Flows and Pressure	90	2019Q3	No	Yes
5712	North Operating Area	MAPLEWOOD	Mountain Ave from Ridgewood to Windthrop Pl.	\$ 231,000	Replace	1,030	8.00	Ductile Iron	1910's	4	Cast Iron	System Flows and Pressure	60	2019Q1	No	Yes
9301	North Operating Area	MAPLEWOOD	16" in Oakland @ Kensington, then Prospect, Elmwood, Boyden and Parker to the Irvington line	\$ 2,300,000	Replace	9,358	16.00	Ductile Iron	1910	16	CI	Safety and Reliability/Structural	120	2020Q3	No	No

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9626	North Operating Area	MAPLEWOOD	Baker St from Ridgewood Rd to Burnet Ave	\$ 375,000	Replace	1,771	8.00	Ductile Iron	1920	8	CI	Safety and Reliability/Structural	60	2019Q3	No	No
6308	North Operating Area	MENDHAM BOROUGH	Prospect Street from Hilltop Rd to End	\$ 281,750	Replace	1,610	6.00	Ductile Iron	Unknown	6	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes
6324	North Operating Area	MENDHAM BOROUGH	Hillstead Road from E. Main St to End	\$ 300,000	Replace	1,610	6.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2020Q3	No	Yes
6327	North Operating Area	MENDHAM BOROUGH	Mountain Side Road from Mountain Ave to west of hydrant HMH-175	\$ 766,000	Replace	3,830	8.00	Ductile Iron	Unknown	12	Cast Iron	System Flows and Pressure	90	2021Q3	No	Yes
6328	North Operating Area	MENDHAM BOROUGH	Maple Ave from Mountain Ave to Garabrant St	\$ 393,000	Replace	1,965	8.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability	60	2021Q3	No	Yes
6329	North Operating Area	MENDHAM BOROUGH	Garabrant St from Mountain Ave to Maple Ave	\$ 260,000	Replace	1,300	8.00	Ductile Iron	Unknown	3	Cast Iron	Safety and Reliability	60	2021Q3	No	Yes
6330	North Operating Area	MENDHAM BOROUGH	East Main Street from Cold Hill Rd to Mountain Ave	\$ 1,732,500	Replace	5,250	12.00	Ductile Iron	Unknown	2	Cast Iron	System Flows and Pressure	120	2021Q3	No	Yes
6340	North Operating Area	MENDHAM BOROUGH	Hilltop Rd from Talmage Rd to Bernardsville Rd	\$ 2,297,775	Replace	6,565	16.00	Ductile Iron	Unknown	6	Cast Iron	System Flows and Pressure	120	2019Q3	No	Yes
7036	North Operating Area	MENDHAM BOROUGH	Knollwood Well to Horizon tank feed	\$ 750,000	Replace	3,000	12.00	Other	1960's	Unknown	Unknown	Safety and Reliability	90	2020Q1	No	Yes
7639	North Operating Area	MENDHAM BOROUGH	Talmage Road between Coventry Road and Corey Lane	\$ 648,000	Replace	3,599	8.00	Ductile Iron	1990	4	CI	System Flows and Pressure	90	2019Q3	No	No
9695	North Operating Area	MENDHAM TWP	Horizon Drive	\$ 858,000	Replace	2,615	12.00	Ductile Iron	1980	8	DI	System Flows and Pressure	90	2019Q1	No	No
9784	North Operating Area	MENDHAM TWP	clean & line mains around Cold Hill Rd	\$ 3,000,000	Rehab	21,616	6.00	Cast Iron	1980	4	CI	Water Quality	120	2021Q3	No	No
222	Coastal Operating Area	MIDDLE TWP	Mechanic Street between Goshen Road and Magnolia Avenue	\$ 465,000	Replace	1,243	12.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes
223	Coastal Operating Area	MIDDLE TWP	Goshen Road - Between Mechanic Street & Railroad Avenue (CM-B-4)	\$ 175,000	Replace	660	12.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes
5256	Coastal Operating Area	MIDDLE TWP	Valley Road between Pacific and End	\$ 50,000	Replace	195	8.00	Ductile Iron	Unknown	8.00	Cast Iron	System Flows and Pressure	30	2020Q3	No	Yes
7550	Coastal Operating Area	MIDDLE TWP	Crest Haven	\$ 1,095,000	Replace	4,271	16.00	Ductile Iron	1970	12	AC	System Flows and Pressure	120	2021Q3	No	No
5429	Coastal Operating Area	MIDDLETOWN	10th Street Main Replacement	\$ 195,000	Replace	1,300	8.00	Ductile Iron	1950's	4	Cast Iron	Safety and Reliability	60	2021Q3	No	Yes
5468	Coastal Operating Area	MIDDLETOWN	Middletown - Pine St main Replacement	\$ 129,000	Replace	860	8.00	Ductile Iron	1930's	6	Ductile Iron	Relocation/Opportunity	60	2020Q3	No	Yes
5818	Coastal Operating Area	MIDDLETOWN	Montana Ave Main Replacement	\$ 210,000	Replace	1,400	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes
5819	Coastal Operating Area	MIDDLETOWN	York Ave Main Replacement	\$ 168,750	Replace	957	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes
7234	Coastal Operating Area	MIDDLETOWN	Middletown - Bray Avenue Bridge over Pews Creek Phase 2	\$ 100,000	Replace	500	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2019Q3	No	No
7624	Coastal Operating Area	MIDDLETOWN	Turner Drive Main Replacement	\$ 400,000	Replace	1,148	8.00	Ductile Iron	1950	2	CI	Safety and Reliability	60	2021Q3	No	No
7920	Coastal Operating Area	MIDDLETOWN	Clinton Ave. 2" CI & 6" AC	\$ 3,600	Replace	1,800	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	60	2021Q3	No	No
7921	Coastal Operating Area	MIDDLETOWN	Clinton Place 2" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
7922	Coastal Operating Area	MIDDLETOWN	Greene Ave. 2" CI & 6" CI	\$ 440,000	Replace	2,200	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	90	2021Q3	No	No
7924	Coastal Operating Area	MIDDLETOWN	Clairmont Ave. 2.25" CI, 6" CI & 2" CI	\$ 160,000	Replace	800	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
7926	Coastal Operating Area	MIDDLETOWN	Railroad Ave. 2" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	60	2019Q3	No	No
7927	Coastal Operating Area	MIDDLETOWN	Myrtle Ave. 2" CI	\$ 80,000	Replace	400	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	30	2019Q3	No	No
7929	Coastal Operating Area	MIDDLETOWN	Lohsen Ave. 2" CI	\$ 160,000	Replace	800	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	60	2019Q3	No	No
7948	Coastal Operating Area	MIDDLETOWN	Broad St. 6" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	30	2019Q3	No	No
7955	Coastal Operating Area	MIDDLETOWN	Eastmond Pl 2" CI	\$ 40,000	Replace	200	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	30	2021Q3	No	No
7956	Coastal Operating Area	MIDDLETOWN	Hudson Ave. 2" CI & 6" CI	\$ 320,000	Replace	1,600	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
7957	Coastal Operating Area	MIDDLETOWN	Mills Ave, Middletown, NJ	\$ 300,000	Replace	1,500	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
7958	Coastal Operating Area	MIDDLETOWN	Texas Rd. 2" CI & 2" CU	\$ 40,000	Replace	200	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	30	2021Q3	No	No
7959	Coastal Operating Area	MIDDLETOWN	Briarcliff Pl. 2" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
7961	Coastal Operating Area	MIDDLETOWN	Mercer Ave. 2" CI	\$ 300,000	Replace	1,500	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
7966	Coastal Operating Area	MIDDLETOWN	Orchard Pl. 2" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural	30	2021Q3	No	No

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9476	Southwest Operating Area	MT EPHRAIM	Valley Road	\$ 160,000	Replace	747	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	60	2019Q3	No	No
581	Coastal Operating Area	NEPTUNE	Neptune - Prospect Avenue from Brighton to Oakdale and from Fairfield to Riverside	\$ 525,000	Replace	3,500	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural Safety and Reliability/Structural	90	2018Q4	Yes	Yes
5655	Coastal Operating Area	NEPTUNE	Ocean Ave- Webb Ave to Main Ave	\$ 125,000	Replace	571	12.00	Ductile Iron	Unknown	4	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural	60	Complete	Yes	Yes
5656	Coastal Operating Area	NEPTUNE	Ocean Ave- Pitman Ave to Ocean Pkwy	\$ 110,000	Replace	311	12.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural	30	Complete	Yes	Yes
5975	Coastal Operating Area	NEPTUNE	Vernon Ave	\$ 175,000	Replace	1,000	8.00	Ductile Iron	1960's	2	Cast Iron	Safety and Reliability	60	2018Q4	Yes	Yes
5980	Coastal Operating Area	NEPTUNE	Clayton ave	\$ 150,000	Replace	850	8.00	Ductile Iron	1940's	16.00	Unknown	Water Quality	60	2018Q4	Yes	Yes
6023	Coastal Operating Area	NEPTUNE	Audrey Place	\$ 70,000	Replace	226	8.00	Ductile Iron	1940's	8.00	Cast Iron	Safety and Reliability	30	2018Q4	Yes	Yes
6037	Coastal Operating Area	NEPTUNE	Park Pl Neptune SRH	\$ 120,000	Replace	546	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability	60	2018Q4	Yes	Yes
7041	Coastal Operating Area	NEPTUNE	Greenwood Ave Main Replacement	\$ 60,000	Replace	400	6.00	Ductile Iron	1920's	Unknown	Unknown	Safety and Reliability/Structural System Flows and	30	2018Q4	Yes	Yes
7484	Coastal Operating Area	NEPTUNE	MT TABOR WAY	\$ 300,000	Replace	1,949	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
7739	Coastal Operating Area	NEPTUNE	Inskip Ave. 4" CI	\$ 140,000	Replace	1,416	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
7742	Coastal Operating Area	NEPTUNE	Clark Ave. 4" CI	\$ 40,000	Replace	401	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	30	2021Q1	No	No
7744	Coastal Operating Area	NEPTUNE	Embury Ave. 4" CI	\$ 140,000	Replace	1,400	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
7747	Coastal Operating Area	NEPTUNE	Pitman Ave. 4" CI	\$ 140,000	Replace	1,400	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
7748	Coastal Operating Area	NEPTUNE	Ocean Pathway 4" CI	\$ 40,000	Replace	400	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	30	2021Q1	No	No
7749	Coastal Operating Area	NEPTUNE	Bath Ave. 4" CI	\$ 70,000	Replace	700	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
7750	Coastal Operating Area	NEPTUNE	Pilgrim Pathway 4" CI	\$ 30,000	Replace	300	8.00	Ductile Iron	1920	4	CI	Pressure Safety and Reliability/Structural Safety and Reliability/Structural	30	2021Q1	No	No
8231	Coastal Operating Area	NEPTUNE	Greenwood Pl. 2" GALV	\$ 220,000	Replace	1,100	8.00	Ductile Iron	1940	2	GALV	Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
8233	Coastal Operating Area	NEPTUNE	Carton Ave. 4" CI	\$ 164,000	Replace	820	8.00	Ductile Iron	1940	4	CI	Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
8237	Coastal Operating Area	NEPTUNE	Fairfield Way 4" CI	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1940	4	CI	Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
8238	Coastal Operating Area	NEPTUNE	Woodmere Dr. 4" CI	\$ 140,000	Replace	700	8.00	Ductile Iron	1940	4	CI	Reliability/Structural Safety and Reliability/Structural	60	2021Q1	No	No
8239	Coastal Operating Area	NEPTUNE	Cedar Pl. 2" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1940	2	CI	Reliability/Structural Safety and Reliability/Structural	30	2021Q1	No	No
8243	Coastal Operating Area	NEPTUNE	Tremont Dr. 2" GALV, 4" CI, & 6" AC	\$ 440,000	Replace	2,200	8.00	Ductile Iron	1930	6	AC	Reliability/Structural Safety and Reliability/Structural	90	2021Q1	No	No
8497	Coastal Operating Area	NEPTUNE	Robin Rd. 6" CI	\$ 180,000	Replace	900	8.00	Ductile Iron	1930	6	CI	Reliability/Structural Safety and Reliability/Structural	60	2018Q4	No	No
8658	Coastal Operating Area	NEPTUNE	6th Ave. 2" CI & 6" CI	\$ 700,000	Replace	3,000	8.00	Ductile Iron	1920	6	CI	Reliability/Structural Safety and Reliability/Structural	90	2021Q3	No	No
8668	Coastal Operating Area	NEPTUNE	New York Rd. 6" CI	\$ 92,000	Replace	460	8.00	Ductile Iron	1960	6	CI	Reliability/Structural Safety and Reliability/Structural	30	2018Q4	No	No
8670	Coastal Operating Area	NEPTUNE	Waterview Ct. 6" CI	\$ 68,000	Replace	340	8.00	Ductile Iron	1960	6	CI	Reliability/Structural Safety and Reliability/Structural	30	2018Q4	No	No
8671	Coastal Operating Area	NEPTUNE	Albany Rd. 6" CI	\$ 188,000	Replace	940	8.00	Ductile Iron	1960	6	CI	Reliability/Structural Safety and Reliability/Structural	60	2018Q4	No	No
9564	Coastal Operating Area	NEPTUNE	W Lake Ave Main Replacement	\$ 135,000	Replace	751	6.00	Ductile Iron	1950	6	CI	Reliability/Structural Safety and Reliability/Structural	60	2018Q4	No	No
9566	Coastal Operating Area	NEPTUNE	Neptune Blvd Main Replacement	\$ 190,260	Replace	1,057	8.00	Ductile Iron	1990	6	DI	Reliability/Structural Safety and Reliability/Structural	60	2018Q4	No	No
9568	Coastal Operating Area	NEPTUNE	Tremont Dr Main Replacement	\$ 133,920	Replace	744	6.00	Ductile Iron	1940	4	CI	Reliability/Structural Safety and Reliability/Structural	60	2018Q4	No	No
5628	Coastal Operating Area	NEPTUNE CITY	County R140A (memorial Dr) and Evergreen ave	\$ 30,000	Replace	250	8.00	Ductile Iron	1920's	16	restos Cem	Reliability/Structural Safety and Reliability/Structural	30	2020Q3	No	Yes
5981	Coastal Operating Area	NEPTUNE CITY	Concourse	\$ 480,000	Replace	3,520	8.00	Ductile Iron	1960's	16.00	Unknown	Reliability/Structural Safety and Reliability/Structural	90	2018Q4	Yes	Yes
7796	Coastal Operating Area	NEPTUNE CITY	Stratford Ave. 2.5" CI	\$ 80,000	Replace	800	8.00	Ductile Iron	1930	2	CI	Reliability/Structural Safety and Reliability/Structural	60	2019Q1	No	No
7797	Coastal Operating Area	NEPTUNE CITY	Ivy Place 2" CI	\$ 60,000	Replace	600	8.00	Ductile Iron	1930	2	CI	Reliability/Structural Safety and Reliability/Structural	60	2019Q1	No	No
8253	Coastal Operating Area	NEPTUNE CITY	Bennett Ave. 6" CI	\$ 260,000	Replace	1,300	8.00	Ductile Iron	1920	6	CI	Reliability/Structural Safety and Reliability/Structural	60	2019Q1	No	No
8254	Coastal Operating Area	NEPTUNE CITY	Prospect St. 6" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1920	6	CI	Reliability/Structural	60	2019Q3	No	No

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8256	Coastal Operating Area	NEPTUNE CITY	3rd Ave. 2" CI & 6" CI	\$ 180,000	Replace	723	8.00	Ductile Iron	1960	2	CI	Safety and Reliability/Structural	60	2018Q4	No	No
8257	Coastal Operating Area	NEPTUNE CITY	Hillside Ave. 2" CI	\$ 180,000	Replace	900	6.00	Ductile Iron	1960	2	CI	Safety and Reliability/Structural	60	2021Q1	No	No
8259	Coastal Operating Area	NEPTUNE CITY	Summit Ave. 2" CI & 2" GALV	\$ 160,000	Replace	800	6.00	Ductile Iron	1970	2	GALV	Safety and Reliability/Structural	60	2021Q1	No	No
8260	Coastal Operating Area	NEPTUNE CITY	Woodland Ave. 2" CI & 2" GALV	\$ 88,000	Replace	440	6.00	Ductile Iron	1920	2	GALV	Safety and Reliability/Structural	30	2019Q3	No	No
8262	Coastal Operating Area	NEPTUNE CITY	Wilson Ave. 2" CI	\$ 120,000	Replace	600	6.00	Ductile Iron	1960	2	CI	Safety and Reliability/Structural	60	2019Q3	No	No
8263	Coastal Operating Area	NEPTUNE CITY	Smock St. 2" GALV	\$ 104,000	Replace	520	8.00	Ductile Iron	1960	2	GALV	Safety and Reliability/Structural	60	2021Q1	No	No
8268	Coastal Operating Area	NEPTUNE CITY	McAneny St. 2.25" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2019Q1	No	No
8272	Coastal Operating Area	NEPTUNE CITY	Ridge Ave. 6" CI & 8" CI	\$ 520,000	Replace	2,600	8.00	Ductile Iron	1920	8	CI	Safety and Reliability/Structural	90	2019Q3	No	No
8619	Coastal Operating Area	NEPTUNE CITY	Union Ave. 6" CI	\$ 200,000	Replace	2,455	8.00	Ductile Iron	1970	6	CI	Safety and Reliability/Structural	90	2018Q4	No	No
8621	Coastal Operating Area	NEPTUNE CITY	Neptune Ave./17 6" CI & 8" CI	\$ 424,000	Replace	2,120	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	90	2019Q3	No	No
8728	Coastal Operating Area	NEPTUNE CITY	TFH Way 8" CI	\$ 184,000	Replace	920	8.00	Ductile Iron	1920	8	CI	Safety and Reliability/Structural	60	2019Q3	No	No
557	North Operating Area	NEW PROVIDENCE	New Providence - Livingston Ave. from Central to Springfield Ave	\$ 1,200,000	Replace	3,296	8.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability/Structural	90	Complete	Yes	Yes
6165	North Operating Area	NEW PROVIDENCE	Springfield Ave. Ph 4, from Salt Brook to Gales Ave.	\$ 875,000	Replace	3,500	12.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	90	2019Q3	No	Yes
6166	North Operating Area	NEW PROVIDENCE	New Providence - Springfield Ave. Ph 5 from Gales Drive to Maple Street	\$ 875,000	Replace	3,500	12.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	90	2019Q3	No	Yes
6812	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Passaic St from Springfield Ave to Commonwealth Ave	\$ 560,000	Replace	2,800	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	90	2020Q1	No	Yes
6816	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Runnymede Pkwy from Springfield Ave and Ridgeview Ave	\$ 440,000	Replace	2,200	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	90	2020Q3	No	Yes
6846	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Southgate Rd from South St to Hathaway Dr	\$ 560,000	Replace	2,800	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	90	2020Q3	No	Yes
7523	North Operating Area	NEW PROVIDENCE	Springfield Ave. Ph 3 from Central Ave. to Salt Brook	\$ 625,000	Replace	2,500	12.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	90	2019Q3	No	No
9302	North Operating Area	NEW PROVIDENCE	Passaic Ave - Passaic River bridge replacement	\$ 200,000	Replace	607	12.00	Ductile Iron	1940	8	CI	System Flows and Pressure	60	2018Q4	No	No
9518	Central Operating Area	NORTH PLAINFIELD BOROUGH	Belmont Ave/Leonard Pl	\$ 274,125	Replace	1,277	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2021Q3	No	No
9519	Central Operating Area	NORTH PLAINFIELD BOROUGH	Willard Pl	\$ 277,350	Replace	1,154	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2021Q3	No	No
9520	Central Operating Area	NORTH PLAINFIELD BOROUGH	Corbett Pl(Mountain to Lewis St)	\$ 174,580	Replace	782	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	60	2021Q3	No	No
9521	Central Operating Area	NORTH PLAINFIELD BOROUGH	Mall Dr(Meadowbrook Dr to circle around back to Meadowbrook Dr)	\$ 817,000	Replace	3,868	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2021Q3	No	No
5597	Coastal Operating Area	NORTHFIELD	Cove Avenue from Shore Road to end of Cove Avenue	\$ 160,000	Replace	634	4.00	Ductile Iron	1930's	8	Cast Iron	Relocation/Opportunity	60	2021Q3	No	Yes
6570	Coastal Operating Area	NORTHFIELD	Chestnut Avenue between 2nd Ave and Maple Ave	\$ 272,500	Replace	1,091	8.00	Ductile Iron	1930's	8	CI	Safety and Reliability/Structural	60	2021Q3	No	Yes
6916	Coastal Operating Area	NORTHFIELD	County Club Drive, Circle Dr & Heather Dr Main Replacements	\$ 362,500	Replace	1,450	8.00	Ductile Iron	1950's	2	CI	System Flows and Pressure	60	2021Q3	No	Yes
7576	Coastal Operating Area	NORTHFIELD	Shore Road Phase V between Rosedale Avenue to Dee Drive	\$ 1,330,000	Replace	3,763	16.00	Ductile Iron	1910	8	CI	System Flows and Pressure	90	2019Q1	No	No
8290	Coastal Operating Area	NORTHFIELD	Mill Road between Philmar Drive and Wabash Ave.	\$ 822,500	Replace	2,416	12.00	Ductile Iron	1990	10	CI	Safety and Reliability/Structural	90	2021Q1	No	No
5731	Southwest Operating Area	OAKLYN	Oaklyn - East Lakeview Drive - White Horse Pike to Johnson Avenue	\$ 106,400	Replace	560	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	2019Q1	No	Yes
9716	Southwest Operating Area	OAKLYN	White Horse Pike	\$ 1,200,000	Replace	4,805	8.00	Ductile Iron	1900	6	CI	Safety and Reliability/Structural	120	2020Q3	No	No
563	Coastal Operating Area	OCEAN	Ocean - Highwood from Woodcrest to Hyf 56 (Brookside)	\$ 375,000	Replace	2,500	8.00	Ductile Iron	1920's	2	Ivanized St	Safety and Reliability/Structural	90	2020Q3	No	Yes
6131	Coastal Operating Area	OCEAN	Michael Avenue from Berger Avenue to Garfield Avenue	\$ 149,625	Replace	855	6.00	Ductile Iron	1950's	12	Cast Iron	Safety and Reliability/Structural	60	2021Q3	No	Yes
6151	Coastal Operating Area	OCEAN	Overbrook Ave from Roosevelt Rd to HOT-22	\$ 112,000	Replace	640	6.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2021Q3	No	Yes
6160	Coastal Operating Area	OCEAN	Jerome Avenue from Larchwood Avenue to Michael Avenue	\$ 342,000	Replace	1,726	6.00	Ductile Iron	1950's	8	Steel	Safety and Reliability	60	2021Q3	No	Yes
6162	Coastal Operating Area	OCEAN	Lawrence Avenue from Larchwood Avenue to Michael Avenue	\$ 124,250	Replace	710	6.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability	60	2021Q3	No	Yes
6164	Coastal Operating Area	OCEAN	Grant Avenue from Monmouth Road to Norwood Avenue	\$ 627,000	Replace	3,135	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	90	2021Q3	No	Yes
6171	Coastal Operating Area	OCEAN	Roosevelt Ave from Monmoth Rd to Norwood Ave	\$ 738,000	Replace	3,280	12.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	2021Q3	No	Yes

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7539	Coastal Operating Area	OCEAN	Laurel Ave	\$ 100,000	Replace	411	6.00	Ductile Iron	1930	2	CI	System Flows and Pressure Safety and Reliability/Structural Safety and	30	2020Q3	No	No
7758	Coastal Operating Area	OCEAN	Beechwood Ave. 2" CI	\$ 60,000	Replace	600	8.00	Ductile Iron	1930	2	CI	Reliability/Structural Safety and	60	2020Q3	No	No
7761	Coastal Operating Area	OCEAN	Staffa St. 2" GALV	\$ 30,000	Replace	300	8.00	Ductile Iron	1930	2	GALV	Reliability/Structural Safety and	30	2020Q4	No	No
8298	Coastal Operating Area	OCEAN	Garfield Ave. 2" CI, 6" AC, & 6" CI	\$ 320,000	Replace	1,600	6.00	Ductile Iron	1950	2	CI	Reliability/Structural Safety and	60	2021Q3	No	No
8371	Coastal Operating Area	OCEAN	Griffin Pl. 6" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1920	6	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8386	Coastal Operating Area	OCEAN	Garven Ave. 6" CI	\$ 300,000	Replace	1,500	8.00	Ductile Iron	1930	6	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8387	Coastal Operating Area	OCEAN	Unami Ave. 6" CI	\$ 280,000	Replace	1,400	8.00	Ductile Iron	1930	6	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8388	Coastal Operating Area	OCEAN	Woodlock Ave. 6" CI	\$ 200,000	Replace	1,000	8.00	Ductile Iron	1900	6	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8389	Coastal Operating Area	OCEAN	Camp Ave. 6" CI	\$ 120,000	Replace	600	8.00	Ductile Iron	1900	6	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8390	Coastal Operating Area	OCEAN	North Wanamassa Dr. 6" CI	\$ 420,000	Replace	2,100	8.00	Ductile Iron	1900	6	CI	Reliability/Structural Safety and	90	2020Q3	No	No
8392	Coastal Operating Area	OCEAN	Wanamassa Point Rd. 6" CI	\$ 140,000	Replace	700	8.00	Ductile Iron	1900	6	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8394	Coastal Operating Area	OCEAN	Hetrick Point Rd. 2" CI & 4" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1900	2	CI	Reliability/Structural Safety and	60	2020Q3	No	No
8399	Coastal Operating Area	OCEAN	Sunset Ave. 6" CI & 8" CI	\$ 1,500,000	Replace	6,000	8.00	Ductile Iron	1930	6	CI	Reliability/Structural Safety and	120	2020Q3	No	No
8742	Coastal Operating Area	OCEAN	Allaire Ave. 6" CI & 2" CI	\$ 320,000	Replace	1,600	8.00	Ductile Iron	1960	6	CI	Reliability/Structural Safety and	60	2021Q3	No	No
8751	Coastal Operating Area	OCEAN	Madison Ave. 6" CI & 2" CI	\$ 140,000	Replace	700	8.00	Ductile Iron	1960	2	CI	Reliability/Structural Safety and	60	2021Q3	No	No
8880	Coastal Operating Area	OCEAN	Interlaken Ave. 6" AC, & 6" CI	\$ 320,000	Replace	1,600	8.00	Ductile Iron	1920	6	AC	Reliability/Structural Safety and	60	2021Q3	No	No
231	Coastal Operating Area	OCEAN CITY	10th Street - Between Ocean Avenue & Boardwalk (OC-B-1) (Ocean Ave Mort Ends 2015)	\$ 237,500	Replace	939	12.00	PVC	1920's	4	Ivanized St	System Flows and Pressure Safety and	60	2020Q1	No	Yes
232	Coastal Operating Area	OCEAN CITY	Little Atlantic Avenue - Between 10th Street & End of Road	\$ 39,375	Replace	135	8.00	PVC	1920's	4	Cast Iron	System Flows and Pressure Safety and	30	2019Q1	No	Yes
233	Coastal Operating Area	OCEAN CITY	Brighton Place - Between Atlantic Avenue & Corinthian Avenue	\$ 270,000	Replace	1,328	8.00	PVC	1920's	4	Cast Iron	System Flows and Pressure Safety and	60	2020Q1	No	Yes
5346	Coastal Operating Area	OCEAN CITY	Stenton Place from Corinthian Avenue to Boardwalk	\$ 70,000	Replace	236	6.00	PVC	1920's	4	Cast Iron	System Flows and Pressure Safety and Relocation/Opportunity	30	2021Q1	No	Yes
5652	Coastal Operating Area	OCEAN CITY	51st Street between Central Avenue and Asbury Avenue	\$ 72,500	Replace	281	8.00	Ductile Iron	1940's	6	Jestos Cem	System Flows and Pressure Safety and	30	2021Q4	No	Yes
6088	Coastal Operating Area	OCEAN CITY	Simpson Avenue between 36th Street and 35th Street	\$ 156,250	Replace	627	8.00	PVC	1950's	4	Ivanized St	Reliability/Structural Safety and	60	2019Q4	No	Yes
6090	Coastal Operating Area	OCEAN CITY	35th Street between Asbury Avenue and Bay Avenue	\$ 325,000	Replace	1,291	12.00	PVC	1950's	4	Cast Iron	System Flows and Pressure Safety and	60	2019Q4	No	Yes
6249	Coastal Operating Area	OCEAN CITY	Bay Ave replacement from 22nd to 18th	\$ 590,000	Replace	2,358	12.00	PVC	1950's	6	Cast Iron	Reliability/Structural Safety and	90	2019Q1	No	Yes
6253	Coastal Operating Area	OCEAN CITY	Bay Ave replacement from 4th to 2nd	\$ 220,600	Replace	1,103	12.00	PVC	1910's	6	Cast Iron	Reliability/Structural Safety and	60	2018Q4	No	Yes
6265	Coastal Operating Area	OCEAN CITY	Central Ave replacement from 58th to 55th	\$ 425,000	Replace	1,700	8.00	PVC	1940's	6	Cast Iron	Reliability/Structural Safety and	60	2018Q4	No	Yes
6267	Coastal Operating Area	OCEAN CITY	Ocean Ave replacement from 7th to 4th	\$ 425,000	Replace	1,638	8.00	PVC	1910's	6	Cast Iron	Reliability/Structural Safety and	60	2021Q1	No	Yes
6271	Coastal Operating Area	OCEAN CITY	Edinburgh Rd replacement from end to Wesley	\$ 323,750	Replace	1,487	8.00	PVC	1950's	6	Cast Iron	Reliability/Structural Safety and	60	2020Q4	No	Yes
6272	Coastal Operating Area	OCEAN CITY	Glenwood Dr replacement from end to Anchor	\$ 357,000	Replace	1,723	8.00	PVC	1950's	6	Jestos Cem	Reliability/Structural Safety and	60	2020Q1	No	Yes
6274	Coastal Operating Area	OCEAN CITY	Bay Ave replacement from 6th Street to 4th Street	\$ 293,750	Replace	1,171	12.00	PVC	1930's	6	Cast Iron	Reliability/Structural Safety and	60	2018Q4	No	Yes
6371	Coastal Operating Area	OCEAN CITY	27th St replacement from Central to Alley of Central and Wesley	\$ 40,000	Replace	157	8.00	PVC	1920's	1	Cast Iron	Reliability/Structural Safety and	30	2021Q4	No	Yes
6375	Coastal Operating Area	OCEAN CITY	10th St replacement from end to Palen	\$ 20,000	Replace	59	8.00	PVC	1920's	2	Cast Iron	Reliability/Structural Safety and	30	2021Q1	No	Yes
6376	Coastal Operating Area	OCEAN CITY	15th St replacement from West to end	\$ 41,250	Replace	201	8.00	PVC	Unknown	2	Ivanized St	Reliability/Structural Safety and	30	2021Q4	No	Yes
6381	Coastal Operating Area	OCEAN CITY	25th St replacement from Wesley to Haven	\$ 317,500	Replace	1,263	8.00	PVC	1910's	6	Ivanized St	Reliability/Structural Safety and	60	2021Q1	No	Yes
6382	Coastal Operating Area	OCEAN CITY	44th St replacement from West to Central	\$ 148,750	Replace	553	8.00	PVC	1920's	8	Ivanized St	Reliability/Structural Safety and	60	2021Q1	No	Yes
6384	Coastal Operating Area	OCEAN CITY	36th St replacement from West to Beach	\$ 212,500	Replace	850	8.00	PVC	1950's	2	Cast Iron	Reliability/Structural Safety and	60	2019Q4	No	Yes
6388	Coastal Operating Area	OCEAN CITY	Saint Albans Pl replacement from Wesley to Boardwalk	\$ 47,500	Replace	257	8.00	PVC	1960's	2	CI	Reliability/Structural Safety and	30	2021Q4	No	Yes

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6390	Coastal Operating Area	OCEAN CITY	2nd St replacement from Bay to Simpson	\$ 81,750	Replace	296	8.00	PVC	1920's	4	CI	Safety and Reliability/Structural	30	2018Q4	No	Yes
6393	Coastal Operating Area	OCEAN CITY	5th St replacement from Ocean to Beach	\$ 412,500	Replace	1,659	8.00	PVC	1930's	6	CI	Safety and Reliability/Structural	60	2021Q4	No	Yes
6395	Coastal Operating Area	OCEAN CITY	Delancey Pl replacement from Atlantic to Corinthian	\$ 266,250	Replace	1,065	8.00	PVC	1930's	4	CI	Safety and Reliability/Structural	60	2021Q4	No	Yes
6397	Coastal Operating Area	OCEAN CITY	Saint James Pl replacement from Atlantic to Corinthian Ave.	\$ 270,000	Replace	1,078	8.00	PVC	1910's	4	CI	Safety and Reliability/Structural	60	2021Q4	No	Yes
6415	Coastal Operating Area	OCEAN CITY	30th St replacement from West to Central	\$ 157,500	Replace	581	8.00	PVC	1920's	6	AC	Safety and Reliability/Structural	60	2021Q4	No	Yes
6417	Coastal Operating Area	OCEAN CITY	Pleasure Avenue (between 6th - 7th Street) 6th Street (between Bay Ave.- Pleasure Ave.)	\$ 187,500	Replace	719	8.00	PVC	1910's	4	CI	Safety and Reliability/Structural	60	2018Q4	No	Yes
6438	Coastal Operating Area	OCEAN CITY	48th St replacement from West to Central	\$ 146,250	Replace	532	8.00	PVC	1950's	2	GALV	Safety and Reliability/Structural	60	2021Q4	No	Yes
6446	Coastal Operating Area	OCEAN CITY	55th St replacement from Bay Ave to Central Ave	\$ 380,250	Replace	1,521	12.00	PVC	1970's	8	AC	Safety and Reliability/Structural	60	2018Q4	No	Yes
6502	Coastal Operating Area	OCEAN CITY	Ferndale Drive between Spruce Road and Anchor Road	\$ 295,000	Replace	1,049	8.00	PVC	1950's	6	AC	Safety and Reliability/Structural	60	2020Q1	No	Yes
7560	Coastal Operating Area	OCEAN CITY	W. 17th Street Bridge	\$ 150,000	Replace	112	8.00	Ductile Iron	1950	6	DI	System Flows and Pressure	30	2018Q4	No	No
8634	Coastal Operating Area	OCEAN CITY	Bay Avenue between 22nd St. & 26th St.	\$ 592,750	Replace	2,372	12.00	PVC	1940	12	AC	System Flows and Pressure	90	2019Q1	No	No
8642	Coastal Operating Area	OCEAN CITY	Haven Avenue between 35th Street & 36th Street to West Avenue	\$ 225,000	Replace	551	8.00	PVC	1950	8	AC	System Flows and Pressure	60	2019Q4	No	No
8756	Coastal Operating Area	OCEAN CITY	Cardiff Road & West Belfast Road	\$ 342,250	Replace	1,369	8.00	PVC	1930	4	CI	Safety and Reliability/Structural	60	2020Q4	No	No
8770	Coastal Operating Area	OCEAN CITY	E. Atlantic Avenue between Battersea Road and Gull Road	\$ 330,250	Replace	1,321	16.00	Ductile Iron	1930	4	CI	Safety and Reliability/Structural	60	2019Q4	No	No
8775	Coastal Operating Area	OCEAN CITY	Gardens Parkway between E. Atlantic Avenue and Newcastle Road	\$ 335,000	Replace	1,340	12.00	PVC	1930	10	CI	Safety and Reliability/Structural	60	2020Q4	No	No
8803	Coastal Operating Area	OCEAN CITY	Walnut Road between Bay Avenue to Ferndale Drive	\$ 559,000	Replace	2,236	8.00	PVC	1950	6	AC	System Flows and Pressure	90	2020Q1	No	No
8805	Coastal Operating Area	OCEAN CITY	Haven Avenue between 15th Street & 18th Street	\$ 415,000	Replace	1,521	8.00	PVC	1950	8	AC	System Flows and Pressure	60	2019Q1	No	No
9786	Coastal Operating Area	OCEAN CITY	West Avenue between 55th to 59th	\$ 555,000	Replace	2,222	8.00	PVC	1970	8	AC	System Flows and Pressure	90	2019Q1	No	No
9787	Coastal Operating Area	OCEAN CITY	Simpson Avenue between 55th & 56th	\$ 140,000	Replace	564	8.00	PVC	1970	8	AC	System Flows and Pressure	60	2019Q1	No	No
9788	Coastal Operating Area	OCEAN CITY	Haven Avenue between 55th & 56th	\$ 140,000	Replace	599	8.00	PVC	1970	8	AC	System Flows and Pressure	60	2019Q1	No	No
9812	Coastal Operating Area	OCEAN CITY	Grenada Lane	\$ 150,000	Replace	608	8.00	PCCP	1950	6	PVC	System Flows and Pressure	60	2020Q1	No	No
9813	Coastal Operating Area	OCEAN CITY	Marina Lane	\$ 150,000	Replace	617	8.00	PVC	1950	6	PVC	System Flows and Pressure	60	2020Q1	No	No
9814	Coastal Operating Area	OCEAN CITY	Leyte Lane	\$ 225,000	Replace	885	6.00	PVC	2000	6	AC	System Flows and Pressure	60	2020Q1	No	No
255	Coastal Operating Area	OCEANPORT	Oceanport - Werah Place	\$ 187,500	Replace	1,250	8.00	PVC	1930's	1.25	PVC	Safety and Reliability/Structural	60	2018Q4	Yes	Yes
5784	Coastal Operating Area	OCEANPORT	Replace 2" CI pipe on Oceanport Avenue from Port Au Peck Avenue to Carriage Lane	\$ 130,000	Replace	795	8.00	Ductile Iron	1930's	2	Cast Iron	Relocation/Opportunity	60	2018Q4	Yes	Yes
7600	Southwest Operating Area	OLDMANS	Oldmans Twp - Donna Dr / Carolina Dr / Pennsville-Pedricktown Rd / Perkiintown Rd	\$ 1,200,000	Replace	5,064	12.00	Ductile Iron	1900	8	CI	Relocation/Opportunity	120	2019Q3	No	No
9734	Southwest Operating Area	OLDMANS	State Highway 130	\$ 300,000	Replace	1,452	8.00	Ductile Iron	1900	8	CI	Relocation/Opportunity	60	2019Q1	No	No
144	North Operating Area	OXFORD	Frenchtown - 12th Street	\$ 105,000	Replace	600	6.00	Ductile Iron	Unknown	2	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes
505	Southwest Operating Area	PALMYRA	Palmyra - West 5th Street - Arch Street to Weart Blvd	\$ 218,500	Replace	1,150	8.00	Ductile Iron	Pre-1900	6	Bestos Cem	Safety and Reliability/Structural	60	2018Q4	No	Yes
518	Southwest Operating Area	PALMYRA	Palmyra - Walnut Street - West Spring Garden Street to West Charles Street	\$ 200,000	Replace	1,050	8.00	Ductile Iron	1930's	6	Bestos Cem	Safety and Reliability/Structural	60	2019Q4	No	Yes
520	Southwest Operating Area	PALMYRA	Palmyra - Pear Street - Walnut Street to Filbert Street	\$ 105,000	Replace	550	8.00	Ductile Iron	1930's	4	Cast Iron	Safety and Reliability/Structural	60	2019Q4	No	Yes
8362	Southwest Operating Area	PALMYRA	West Charles Street, West Henry Street, Hubbs Drive, Park Avenue, Walnut Street	\$ 1,569,400	Replace	6,570	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	120	2021Q4	No	No
8909	Southwest Operating Area	PALMYRA	Maryland, Oregon, Virginia, Leconey, Firth	\$ 800,000	Replace	4,554	8.00	Ductile Iron	1950	6	AC	Safety and Reliability/Structural	120	2020Q1	No	No
9700	Southwest Operating Area	PALMYRA	South Broad Street	\$ 210,000	Replace	645	8.00	Ductile Iron	1890	4	CEM	Safety and Reliability/Structural	60	2019Q4	No	No
6850	North Operating Area	PEAPACK GLADSTONE BOROUGH	PEAPACK GLADSTONE - Main St from Mendham Rd to gradient line	\$ 660,000	Replace	3,300	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	90	2020Q3	No	Yes
530	Southwest Operating Area	PENNS GROVE	Penns Grove - South Smith Avenue - Walnut Street to Oliver Avenue	\$ 163,400	Replace	860	8.00	Ductile Iron	1950's	2	Ivanized St	Safety and Reliability/Structural	60	2021Q3	No	Yes
9248	Southwest Operating Area	PENNS GROVE	Penns Grove Cleaning and Lining - 2018	\$ 2,000,000	Rehab	8,500	8.00	Other	1940	2	CI	Safety and Reliability/Structural	120	2018Q4	No	No

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9542	Southwest Operating Area	PENNS GROVE	Pitman Street, Morris Avenue, W Line Street	\$ 425,000	Replace	2,121	8.00	Ductile Iron	1910	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2021Q3	No	No
9571	Southwest Operating Area	PENNS GROVE	Hayes Street & Cypress Street	\$ 150,000	Replace	949	8.00	Ductile Iron	1910	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q3	No	No
5879	Southwest Operating Area	PENNSAUKEN	Pennsauken - Rudderow Avenue - North 36th Street to Dead End	\$ 95,000	Replace	500	8.00	Ductile Iron	1930's	6	Jestco Cem	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2019Q3	No	Yes
9727	Southwest Operating Area	PENNSAUKEN	Roosevelt Ave & Sidestreets	\$ 2,000,000	Replace	8,575	12.00	Ductile Iron	1930	8	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	120	2021Q3	No	No
6659	Central Operating Area	PISCATAWAY TWP	Easement (William St to Right of Way)	\$ 500,000	Replace	278	8.00	HDPE	1960's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2019Q3	No	Yes
9740	Central Operating Area	PISCATAWAY TWP	60 Inch Wire Breaks Stelton Rd	\$ 500,000	Replace	60	60.00	Ductile Iron	1960	60	CEM	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2018Q4	No	No
9742	Central Operating Area	PISCATAWAY TWP	60 Inch Wire Breaks Easement on Turner Pl	\$ 500,000	Replace	60	60.00	Ductile Iron	1960	60	DI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2018Q4	No	No
9772	Central Operating Area	PISCATAWAY TWP	Bakeland Ave Bridge over Ambrose Brook	\$ 50,000	Replace	160	8.00	Ductile Iron	1980	8	ST	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2018Q4	No	No
9775	Central Operating Area	PISCATAWAY TWP	60 Inch at 2 Turner Pl Slip Line	\$ 1,000,000	Replace	200	48.00	Ductile Iron	1960	60	DI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2019Q4	No	No
5575	Central Operating Area	PLAINFIELD CITY	Elaine Ct.	\$ 56,000	Replace	277	6.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2019Q3	No	Yes
6662	Central Operating Area	PLAINFIELD CITY	South Avenue from Richmond St to Berkman St	\$ 435,000	Replace	1,450	12.00	Ductile Iron	1910's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	Complete	Yes	Yes
6663	Central Operating Area	PLAINFIELD CITY	South Avenue from Berckman St to Leland Ave	\$ 960,000	Replace	3,200	12.00	Ductile Iron	1910's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2019Q3	No	Yes
7048	Central Operating Area	PLAINFIELD CITY	Deborah Ct. (@ both cul-de-sacs)	\$ 101,500	Replace	580	8.00	Ductile Iron	1950's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2019Q3	No	Yes
220	Coastal Operating Area	PLEASANTVILLE	Pleasantville - Doughty Road - Between US Route 40 & Washington Avenue (w/ bore)	\$ 596,000	Replace	1,784	12.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2019Q3	No	Yes
6458	Coastal Operating Area	PLEASANTVILLE	Old Turnpike between Main Street and east end of road	\$ 525,000	Replace	2,175	12.00	Ductile Iron	1940's	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2020Q1	No	Yes
8447	Coastal Operating Area	PLEASANTVILLE	Charles Avenue from Franklin Avenue to end of street (Bay)	\$ 167,500	Replace	669	8.00	Ductile Iron	1940	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2020Q1	No	No
8448	Coastal Operating Area	PLEASANTVILLE	Pennsylvania Avenue & Ingersoll Avenue	\$ 162,500	Replace	643	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2020Q1	No	No
8449	Coastal Operating Area	PLEASANTVILLE	Washington Avenue & Chester Avenue	\$ 315,000	Replace	1,260	8.00	Ductile Iron	1940	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2020Q1	No	No
8474	Coastal Operating Area	PLEASANTVILLE	Black Horse Pike between Franklin and the Bike Path west of Chestnut Avenue, including Chestnut to Decatur Ave	\$ 825,500	Replace	2,539	12.00	Ductile Iron	1940	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2019Q3	No	No
9803	Coastal Operating Area	PLEASANTVILLE	Madison Avenue between Charles & Brookville & Brookville	\$ 125,000	Replace	477	8.00	Ductile Iron	1940	2	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2020Q1	No	No
5486	Central Operating Area	PRINCETON BOROUGH	Dickenson St between alexander St and University Pl.	\$ 100,000	Replace	450	8.00	Ductile Iron	1900's	4	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	Complete	Yes	Yes
6821	Central Operating Area	PRINCETON BOROUGH	Bank Street Main Replacement	\$ 229,000	Replace	860	8.00	Ductile Iron	1920's	Unknown	Unknown	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2019Q1	No	Yes
9712	Central Operating Area	PRINCETON BOROUGH	Rt 27 (Nassau St) main replacement	\$ 1,500,000	Replace	1,981	12.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2019Q3	No	No
9724	Central Operating Area	PRINCETON BOROUGH	RT 27 (Nassau St) phase -3	\$ 1,500,000	Replace	1,800	12.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2020Q3	No	No
9725	Central Operating Area	PRINCETON BOROUGH	Edwards St Main Replacement	\$ 150,000	Replace	192	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	30	2019Q3	No	No
19	Central Operating Area	PRINCETON TWP	Princeton - Nassau Street from Harrison	\$ 1,500,000	Replace	3,500	12.00	Ductile Iron	Pre-1900	6	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2021Q3	No	Yes
84	Central Operating Area	PRINCETON TWP	Princeton Township - Stuart Road Great Road to Cherry Hill Road	\$ 903,600	Replace	5,020	12.00	Ductile Iron	1930's	8	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	120	2021Q3	No	Yes
5658	Central Operating Area	PRINCETON TWP	Red Hill rd 6" Main replacement	\$ 600,000	Replace	2,300	8.00	Ductile Iron	1930's	2	Cast Iron	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2019Q1	No	Yes
9359	Central Operating Area	PRINCETON TWP	Loomis Ct. Main Replacement	\$ 104,000	Replace	520	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q1	No	No
9360	Central Operating Area	PRINCETON TWP	Oakland St. & Hickory Ct. Main Replacement	\$ 268,000	Replace	1,340	8.00	Ductile Iron	1960	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q3	No	No
9361	Central Operating Area	PRINCETON TWP	Walnut Ln. Main Replacement	\$ 148,000	Replace	740	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q3	No	No
9362	Central Operating Area	PRINCETON TWP	Hewing St. Main Replacement	\$ 480,000	Replace	2,400	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2021Q1	No	No
9363	Central Operating Area	PRINCETON TWP	Harrison St. North Main Replacement	\$ 420,000	Replace	2,100	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	90	2021Q3	No	No
9376	Central Operating Area	PRINCETON TWP	Cedar Ln. Main Replacement	\$ 188,000	Replace	940	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q1	No	No
9377	Central Operating Area	PRINCETON TWP	Sycamore Rd. Main Replacement	\$ 200,000	Replace	1,000	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q3	No	No
9401	Central Operating Area	PRINCETON TWP	Greenhouse Dr. Main Replacement	\$ 128,000	Replace	640	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2021Q3	No	No
9538	Central Operating Area	RARITAN BOROUGH	First Street Main Replacement	\$ 322,000	Replace	1,373	8.00	Ductile Iron	1960	4	CI	Safety and Reliability/Structural Safety and Reliability/Structural System Flows and Pressure Relocation/Opportunity	60	2019Q3	No	No

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9547	Central Operating Area	RARITAN BOROUGH	Second Ave Main Replacement	\$ 386,000	Replace	2,211	8.00	Ductile Iron	1960	6	CI	Safety and Reliability	90	2019Q3	No	No
9548	Central Operating Area	RARITAN BOROUGH	Third St Main Replacement	\$ 205,000	Replace	528	8.00	Ductile Iron	1960	6	CI	Safety and Reliability	60	2019Q1	No	No
9692	Central Operating Area	RARITAN BOROUGH	Wall St Main Replacement	\$ 120,000	Replace	326	8.00	Ductile Iron	1960	4	CI	System Flows and Pressure	30	2019Q1	No	No
9364	Central Operating Area	RARITAN TWP	Harrison Street South/ 629 Main Replacement	\$ 140,000	Replace	700	8.00	Ductile Iron	1920	6	CI	Safety and Reliability/Structural	60	2021Q1	No	No
5922	Southwest Operating Area	RIVERSIDE	Riverside - Healings Avenue - New Jersey Avenue to Washington Street	\$ 494,000	Replace	2,600	8.00	Ductile Iron	1930's	6	Cast Iron	Water Quality	90	2019Q3	No	Yes
8930	Southwest Operating Area	RIVERSIDE	Polk Street, Madison Street, Jefferson Street, Monroe Street, Fairview Street	\$ 750,000	Replace	3,883	8.00	Ductile Iron	1930	6	CI	System Flows and Pressure	90	2021Q3	No	No
9705	Southwest Operating Area	RIVERSIDE	New Jersey Avenue, Fairview St, Hancock St, 2nd Street	\$ 275,000	Replace	1,245	12.00	Ductile Iron	1930	6	CI	Sustained Economic Growth	60	2019Q3	No	No
9737	Southwest Operating Area	RIVERSIDE	Delaware Avenue and 8th Street	\$ 775,000	Replace	4,002	8.00	Ductile Iron	1930	4	CI	System Flows and Pressure	120	2020Q4	No	No
9738	Southwest Operating Area	RIVERSIDE	Washington Street, Middleton St, Spring Garden St, Paine St, Lee St	\$ 750,000	Replace	4,987	8.00	Ductile Iron	1930	4	CI	System Flows and Pressure	120	2021Q3	No	No
9743	Southwest Operating Area	RIVERTON	Shrewsbury Road and Cherry Lane	\$ 160,000	Replace	816	8.00	Ductile Iron	1920	4	CI	System Flows and Pressure	60	2020Q4	No	No
9774	Central Operating Area	ROSELLE BOROUGH	Rosewood Ave Test St	\$ 133,000	Rehab	727	6.00	Other	1940	6	CI	System Flows and Pressure	60	2018Q4	No	No
6646	Central Operating Area	ROSELLE PARK BORO	Colonial Rd. (Bender to Ragland)	\$ 102,600	Replace	513	8.00	Ductile Iron	1960's	Unknown	Unknown	System Flows and Pressure	60	Complete	Yes	Yes
7029	Central Operating Area	ROSELLE PARK BORO	Bender Ave. (E. Lincoln to E. Grant)	\$ 236,500	Replace	1,100	8.00	Ductile Iron	1930's	Unknown	Unknown	System Flows and Pressure	60	2019Q1	No	Yes
7031	Central Operating Area	ROSELLE PARK BORO	W. Lincoln Ave. (Falloute to Laurel)	\$ 262,600	Replace	1,313	8.00	Ductile Iron	1920's	Unknown	Unknown	System Flows and Pressure	60	Complete	Yes	Yes
9308	Central Operating Area	ROSELLE PARK BORO	Charlotte Terr. (from E. Grant to Dead End)	\$ 230,910	Replace	1,085	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q1	No	No
9310	Central Operating Area	ROSELLE PARK BORO	Markthaler Pl. (from Galloping Hill to Charlotte)	\$ 141,255	Replace	586	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q1	No	No
9322	Central Operating Area	ROSELLE PARK BORO	Pinewood Ave. (from Woodside to Dead End)	\$ 125,775	Replace	584	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q1	No	No
9323	Central Operating Area	ROSELLE PARK BORO	Oak St. (Woodside to Pinewood)	\$ 92,020	Replace	426	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	30	2021Q1	No	No
9324	Central Operating Area	ROSELLE PARK BORO	Woodside Ave. (Valley to Pinewood)	\$ 117,175	Replace	511	8.00	Ductile Iron	1950	8	CI	System Flows and Pressure	60	2021Q1	No	No
9325	Central Operating Area	ROSELLE PARK BORO	Beachwood Ave. (W. Lincoln to W. Webster)	\$ 135,665	Replace	629	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q3	No	No
9327	Central Operating Area	ROSELLE PARK BORO	Jerome St. (W. Westfield Ave. to Beachwood)	\$ 289,820	Replace	1,437	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q3	No	No
9328	Central Operating Area	ROSELLE PARK BORO	Valley Rd. (W. Westfield to Beachwood)	\$ 367,865	Replace	1,736	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q3	No	No
9658	Central Operating Area	ROSELLE PARK BORO	Sheridan Ave (E. Colfax Ave to E Westfield Ave)	\$ 775,000	Replace	3,684	8.00	Ductile Iron	1930	16	CI	System Flows and Pressure	90	2019Q1	No	No
9659	Central Operating Area	ROSELLE PARK BORO	Sherman Ave(E Colfax Ave to E Westfield Ave)	\$ 775,000	Replace	2,740	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	90	2019Q1	No	No
6499	Coastal Operating Area	RUMSON	Center Street Main Replacement	\$ 115,000	Replace	825	8.00	PVC	1920's	Unknown	Unknown	Safety and Reliability	60	2020Q4	No	Yes
7502	Coastal Operating Area	RUMSON	Allen Street Main Replacement	\$ 420,000	Replace	2,020	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	90	2021Q3	No	No
8033	Coastal Operating Area	RUMSON	William St. 2" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	30	2021Q3	No	No
8034	Coastal Operating Area	RUMSON	1st Street 1" CI	\$ 1,600	Replace	800	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural	60	2021Q3	No	No
8035	Coastal Operating Area	RUMSON	Oakwood Ln. 2" CI	\$ 240,000	Replace	1,200	8.00	Ductile Iron	1920	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
8051	Coastal Operating Area	RUMSON	Pond Rd. 2" CI	\$ 180,000	Replace	900	8.00	Ductile Iron	1990	2	CI	Safety and Reliability/Structural	60	2021Q3	No	No
9246	Coastal Operating Area	RUMSON	Rumson Cleaning and Lining - 2018	\$ 2,200,000	Rehab	213,125	8.00	Other	1920	4	CI	Safety and Reliability/Structural	120	2018Q4	No	No
5905	Southwest Operating Area	RUNNEMEDE	Runnemeede - Irish Hill Road and High Street - East Clements Bridge Road to Dead End	\$ 351,500	Replace	1,850	12.00	Ductile Iron	1960's	6	bestos Cem	System Flows and Pressure	60	2019Q3	No	Yes
8687	Southwest Operating Area	RUNNEMEDE	Runnemeede - Haverford Road, Lindsay Avenue, and Washington Avenue	\$ 725,000	Replace	5,382	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	120	2020Q3	No	No
5809	Coastal Operating Area	SEA BRIGHT	Shrewsbury Way Main Replacement	\$ 60,000	Replace	400	8.00	Ductile Iron	1920's	4	Cast Iron	Safety and Reliability	30	2020Q1	No	Yes
8156	Coastal Operating Area	SEA BRIGHT	Island View Way 2" CI & 6" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural	60	2020Q1	No	No
8157	Coastal Operating Area	SEA BRIGHT	Long View Way 2" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural	30	2020Q1	No	No
8158	Coastal Operating Area	SEA BRIGHT	Garden Way 2" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural	30	2020Q1	No	No

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8160	Coastal Operating Area	SEA BRIGHT	E New St. 4" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1920	4	CI	Safety and Reliability/Structural Safety and	30	2020Q1	No	No
8161	Coastal Operating Area	SEA BRIGHT	Church St. 4" CI, 2.25" CI & 6" CI	\$ 180,000	Replace	900	8.00	Ductile Iron	1920	4	CI	Reliability/Structural Safety and	60	2020Q1	No	No
8162	Coastal Operating Area	SEA BRIGHT	E. Church St.	\$ 60,000	Replace	300	8.00	Ductile Iron	1920	4	CI	Reliability/Structural Safety and	30	2020Q1	No	No
7044	Coastal Operating Area	SHREWSBURY	Replace 3" main on Shadow Brook Road	\$ 131,000	Replace	872	8.00	Ductile Iron	1920's	Unknown	Unknown	Reliability/Structural Safety and	60	2018Q4	Yes	Yes
8140	Coastal Operating Area	SHREWSBURY	Glorney St. 2" CI	\$ 60,000	Replace	300	8.00	Ductile Iron	1950	2	CI	Reliability/Structural Safety and	30	2021Q1	No	No
8142	Coastal Operating Area	SHREWSBURY	Borden St. 2" CI	\$ 360,000	Replace	1,800	8.00	Ductile Iron	1950	2	CI	Reliability/Structural Safety and	60	2021Q1	No	No
8143	Coastal Operating Area	SHREWSBURY	Sickies Pl. 2" CI	\$ 100,000	Replace	500	8.00	Ductile Iron	1950	2	CI	Reliability/Structural Safety and	60	2021Q1	No	No
8144	Coastal Operating Area	SHREWSBURY	Buttonwood Dr. 2" CI & 6" CI	\$ 380,000	Replace	1,900	8.00	Ductile Iron	1920	2	CI	Reliability/Structural Safety and	60	2021Q1	No	No
8145	Coastal Operating Area	SHREWSBURY	Elm Ln. 2.25" CI & 6" CI	\$ 184,000	Replace	920	8.00	Ductile Iron	1950	2	CI	Reliability/Structural Safety and	60	2021Q1	No	No
8146	Coastal Operating Area	SHREWSBURY	Corn Ln. 2" GALV, 6" AC & 6" DI	\$ 140,000	Replace	700	8.00	Ductile Iron	1950	2	GALV	Reliability/Structural Safety and	60	2021Q1	No	No
9558	Coastal Operating Area	SHREWSBURY	Shady Lane main replacement	\$ 140,000	Replace	800	8.00	Ductile Iron	1950	2	CI	Reliability/Structural Safety and	60	2019Q1	No	No
9704	Southwest Operating Area	SOMERDALE	Hilltop Avenue & Somerdale Road	\$ 650,000	Replace	3,366	8.00	Ductile Iron	1950	6	CI	Sustained Economic Growth Safety and	90	2019Q1	No	No
5642	Coastal Operating Area	SOMERS POINT	Pierson Avenue from Sunny Avenue to 230' feet east of Sunny Avenue	\$ 57,500	Replace	241	8.00	Ductile Iron	1940's	2.25	Jestos Cem	Reliability/Structural Safety and	30	2021Q1	No	Yes
6238	Coastal Operating Area	SOMERS POINT	4th Street from Tudor Terr to Rhode Island & Tudor Terr from 5th St to 4th St	\$ 175,000	Replace	575	8.00	Ductile Iron	1950's	6	Cast Iron	Reliability/Structural Safety and	60	2020Q3	No	Yes
6313	Coastal Operating Area	SOMERS POINT	Village Drive between Lantern Lane and US Route 9	\$ 768,750	Replace	3,096	12.00	Ductile Iron	1950's	6	Cast Iron	Reliability/Structural Safety and	90	2021Q1	No	Yes
6314	Coastal Operating Area	SOMERS POINT	Dogwood Lane between Village Drive and S Laurel Drive	\$ 112,500	Replace	463	12.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure Safety and	30	2020Q3	No	Yes
6315	Coastal Operating Area	SOMERS POINT	Violet Lane between S. Laurel Drive and W. Laurel Drive	\$ 250,000	Replace	1,020	12.00	Ductile Iron	1950's	6	Cast Iron	Reliability/Structural Safety and	60	2020Q3	No	Yes
6527	Coastal Operating Area	SOMERS POINT	S. Village Dr/Holly Hills between US Rt 9 and N. Village Dr	\$ 740,000	Replace	2,957	8.00	Ductile Iron	1950's	6	AC	Reliability/Structural Safety and	90	2021Q1	No	Yes
6530	Coastal Operating Area	SOMERS POINT	S. Village Dr between Holly Hills Dr and Dogwood Ln and Lantern Ln	\$ 491,500	Replace	1,966	8.00	Ductile Iron	1950's	6	AC	Reliability/Structural Safety and	60	2020Q3	No	Yes
6531	Coastal Operating Area	SOMERS POINT	N. Village Drive between Dogwood Dr and Holly Hills Dr	\$ 172,500	Replace	690	8.00	Ductile Iron	1950's	6	AC	Reliability/Structural Safety and	60	2020Q3	No	Yes
6532	Coastal Operating Area	SOMERS POINT	S. Laurel Dr between Violet Lane and Rose Lane	\$ 91,250	Replace	364	8.00	Ductile Iron	1950's	6	AC	Reliability/Structural Safety and	30	2020Q3	No	Yes
8403	Coastal Operating Area	SOMERS POINT	Dogwood Drive between Laurel Dr and 10th St, Rose Lane and S Laurel from Rose Ln to Dodwood Drive	\$ 660,000	Replace	2,640	8.00	Ductile Iron	1960	6	AC	Reliability/Structural Safety and	90	2020Q3	No	No
5424	Central Operating Area	SOMERVILLE BOROUGH	South Gaston Ave Main Replacement	\$ 250,000	Replace	800	8.00	Ductile Iron	1920's	4	Cast Iron	Reliability/Structural System Flows and	60	2021Q1	No	Yes
5699	Central Operating Area	SOMERVILLE BOROUGH	Mechanic Strret Main Replacement	\$ 150,000	Replace	600	8.00	Ductile Iron	1920's	4	Cast Iron	Pressure Safety and	60	Complete	Yes	Yes
5700	Central Operating Area	SOMERVILLE BOROUGH	Park Ave Main Replacement	\$ 225,000	Replace	900	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure Safety and	60	2018Q3	Yes	Yes
5796	Central Operating Area	SOMERVILLE BOROUGH	Eastern Avenue Main Replacement	\$ 1,018,920	Replace	2,200	8.00	Ductile Iron	1920's	4	Cast Iron	Reliability/Structural Safety and	90	2020Q3	No	Yes
6625	Central Operating Area	SOMERVILLE BOROUGH	Veterans Memorial Drive 8" main replacement between New St and S. Doughty Ave.	\$ 70,000	Replace	460	12.00	Ductile Iron	Unknown	Unknown	Unknown	Reliability/Structural Safety and	30	2020Q3	No	Yes
9138	Central Operating Area	SOMERVILLE BOROUGH	Codrington Pl. main replacement	\$ 290,000	Replace	734	8.00	Ductile Iron	1920	6	CI	Reliability/Structural Safety and	60	2019Q1	No	No
5681	Central Operating Area	SOUTH BRUNSWICK TWP	Euclid Ave Main Replacement	\$ 200,000	Replace	700	8.00	Ductile Iron	Unknown	2	Cast Iron	Reliability/Structural Safety and	60	2020Q3	No	Yes
5682	Central Operating Area	SOUTH BRUNSWICK TWP	Heathcote Brook Rd Main replacement	\$ 250,000	Replace	800	8.00	Ductile Iron	Unknown	2	Cast Iron	Reliability/Structural Safety and	60	2020Q3	No	Yes
5684	Central Operating Area	SOUTH BRUNSWICK TWP	Prospect St main replacement	\$ 150,000	Replace	400	8.00	Ductile Iron	Unknown	4	Cast Iron	Reliability/Structural Safety and	30	2020Q3	No	Yes
9719	Central Operating Area	SOUTH PLAINFIELD BORO	60 inch Rehab Lining South Plainfield Ph 1	\$ 6,000,000	Rehab	3,257	60.00	Other	1960	60	CEM	Reliability/Structural Safety and	90	2019Q4	No	No
9720	Central Operating Area	SOUTH PLAINFIELD BORO	60 Inch South Plainfield Rehab Ph2	\$ 6,000,000	Rehab	1,353	60.00	Other	1960	60	CEM	Safety and Reliability	60	2020Q1	No	No
6862	North Operating Area	SPRINGFIELD	SPRINGFIELD - Shunpike Rd from Mountain Ave to I-78	\$ 840,000	Replace	4,200	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural System Flows and	120	2020Q3	No	Yes
44	North Operating Area	SUMMIT	Summit - Evergreen Rd	\$ 200,000	Replace	900	8.00	Ductile Iron	1920's	6	Cast Iron	Pressure	60	2019Q3	No	Yes
6886	North Operating Area	SUMMIT	SUMMIT - Kent Place Blvd from valve VSU-885 near High St to Passaic Ave	\$ 668,025	Replace	2,969	8.00	Ductile Iron	Unknown	4	CI	Water Quality	90	2019Q3	No	Yes
9557	North Operating Area	SUMMIT	Plymouth Rd	\$ 314,000	Replace	1,256	8.00	Ductile Iron	1920	6	CI	Relocation/Opportunity	60	2019Q1	No	No

New Jersey American Water Company, Inc.
2018 DSIC Foundational Filing
Appendix C

ID	District	Municipality	Project Title	NJAW Funded (\$/kAns)	Project Type	Prop. Length (feet)	Prop. Dia. (Inches)	Proposed Pipe Material	Decade Installed	Ex. Dia. (Inches)	Existing Pipe Material	Accelerated Asset Investment Category	Est. Project Duration	Est. In-Service Quarter	2018 GAP	Previously Approved Under 2013 Foundational Filing
7358	North Operating Area	TEWKSBURY TWP	Hollow Brook from Fairmont Rd E to past HTEW-19	\$ 1,400,000	Replace	6,978	8.00	Ductile Iron	1890	8	CI	Safety and Reliability	120	2020Q3	No	No
694	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Rutherford Ln from Rt 95 S to Rt 35 N.	\$ 74,400	Replace	620	6.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	60	2020Q1	No	Yes
8441	Coastal Operating Area	TOMS RIVER	W Cove Way, 2" CI	\$ 88,000	Replace	534	6.00	Ductile Iron	1950	2	CI	Safety and Reliability/Structural	60	2019Q1	No	No
8083	Coastal Operating Area	UNION BEACH	Lorillard Ave. 6" CI	\$ 500,000	Replace	2,500	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	90	2019Q3	No	No
8088	Coastal Operating Area	UNION BEACH	St. James Ave. 6" CI	\$ 104,000	Replace	923	8.00	Ductile Iron	1950	6	CI	Safety and Reliability/Structural	60	2018Q4	No	No
9555	Coastal Operating Area	UNION BEACH	Arlington Ave Main replace	\$ 96,000	Replace	497	6.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural	30	2018Q4	No	No
9556	Coastal Operating Area	UNION BEACH	Newark Ave Main Replacement	\$ 96,000	Replace	426	6.00	Ductile Iron	1930	6	AC	Safety and Reliability/Structural	30	2018Q4	No	No
9239	Central Operating Area	UNION TWP	Sherwood Rd. (Colonial Ave. to Salem Rd.)	\$ 320,000	Replace	1,600	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2019Q3	No	No
9240	Central Operating Area	UNION TWP	Huguenot Ave. (Colonial Ave. to Colonial Arms Rd.)	\$ 440,000	Replace	2,200	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	90	2019Q3	No	No
9241	Central Operating Area	UNION TWP	Beverly Rd. (Lorraine Ave. to Arnet Ave.)	\$ 340,000	Replace	1,700	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9242	Central Operating Area	UNION TWP	Lum Ave. (Colonial Ave. to Terminus)	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9243	Central Operating Area	UNION TWP	Summit Pl. (Colonial Ave. to Lorraine Ave.)	\$ 104,000	Replace	520	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9244	Central Operating Area	UNION TWP	Putnam Rd. (Colonial Ave. to Salem Rd.)	\$ 300,000	Replace	1,500	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9245	Central Operating Area	UNION TWP	Wayne Terrace (Colonial Ave. to Salem Rd.)	\$ 328,000	Replace	1,640	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9250	Central Operating Area	UNION TWP	Prescott Rd. (Colonial Ave. to Fairfield Way)	\$ 140,000	Replace	700	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9251	Central Operating Area	UNION TWP	Lancaster Rd. (Prescott Rd. to Terminus)	\$ 80,000	Replace	400	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	30	2020Q3	No	No
9252	Central Operating Area	UNION TWP	Fairfield Way (Wayne Terrace to Terminus)	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9253	Central Operating Area	UNION TWP	Princeton Rd. (Fairfield Way to Duquesne Terrace)	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9254	Central Operating Area	UNION TWP	Lexington Rd. (Princeton Rd. to Wayne Terrace)	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9255	Central Operating Area	UNION TWP	Duquesne Terrace (Plymouth Rd. to Dwight Terr.)	\$ 248,000	Replace	1,240	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9256	Central Operating Area	UNION TWP	Plymouth Rd. (Salem Rd. to Terminus)	\$ 268,000	Replace	1,320	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9257	Central Operating Area	UNION TWP	Halsey Ave. & Dwight Terrace (Salem Rd. to Terminus)	\$ 148,000	Replace	740	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9258	Central Operating Area	UNION TWP	Bennington Dr. (Plymouth Rd. to Princeton Rd)	\$ 140,000	Replace	700	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9259	Central Operating Area	UNION TWP	Winchester Ave. (Randolph Pl. to Salem Rd.)	\$ 700,000	Replace	3,500	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	90	2020Q3	No	No
9261	Central Operating Area	UNION TWP	Martin Pl (Huntington Rd. to Randolph Pl)	\$ 84,000	Replace	420	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	30	2020Q3	No	No
9262	Central Operating Area	UNION TWP	Colonial Arms Rd. (Cranbury Rd. to Terminus)	\$ 660,000	Replace	3,300	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	90	2020Q3	No	No
9263	Central Operating Area	UNION TWP	Martin Road (Spring Hill Rd. to Martin Pl.)	\$ 284,000	Replace	1,420	8.00	Ductile Iron	Unknown	6	CI	Safety and Reliability/Structural	60	2020Q3	No	No
9305	Central Operating Area	UNION TWP	Forest Rd. & Connecticut Rd.	\$ 273,265	Replace	1,481	8.00	Ductile Iron	Unknown	6	CI	System Flows and Pressure	60	2021Q3	No	No
9306	Central Operating Area	UNION TWP	Sinclair Ave. (from Mercer to Tucker)	\$ 293,045	Replace	1,364	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q3	No	No
9307	Central Operating Area	UNION TWP	Walton Ave. (from Galloping Hill to Sinclair)	\$ 304,440	Replace	1,456	8.00	Ductile Iron	1920	6	CI	System Flows and Pressure	60	2021Q3	No	No
9505	Central Operating Area	UNION TWP	Biscayne Way Loop at Vauxhall Rd	\$ 374,315	Replace	2,014	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	90	2021Q3	No	No
9506	Central Operating Area	UNION TWP	Brookside Ave between Gustav Ave to Dead End	\$ 130,935	Replace	599	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	60	2021Q3	No	No
9507	Central Operating Area	UNION TWP	Gray Ave between Gustav Ave to Cornell Pl	\$ 131,150	Replace	594	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	60	2021Q3	No	No
9508	Central Operating Area	UNION TWP	Roger Ave between Vauxhaul to Cornell Pl	\$ 145,125	Replace	639	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	60	2021Q3	No	No
9509	Central Operating Area	UNION TWP	Faltoute Ave between Vauxhaul to Cornell Pl	\$ 120,400	Replace	592	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	60	2021Q3	No	No
9510	Central Operating Area	UNION TWP	Marcela Dr w/Short Dr (loop) between Cornell Pl and Cornell Pl	\$ 298,635	Replace	1,391	8.00	Ductile Iron	1960	6	CI	System Flows and Pressure	60	2021Q3	No	No
6148	Coastal Operating Area	UPPER TWP	Seaview Avenue from North Commonwealth Avenue to Neptune Drive	\$ 125,000	Replace	740	8.00	Ductile Iron	1950's	6	bestos Cem	System Flows and Pressure	60	2019Q4	No	Yes

New Jersey American Water Company, Inc.
2018 DSC Foundational Filing
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Id	District	Municipality	Project Title	NAW Funded (\$/ft)	Project Type	Prop. Length (feet)	Prop. Dia. (Inches)	Proposed Pipe Material	Decade Installed	Es. Dia. (Inches)	Existing Pipe Material	Accelerated Asset Investment Category	Est. Project Duration	Est. In-Service Quarter	2018 GAP	Previously Approved Under 2013 Foundational Filing	
6149	Coastal Operating Area	UPPER TWP	East Seaciff Road from North Commonwealth Avenue to Neptune Drive	\$ 125,000	Replace	486	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	30	2019Q4	No	Yes	
6150	Coastal Operating Area	UPPER TWP	Neptune Drive from Seaview Avenue to Williams Avenue	\$ 212,500	Replace	591	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	2019Q4	No	Yes	
6508	Coastal Operating Area	UPPER TWP	E. Winthrop Avenue between Commonwealth Ave and Neptune Dr	\$ 125,000	Replace	496	8.00	PVC	1930's	4	CI	Safety and Reliability/Structural	30	2019Q4	No	Yes	
6509	Coastal Operating Area	UPPER TWP	Williams Avenue between Commonwealth Ave and Neptune Drive	\$ 125,000	Replace	511	8.00	PVC	1930's	2	GALV	Safety and Reliability/Structural	60	2019Q4	No	Yes	
7636	Central Operating Area	WARREN TWP	Stirling Rd. @ Rt. 78 Overpass	\$ 92,000	Rehab	230	16.00	Other	1970	16	ST	System Flows and Pressure	30	2019Q3	No	No	
5736	North Operating Area	WASHINGTON BOROUGH	E. Johnson from Belvidere Ave to End of Main (Dead End)	\$ 126,000	Replace	630	8.00	Ductile Iron	Pre-1900	12	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes	
5738	North Operating Area	WASHINGTON BOROUGH	W. Stuart Ave from Grand Ave to Lincoln Ave.	\$ 300,000	Replace	1,040	8.00	Ductile Iron	Pre-1900	4	Cast Iron	System Flows and Pressure	60	2019Q3	No	Yes	
5739	North Operating Area	WASHINGTON BOROUGH	W. Stuart from Lincoln Ave to Belvidere Ave	\$ 118,000	Replace	590	8.00	Ductile Iron	Pre-1900	2	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes	
5741	North Operating Area	WASHINGTON BOROUGH	Broad Street from Youmans to Washburn Ave	\$ 720,000	Replace	1,900	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	2019Q3	No	Yes	
5745	North Operating Area	WASHINGTON BOROUGH	W. Johnston from Grand Ave to Belvidere Avenue	\$ 113,000	Replace	1,565	8.00	Ductile Iron	Pre-1900	8	Cast Iron	System Flows and Pressure	60	2021Q3	No	Yes	
5756	North Operating Area	WASHINGTON BOROUGH	Wyoming Ave- from 4" DI main to hydrant HBW-40 to at McDonald St	\$ 225,000	Replace	1,250	8.00	Ductile Iron	Pre-1900	4	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes	
130	North Operating Area	WASHINGTON TWP	Washington - Washburn Road Changwater to S Lincoln	\$ 945,000	Replace	4,200	12.00	Ductile Iron	1950's	6	bestos Cem	System Flows and Pressure	120	2019Q3	No	Yes	
5764	North Operating Area	WASHINGTON TWP	Valley View Rd from End to Pohatcong Ave	\$ 138,000	Replace	690	8.00	Ductile Iron	1960's	4	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes	
5767	North Operating Area	WASHINGTON TWP	Pohatcong Dr from Pohatcong Ave to end	\$ 307,000	Replace	1,535	8.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	60	2020Q3	No	Yes	
5768	North Operating Area	WASHINGTON TWP	Jackson Parkway from Pohatcong Dr to Jackson Valley Rd	\$ 100,000	Replace	450	8.00	Ductile Iron	1960's	4	Cast Iron	System Flows and Pressure	30	2020Q3	No	Yes	
5927	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Woolley Place from Monmouth Road to Baker Drive	\$ 105,000	Replace	700	6.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	2018Q4	Yes	Yes	
5928	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Baker Drive from Woolley Place and Hendrickson Place	\$ 105,000	Replace	700	8.00	Ductile Iron	1950's	6	Unknown	System Flows and Pressure	60	2018Q4	Yes	Yes	
6069	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Maple Avenue on either side on Pinewood Avenue	\$ 68,250	Replace	455	6.00	Ductile Iron	1950's	6	Stove Pipe	System Flows and Pressure	30	2018Q4	No	Yes	
6073	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Pine Avenue between Chestnut Place and Walnut Place	\$ 73,500	Replace	490	6.00	Ductile Iron	1920's	2	Stove Pipe	System Flows and Pressure	30	2018Q4	Yes	Yes	
6189	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Poplar Avenue	\$ 60,000	Replace	400	6.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability	30	2018Q4	Yes	Yes	
6717	North Operating Area	WEST ORANGE	WEST ORANGE - Old Indian Rd from PI Valley Way to Waddington	\$ 500,000	Replace	1,300	8.00	Ductile Iron	1950's	Unknown	Unknown	Safety and Reliability/Structural	60	Complete	Yes	Yes	
6718	North Operating Area	WEST ORANGE	WEST ORANGE - Old Indian Rd between Prospect and HWO-231	\$ 320,000	Replace	1,000	8.00	Ductile Iron	Pre-1900	Unknown	Unknown	Safety and Reliability	60	2019Q1	No	Yes	
9632	North Operating Area	WEST ORANGE	Curtis Ave from PI Valley Way to Garfield	\$ 236,000	Replace	1,052	8.00	Ductile Iron	1940	6	CI	Safety and Reliability	60	2019Q3	No	No	
Total Estimated Cost				\$ 335,714,710													

New Jersey American Water Company, Inc.
2018 DSIC Foundational Filing
Appendix C-1 (Supplemental List of Previously Approved Projects Under 2015 DSIC Foundational Filing)

Id	District	Municipality	Project Title	NAWA Funded (dollars)	Project Type	Prop. Length (feet)	Prop. Dia. (Inches)	Proposed Pipe Material	Decade Installed	Ex. Dia. (Inches)	Existing Pipe Material	Accelerated Asset Investment Category	Project Duration	Est. In-Service Quarter	Previously Approved Under 2015 DSIC-FF, but Not Included in 2018 FF Appendix C
244	Coastal Operating Area	ABERDEEN	Aberdeen - Idlebrook, from InnerHill to "I" tank 10"	\$ 120,000	Replace	650	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
5293	Coastal Operating Area	ABERDEEN	Idaho Lane, Main Replacement	\$ 195,000	Replace	1300	8.00	PVC	1960's	6	Asbestos Cement	Safety and Reliability	60	TBD	Yes
216	Coastal Operating Area	ABSECON	Shore Road - Between Station Avenue & Faunce Landing Road (Shore Rd Mort ends 2014)	\$ 468,750	Replace	1740	16.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
217	Coastal Operating Area	ABSECON	Shore Road - Between Faunce Landing Road & Shady Lane (Shore Rd Mort ends 2014)	\$ 255,000	Replace	989	16.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
235	Coastal Operating Area	ABSECON	Shore Road - Between Shady Lane & Bayview Drive (ASMRP 1.10)	\$ 750,000	Replace	2417	16.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
236	Coastal Operating Area	ABSECON	Shore Road - Between Bayview Drive & Wyoming Avenue	\$ 3,233,750	Replace	1294	16.00	Ductile Iron	1920's	8	Cast Iron	System Flows and Pressure	60	TBD	Yes
237	Coastal Operating Area	ABSECON	Shore Road - Between Kessler Avenue & 200 Feet North of Kessler Avenue	\$ 60,000	Replace	206	16.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
5500	Coastal Operating Area	ABSECON	West Absecon Boulevard from Shore Road west 331 feet	\$ 41,375	Replace	285	8.00	Ductile Iron	1930's	6	Cast Iron	Water Quality	30	TBD	Yes
6058	Coastal Operating Area	ABSECON	Amy Lane between Shore Road and Bayview Drive	\$ 140,000	Replace	863	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6060	Coastal Operating Area	ABSECON	Wyoming Avenue between Shore Road and Pitney Road	\$ 650,000	Replace	2777	12.00	Ductile Iron	Unknown	12.00	Unknown	System Flows and Pressure	90	TBD	Yes
6066	Coastal Operating Area	ABSECON	Seminole Avenue between Alameda Avenue and Mill Road	\$ 178,400	Replace	1126	8.00	Ductile Iron	Unknown	8.00	Unknown	System Flows and Pressure	60	TBD	Yes
6083	Coastal Operating Area	ABSECON	Cedar Hill Drive between Reed Road and Burning Tree Blvd	\$ 58,000	Replace	389	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6085	Coastal Operating Area	ABSECON	Cynwyd Drive between Cedar Hill Drive and Park Avenue	\$ 268,000	Replace	1937	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6581	Coastal Operating Area	ABSECON	Burning Tree Blvd between Forest Hill Dr and Cedar Hill Dr	\$ 195,000	Replace	1304	8.00	PVC	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6583	Coastal Operating Area	ABSECON	Wynnewood Dr between Forest Hill Dr and 350' N. of US Rt 30	\$ 129,000	Replace	843	8.00	PVC	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6585	Coastal Operating Area	ABSECON	Briarcliff Place between Reed Rd and Park Ave	\$ 42,000	Replace	266	8.00	PVC	1960's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6587	Coastal Operating Area	ABSECON	Woods Road between Reed Rd and Hillside Circle	\$ 85,500	Replace	541	8.00	PVC	1960's	6	PVC	Safety and Reliability/Structural	60	TBD	Yes
107	Southwest Operating Area	AUDUBON	Audubon - Carlisle Road - Amhurst Road to Hopkins Road	\$ 285,000	Replace	1500	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
108	Southwest Operating Area	AUDUBON	Audubon - South Barrett Avenue - East Pine Street to Blow Off	\$ 266,000	Replace	1400	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5312	Southwest Operating Area	AUDUBON	Audubon - Cedarcroft Avenue - Walnut Street to Mansion Avenue	\$ 266,000	Replace	1400	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5315	Southwest Operating Area	AUDUBON	Audubon - North and South Haviland Avenue - East Graisbury Avenue to Cuthbert Blvd.	\$ 380,000	Replace	2000	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5929	Southwest Operating Area	AUDUBON	Audubon - Bringham Avenue / Park Place - Paris Avenue to Hopkins Avenue	\$ 418,000	Replace	2200	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5954	Southwest Operating Area	BARRINGTON	Barrington - Kingston Avenue - 3rd Avenue to 5th Avenue	\$ 266,000	Replace	1400	8.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
795	Coastal Operating Area	BAY HEAD	Bay Head - Clayton Ave from Johnson St north to terminus.	\$ 25,200	Replace	210	6.00	Ductile Iron	Unknown	1.5	HDPE	Safety and Reliability/Structural	30	TBD	Yes
798	Coastal Operating Area	BAY HEAD	Bay Head - Between Lake Ave and Rt 35 from Karge St south to terminus.	\$ 27,600	Replace	230	6.00	Ductile Iron	1930's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
801	Coastal Operating Area	BAY HEAD	Bay Head - Park Ave from West Lake Ave east to terminus.	\$ 4,800	Replace	40	6.00	Ductile Iron	1930's	2	Galvanized Steel	Safety and Reliability/Structural	30	TBD	Yes
802	Coastal Operating Area	BAY HEAD	Bay Head - Warren Pl from Osborne Ave to terminus.	\$ 15,600	Replace	130	6.00	Ductile Iron	1930's	2.5	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
803	Coastal Operating Area	BAY HEAD	Bay Head - Birch Pl from Twilight Rd to terminus.	\$ 18,000	Replace	150	6.00	Ductile Iron	1990's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6764	North Operating Area	BEDMINSTER	BEDMINSTER - Old Stonehouse Rd between Old Dutch Rd & Ski Hill Dr	\$ 440,000	Replace	2200	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	90	TBD	Yes

New Jersey American Water Company, Inc.
2018 DSIC Foundational Filing

Appendix C-1 (Supplemental List of Previously Approved Projects Under 2015 DSIC Foundational Filing)

6765	North Operating Area	BEDMINSTER	BEDMINSTER - Deer Haven Rd from Old Dutch Rd to dead end	\$ 260,000	Replace	1300	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	60	2025Q3	Yes
6766	North Operating Area	BEDMINSTER	BEDMINSTER - Ski Hill Dr off Route 206	\$ 800,000	Replace	4000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	120	2025Q3	Yes
6767	North Operating Area	BEDMINSTER	BEDMINSTER - White Oak Lane in easement between #21 & #45	\$ 35,000	Replace	200	6.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability	30	TBD	Yes
5667	Southwest Operating Area	BELLMAWR	Bellmawr - 1st Ave and N. Bellmawr Avenue - E. Browning Road to Existing 6"	\$ 114,000	Replace	600	8.00	Ductile Iron	1950's	2	Ductile Iron	System Flows and Pressure	60	TBD	Yes
5899	Southwest Operating Area	BELLMAWR	Bellmawr - Campanell Avenue - East Browning Road to Lake Drive	\$ 106,400	Replace	557	8.00	Ductile Iron	1940's	2	Cast Iron	System Flows and Pressure	60	TBD	Yes
24	North Operating Area	BELVIDERE	Belvidere - Water St (Wall St to Hardwick)	\$ 337,500	Replace	1500	12.00	Ductile Iron	Unknown	8	Cast Iron	System Flows and Pressure	60	2022Q3	Yes
64	North Operating Area	BELVIDERE	Belvidere - Oxford Street from Hardwick to 5th St	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	6	Cast Iron	System Flows and Pressure	90	TBD	Yes
5471	North Operating Area	BELVIDERE	4th Street from Franklin to 5th	\$ 188,125	Replace	1075	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	60	TBD	Yes
5472	North Operating Area	BELVIDERE	5th Street from 4th to Greenwich	\$ 527,000	Replace	2635	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	90	TBD	Yes
5473	North Operating Area	BELVIDERE	3rd ST from Oxford to Mansfield	\$ 267,750	Replace	1530	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	60	TBD	Yes
5474	North Operating Area	BELVIDERE	2nd St from Oxford to Dupue St.	\$ 443,000	Replace	2215	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	90	TBD	Yes
5475	North Operating Area	BELVIDERE	Greenwich St. from 3rd to Water	\$ 230,000	Replace	1150	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	60	TBD	Yes
5476	North Operating Area	BELVIDERE	In Market from Water St. to Manunkachunk Rd.	\$ 256,375	Replace	1465	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
5477	North Operating Area	BELVIDERE	Paul St. from Wall St. to Market St.	\$ 202,000	Replace	1010	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	60	TBD	Yes
5478	North Operating Area	BELVIDERE	Spring St from 4th St to 5th St.	\$ 91,875	Replace	525	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	60	TBD	Yes
5479	North Operating Area	BELVIDERE	Fisk St - Wall Street to end	\$ 62,500	Replace	415	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	30	TBD	Yes
559	North Operating Area	BERKELEY HEIGHTS	Berkeley Heights - Plainfield Ave. from Valley to Horseshoe - Phase 2	\$ 810,000	Replace	3600	12.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability	90	TBD	Yes
560	North Operating Area	BERKELEY HEIGHTS	Berkeley Heights - Plainfield Ave. from 400' north of Springfield to Mountain Ave	\$ 630,000	Replace	2800	12.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
561	North Operating Area	BERKELEY HEIGHTS	Berkeley Heights - Plainfield Ave from Valley to Horseshoe Phase 1	\$ 900,000	Replace	4000	12.00	Ductile Iron	1960's	12	Ductile Iron	Safety and Reliability/Structural	120	TBD	Yes
6169	North Operating Area	BERKELEY HEIGHTS	Rehab - Existing CI unlined mains in Berkeley Heights and New Providence	\$ 1,275,000	Rehab	51000	6.00	Cast Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	120	TBD	Yes
6689	North Operating Area	BERKELEY HEIGHTS	Pine Grove Road from Synder Ave to the end	\$ 281,000	Replace	1405	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6690	North Operating Area	BERKELEY HEIGHTS	Berkshire Dr From Mountain Ave to end cap	\$ 465,000	Replace	2325	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	90	2025Q3	Yes
6691	North Operating Area	BERKELEY HEIGHTS	Roosevelt Ave from Plainfield Ave to existing end	\$ 209,000	Replace	1045	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6692	North Operating Area	BERKELEY HEIGHTS	Woglum Place from Plainfield to End Cap	\$ 49,875	Replace	285	6.00	Ductile Iron	1980's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6693	North Operating Area	BERKELEY HEIGHTS	Hamilton Ave from Park Ave to Princeton Ave	\$ 171,500	Replace	980	6.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6694	North Operating Area	BERKELEY HEIGHTS	Dogwood Lane from Mountain Ave to Lenape Lane	\$ 558,000	Replace	2790	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6695	North Operating Area	BERKELEY HEIGHTS	Lenape Lane from Dogwood Lan to Lorraine Dr	\$ 288,000	Replace	1440	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6696	North Operating Area	BERKELEY HEIGHTS	Kline Place from Rickler Place to Maple Ave	\$ 132,000	Replace	660	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6697	North Operating Area	BERKELEY HEIGHTS	Baker Ave from Kline Place to Valve VBH-615 northwest of hydrant HBH-87	\$ 83,000	Replace	415	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
6698	North Operating Area	BERKELEY HEIGHTS	Hillside Ave from Timber Dr to Fern Pl	\$ 449,000	Replace	2245	8.00	Ductile Iron	1950's	6	Cast Iron	Water Quality	90	2024Q3	Yes
6699	North Operating Area	BERKELEY HEIGHTS	Holly Glen Lane N from Mountain Ave to Holly Glen Lane	\$ 174,000	Replace	870	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes

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6700	North Operating Area	BERKELEY HEIGHTS	Holly Glen Lane from end cap east of Holly Glen Lane N to Cambridge Dr	\$ 126,000	Replace	630	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6701	North Operating Area	BERKELEY HEIGHTS	Holly Glen Lane S from Holly Glen Lane to Pinnel Ct.	\$ 282,000	Replace	1410	8.00	Ductile Iron	1950's	6	Cast Iron	Water Quality	60	2024Q4	Yes
6702	North Operating Area	BERKELEY HEIGHTS	Cambridge Dr from Mountain Ave to Holly Glen Lane	\$ 156,000	Replace	780	8.00	Ductile Iron	1950's	8	Cast Iron	Water Quality	60	2025Q4	Yes
6703	North Operating Area	BERKELEY HEIGHTS	Deep Dale Dr from Mountain Ave to end cap	\$ 198,625	Replace	1135	6.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6704	North Operating Area	BERKELEY HEIGHTS	Tanglewood Lane from Deep Dale Dr to end cap	\$ 126,875	Replace	725	6.00	Ductile Iron	1950's	6	Cast Iron	Water Quality	60	TBD	Yes
6705	North Operating Area	BERKELEY HEIGHTS	Orchard Lane from Old Farm Rd to Emerson Lane	\$ 351,000	Replace	1755	8.00	Ductile Iron	1950's	5	Cast Iron	Water Quality	60	2024Q4	Yes
6708	North Operating Area	BERKELEY HEIGHTS	Forest Ave from Park Ave to Columbus Ave	\$ 373,000	Replace	1865	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
6709	North Operating Area	BERKELEY HEIGHTS	Eaton Ct. from Forest Ave to end cap	\$ 75,250	Replace	430	6.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
6710	North Operating Area	BERKELEY HEIGHTS	Cornell Ave from Mountain Ave to Hillcrest Ave	\$ 215,000	Replace	1075	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6768	North Operating Area	BERKELEY HEIGHTS	BERKELEY HEIGHTS - Berkeley Ave between Columbus & Park	\$ 60,000	Replace	300	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	30	2024Q3	Yes
6769	North Operating Area	BERKELEY HEIGHTS	BERKELEY HEIGHTS - Berkeley Av between Park and Columbia	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	60	TBD	Yes
6770	North Operating Area	BERKELEY HEIGHTS	BERKELEY HEIGHTS - Berkshire Drive from Mountain Ave to easement	\$ 360,000	Replace	1800	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6771	North Operating Area	BERKELEY HEIGHTS	BERKELEY HEIGHTS - Mountain Ave from Diamond Hill Rd to Park Ave	\$ 3,150,000	Replace	14000	12.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	120	2024Q3	Yes
6772	North Operating Area	BERKELEY HEIGHTS	BERKELEY HEIGHTS - Park Ave from Euclid to Mountain	\$ 840,000	Replace	4200	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability	120	2022Q3	Yes
6773	North Operating Area	BERKELEY HEIGHTS	BERKELEY HEIGHTS - Park Av between Euclid and Plainfield	\$ 560,000	Replace	2800	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	90	2022Q3	Yes
93	North Operating Area	BERNARDS TWP	Bernards - Martinsville Road from Alan to Valley	\$ 300,000	Replace	1500	8.00	Ductile Iron	1940's	8	Cast Iron	Safety and Reliability/Structural	60	2025Q3	Yes
555	North Operating Area	BERNARDS TWP	Bernards Twp - Haas Rd (between Stonehouse and Pond Hill)	\$ 840,000	Replace	4200	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	120	TBD	Yes
6182	North Operating Area	BERNARDS TWP	CREST DRIVE	\$ 380,000	Replace	1900	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6281	North Operating Area	BERNARDS TWP	Fieldstone Dr from Morristown Rd to Morristown Road	\$ 673,000	Replace	3365	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	90	2024Q4	Yes
6282	North Operating Area	BERNARDS TWP	Addison Dr from Archgate Rd to Warrick Lane	\$ 219,000	Replace	1095	8.00	Ductile Iron	1960's	8	Cast Iron	Water Quality	60	2024Q4	Yes
6283	North Operating Area	BERNARDS TWP	Franklin Dr. from Parkview to end cap	\$ 111,125	Replace	635	6.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6284	North Operating Area	BERNARDS TWP	Thackeray Dr from Pond Hill Rd to Keats Rd	\$ 253,000	Replace	1265	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6285	North Operating Area	BERNARDS TWP	Tuxford Terrace from Old Coach Rd to Victoria Drive	\$ 577,000	Replace	2885	8.00	Ductile Iron	1960's	8	Cast Iron	Water Quality	90	2024Q4	Yes
6286	North Operating Area	BERNARDS TWP	Canter Dr from Mt. Airy Road to Galloping Hill Road	\$ 342,000	Replace	1710	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6287	North Operating Area	BERNARDS TWP	Battle Hill Rd from Queen Anne Dr to Fairview Dr	\$ 170,000	Replace	850	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6288	North Operating Area	BERNARDS TWP	Gerald Ave from Woods End Dr to Sturo Place	\$ 429,000	Replace	2145	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6289	North Operating Area	BERNARDS TWP	Woodstone Dr from Peachtree Rd to Cross Rd	\$ 428,000	Replace	2140	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6290	North Operating Area	BERNARDS TWP	Rankin Ave from W. Henry Street to Cedar Street	\$ 300,000	Replace	1500	8.00	Ductile Iron	1960's	4	Cast Iron	Water Quality	60	2023Q3	Yes
6291	North Operating Area	BERNARDS TWP	Cedar Street from Rankin Ave to S. Finley Ave	\$ 112,000	Replace	560	8.00	Ductile Iron	1960's	4	Cast Iron	Water Quality	60	2025Q3	Yes
6293	North Operating Area	BERNARDS TWP	Allen St from Lee Place to N. Finley Ave	\$ 186,000	Replace	930	8.00	Ductile Iron	1940's	4	Cast Iron	Water Quality	60	2025Q3	Yes
6294	North Operating Area	BERNARDS TWP	W. Oak Street from N. Alward Ave to S. Finley Ave	\$ 522,000	Replace	2610	8.00	Ductile Iron	1930's	4	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes

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6295	North Operating Area	BERNARDS TWP	Manchester Ave from Prospect Ave to S. Maple Ave	\$ 420,000	Replace	2100	12.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6296	North Operating Area	BERNARDS TWP	Mt. Airy Road from PHL Hill Rd to Countryside Rd	\$ 533,250	Replace	2370	12.00	Ductile Iron	1970's	6	Cast Iron	Water Quality	90	2024Q3	Yes
6649	North Operating Area	BERNARDS TWP	Lyons Place from Lyons Rd to Valve V8ER-213B West of Hydrant HBER-730	\$ 315,000	Replace	1575	8.00	Ductile Iron	1930's	6	Cast Iron	Water Quality	60	TBD	Yes
6651	North Operating Area	BERNARDS TWP	Victoria Dr from Kensington Rd to Palmerston Dr	\$ 274,000	Replace	1370	8.00	Ductile Iron	1960's	6	Cast Iron	Water Quality	60	TBD	Yes
6652	North Operating Area	BERNARDS TWP	Granville Way from Kensington Rd to Palmerston Place	\$ 227,000	Replace	1135	8.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6654	North Operating Area	BERNARDS TWP	Riverside Drive from Hilltop Rd to Lord Sterling Rd	\$ 774,000	Replace	3870	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	90	2025Q4	Yes
6655	North Operating Area	BERNARDS TWP	Sherwood Dr from Lord Stirling Rd to end cal	\$ 162,000	Replace	810	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6656	North Operating Area	BERNARDS TWP	Dury Lane from Sherwood Dr to Riverside Dr	\$ 100,000	Replace	500	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6658	North Operating Area	BERNARDS TWP	Culberson Rd from Spencer Rd to the end cap west of S. Alward Ave	\$ 295,000	Replace	1475	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6716	North Operating Area	BERNARDS TWP	BERNARDS TWP - Keats Rd between Pond Hill Rd and Haas Rd	\$ 520,000	Replace	2600	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6774	North Operating Area	BERNARDS TWP	BERNARDS TWP - Dawn Dr between Lake & Autumn	\$ 240,000	Replace	1200	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6776	North Operating Area	BERNARDS TWP	BERNARDS TWP - Allen Rd from Somerville Rd to north of the stream	\$ 125,000	Rehab	500	12.00	Other	1980's	12	Ductile Iron	Safety and Reliability	60	TBD	Yes
6777	North Operating Area	BERNARDS TWP	BERNARDS TWP - Fairview Drive South from Lexington to Trinity	\$ 260,000	Replace	1300	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6778	North Operating Area	BERNARDS TWP	BERNARDS TWP - Fairview Drive South from Mt Airy to Fairview Dr East	\$ 70,000	Replace	350	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6779	North Operating Area	BERNARDS TWP	BERNARDS TWP - Gerard Ave from Lyons Pl to Woods End Dr	\$ 440,000	Replace	2200	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6780	North Operating Area	BERNARDS TWP	BERNARDS TWP - Glen Av and Stonybrook - Glen Av from Madisonville to Stonybrook and Stonybrook and Stonybrook from Glen to dead end	\$ 200,000	Replace	1000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	60	TBD	Yes
6781	North Operating Area	BERNARDS TWP	BERNARDS TWP - Juniper Way from South Maple to Manchester	\$ 200,000	Replace	1000	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	60	TBD	Yes
6783	North Operating Area	BERNARDS TWP	BERNARDS TWP - Old Madisonville Rd from Madisonville to dead end	\$ 122,500	Replace	700	6.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6784	North Operating Area	BERNARDS TWP	BERNARDS TWP - Queen Anne Dr from Battle Hill to west of Fairview Dr South	\$ 360,000	Replace	1800	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	60	TBD	Yes
6785	North Operating Area	BERNARDS TWP	BERNARDS TWP - Quincy Rd from Atlas Rd to Lyons Rd	\$ 300,000	Replace	1500	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6786	North Operating Area	BERNARDS TWP	BERNARDS TWP - South Alward Ave from West Oak to Beech	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	90	TBD	Yes
6820	North Operating Area	BERNARDS TWP	BERNARDS TWP - Valley Rd from Martinsville Rd to Lyons / Church	\$ 460,000	Replace	2300	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6840	North Operating Area	BERNARDS TWP	BERNARDS TWP - Old Army Rd between Oak Ridge Rd and HBER-68 past Van Courtland Rd	\$ 600,000	Replace	3000	8.00	Ductile Iron	Unknown	6	Cast Iron	Water Quality	90	2024Q4	Yes
6299	North Operating Area	BERNARDSVILLE	Old Fort Rd from Old Fort Rd to completing the loop	\$ 384,125	Replace	2195	6.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6300	North Operating Area	BERNARDSVILLE	Ambar Place from Mt. Airy Rd to Washington Ave	\$ 613,000	Replace	3065	8.00	Ductile Iron	1950's	8	Cast Iron	Water Quality	90	TBD	Yes
6301	North Operating Area	BERNARDSVILLE	Ann St from PHL Hill Rd to Dayton Crescent	\$ 216,000	Replace	1080	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6302	North Operating Area	BERNARDSVILLE	Dayton Crescent from intersection with Ann Street to South Street	\$ 142,000	Replace	710	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6303	North Operating Area	BERNARDSVILLE	South Street from Dayton Crescent to Mt. Airy Rd	\$ 92,000	Replace	460	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	30	2025Q3	Yes
6304	North Operating Area	BERNARDSVILLE	Mendham Road from Lloyd Rd to Chestnut Ave	\$ 585,000	Replace	2600	12.00	Ductile Iron	1950's	8	Cast Iron	System Flows and Pressure	90	2022Q3	Yes
6838	North Operating Area	BERNARDSVILLE	BERNARDSVILLE - Old Army Road between Mullens and Oak Ridge booster	\$ 472,500	Replace	2100	12.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	90	2025Q3	Yes
6839	North Operating Area	BERNARDSVILLE	BERNARDSVILLE - Old Army Rd from Anderson Rd to Mullens	\$ 280,000	Replace	1400	8.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability	60	TBD	Yes

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6853	North Operating Area	BERNARDSVILLE	BERNARDSVILLE - Old Fort Rd from Seney Dr around the whole circle and out Olcott to Old Army Rd	\$	600,000	Replace	3000	8.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability	90	2024Q3	Yes
6874	North Operating Area	BERNARDSVILLE	BERNARDSVILLE - Twin Lakes mains - especially Hull & Hillside	\$	910,000	Replace	5200	6.00	Ductile Iron	Unknown	4	Cast Iron	Water Quality	120	2022Q1	Yes
69	Central Operating Area	BOUND BROOK BOROUGH	Bound Brook - Vosseller Ave From Talmadge to Main st. small section of 4" pipe chokes flow to area.	\$	225,000	Replace	1000	12.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
5791	Central Operating Area	BOUND BROOK BOROUGH	Vosseller Ave Main replacement	\$	200,000	Replace	740	8.00	Ductile Iron	1920's	6	Cast Iron	Water Quality	60	2022Q4	Yes
469	Coastal Operating Area	BRICK TWP	Brick - Ocean Terr	\$	30,000	Replace	133	8.00	Ductile Iron	1940's	2	Galvanized Steel	System Flows and Pressure	30	TBD	Yes
774	Coastal Operating Area	BRICK TWP	Brick Twp - Cummins St from Rt 35 N to terminus.	\$	38,400	Replace	320	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
775	Coastal Operating Area	BRICK TWP	Brick Twp - Shell Rd from Rt 35 N to terminus.	\$	51,600	Replace	430	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
776	Coastal Operating Area	BRICK TWP	Brick Twp - Elder St from Rt 35 N to terminus add 6" DI.	\$	54,000	Replace	450	6.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	30	TBD	Yes
784	Coastal Operating Area	BRICK TWP	Brick Twp - Bowline Ave from Rt 35 N to Sunset Ln.	\$	21,600	Replace	180	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
7127	Coastal Operating Area	BRICK TWP	6th Ave (W Central Ave to Broad)	\$	120,000	Replace	600	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability	60	TBD	Yes
5318	Southwest Operating Area	CAMDEN	Camden - North 37th Street - Westfield Avenue to Jersey Avenue	\$	228,000	Replace	1200	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5319	Southwest Operating Area	CAMDEN	Camden - North 38th Street - Westfield Avenue to Jersey Avenue	\$	228,000	Replace	1200	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5320	Southwest Operating Area	CAMDEN	Camden - Jersey Avenue - North 36th Street to North 38th Street	\$	90,000	Replace	470	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
5480	Southwest Operating Area	CAMDEN	Camden - North 20th Street - River Road to Harrison Avenue	\$	256,500	Replace	1350	8.00	Ductile Iron	1920's	6	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5481	Southwest Operating Area	CAMDEN	Camden - North 31st Street - Hayes Avenue to Harrison Avenue	\$	342,000	Replace	2000	8.00	Ductile Iron	1900's	4	Cast Iron	Relocation/Opportunity	90	TBD	Yes
5825	Southwest Operating Area	CAMDEN	Camden - Harrison Avenue - North 28th Street to VCA-665	\$	138,700	Replace	730	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5826	Southwest Operating Area	CAMDEN	Camden - Wayne Avenue - North 27th Street to North 29th Street	\$	209,000	Replace	1100	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5827	Southwest Operating Area	CAMDEN	Camden - Lincoln Avenue - North 27th Street to North 29th Street	\$	209,000	Replace	1100	8.00	Ductile Iron	1930's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5829	Southwest Operating Area	CAMDEN	Camden - Hayes Avenue - North 27th Street to North 29th Street	\$	209,000	Replace	1100	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5833	Southwest Operating Area	CAMDEN	Camden - North 30th Street - River Avenue to Cleveland Avenue	\$	266,000	Replace	14000	8.00	Ductile Iron	1900's	6	Cast Iron	System Flows and Pressure	120	TBD	Yes
5834	Southwest Operating Area	CAMDEN	Camden - Lois Avenue - Harrison Avenue to Cleveland Avenue	\$	513,000	Replace	2700	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5838	Southwest Operating Area	CAMDEN	Camden - Thompson Street - North 28th Street to North 30th Street	\$	172,900	Replace	910	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5839	Southwest Operating Area	CAMDEN	Camden - North 29th Street - Pleasant Street to Mitchell Street	\$	128,250	Replace	675	8.00	Ductile Iron	1900's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5845	Southwest Operating Area	CAMDEN	Camden - North 28th Street - Thompson Street to Cramer Street	\$	228,000	Replace	1200	8.00	Ductile Iron	1900's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5849	Southwest Operating Area	CAMDEN	Camden - Pelham Place - North 32nd Street to North 34th Street	\$	114,000	Replace	600	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5850	Southwest Operating Area	CAMDEN	Camden - South 35th Street - Federal Street to Highland Avenue	\$	190,000	Replace	1000	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5851	Southwest Operating Area	CAMDEN	Camden - South 33rd Street - Federal Street to Highland Avenue	\$	307,800	Replace	1620	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5856	Southwest Operating Area	CAMDEN	Camden - North 37th Street - Westfield Avenue to Chestnut Avenue to North 36th Street	\$	290,700	Replace	1530	8.00	Ductile Iron	1930's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5857	Southwest Operating Area	CAMDEN	Camden - North 18th Street - Harrison Avenue to River Avenue	\$	251,750	Replace	1325	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5858	Southwest Operating Area	CAMDEN	Camden - Stewart Street - Howell Street to East State Street	\$	123,500	Replace	650	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5860	Southwest Operating Area	CAMDEN	Camden - River Avenue - North 27th Street to North 36th Street	\$	800,000	Replace	4000	12.00	Ductile Iron	1900's	6	Cast Iron	System Flows and Pressure	120	TBD	Yes

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5861	Southwest Operating Area	CAMDEN	Camden - North 29th Street - River Avenue to HCA-43	\$ 484,500	Replace	2550	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	90	TBD	Yes
5868	Southwest Operating Area	CAMDEN	Camden - Rosedale Avenue - North 34th Street to North 35th Street	\$ 47,500	Replace	250	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
5869	Southwest Operating Area	CAMDEN	Camden - Wayne Avenue - East State Street to 18th Street	\$ 152,000	Replace	800	8.00	Ductile Iron	1920's	6	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5870	Southwest Operating Area	CAMDEN	Camden - Buren Avenue - 27th Street to dead end east of 29th Street	\$ 237,500	Replace	1250	8.00	Ductile Iron	1930's	4	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5871	Southwest Operating Area	CAMDEN	Camden - North 27th Street - River Ave to 10" HDPE inside 12" CI at RR bridge south of Sherman Avenue	\$ 340,000	Replace	1700	12.00	Ductile Iron	1900's	12	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5872	Southwest Operating Area	CAMDEN	Camden - North 27th Street - High Street to 10" HDPE inside 12" CI at RR bridge near Pleasant St	\$ 240,000	Replace	1200	12.00	Ductile Iron	1900's	12	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5874	Southwest Operating Area	CAMDEN	Camden - N 35th St - existing 8" DI north of Harrison Ave to dead end south of River Ave	\$ 133,000	Replace	700	8.00	Ductile Iron	1900's	6	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5875	Southwest Operating Area	CAMDEN	Camden - Polk Ave - 27th St to 29th St	\$ 209,000	Replace	1100	8.00	Ductile Iron	1930's	4	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5876	Southwest Operating Area	CAMDEN	Camden - Tyler Ave - 27th St to 29th St	\$ 209,000	Replace	1100	8.00	Ductile Iron	1930's	4	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5877	Southwest Operating Area	CAMDEN	Camden - Marlton Ave - 12" in Federal St to 12" in Rosemont Ave	\$ 720,000	Replace	3600	12.00	Ductile Iron	1920's	8	Cast Iron	Relocation/Opportunity	90	TBD	Yes
5878	Southwest Operating Area	CAMDEN	Camden - 5 27th St - 16" in Westfield Ave to 12" in Marlton Ave	\$ 580,000	Replace	2900	12.00	Ductile Iron	1920's	6	Cast Iron	Relocation/Opportunity	90	TBD	Yes
5881	Southwest Operating Area	CAMDEN	Camden - Bergen Avenue - Farragut Avenue to Hayes Avenue	\$ 486,400	Replace	2560	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5882	Southwest Operating Area	CAMDEN	Camden - Beideman Ave - River Ave to Cleveland Ave and Cleveland Ave from Beideman Ave to N 32nd St	\$ 294,500	Replace	1550	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5884	Southwest Operating Area	CAMDEN	Camden - South 32nd Street - Ferrmont Ave to Highland Ave	\$ 150,000	Replace	825	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5885	Southwest Operating Area	CAMDEN	Camden - South Dudley Street - Federal Street to Fremont Avenue	\$ 285,000	Replace	1500	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5886	Southwest Operating Area	CAMDEN	Camden - Morse Street - Baird Blvd to Rosemont Avenue	\$ 323,000	Replace	1700	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5889	Southwest Operating Area	CAMDEN	Camden - Cooper Street - East State Street to HCA-204	\$ 57,000	Replace	300	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
5891	Southwest Operating Area	CAMDEN	Camden - Remington Street - North 32nd Street to North 34th Street	\$ 114,000	Replace	600	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5893	Southwest Operating Area	CAMDEN	Camden - Mitchell Street - North 32nd Street to North 34th Street	\$ 114,000	Replace	600	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5895	Southwest Operating Area	CAMDEN	Camden - North 35th Street - Rosedale Avenue to Federal Street	\$ 115,900	Replace	610	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5896	Southwest Operating Area	CAMDEN	Camden - Rudderow Avenue - North 36th Street to Dead End	\$ 95,000	Replace	500	8.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	60	TBD	Yes
456	Southwest Operating Area	CARNEYS POINT	Carneys Point- I-295 Jack and Bore at Georgetown Road	\$ 800,000	Replace	1500	12.00	Ductile Iron	1960's	8	Steel	Relocation/Opportunity	60	TBD	Yes
5322	Southwest Operating Area	CARNEYS POINT	Carneys Point - Johnson Street - North Broadway to Division Street	\$ 122,000	Replace	640	8.00	Ductile Iron	1910's	4	Cast Iron	Sustained Economic Growth	60	TBD	Yes
36	North Operating Area	CHATHAM TWP	Chatham - River Rd (Henry to Club)	\$ 240,000	Replace	1252	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
5692	North Operating Area	CHATHAM TWP	Maple Street from School Ave to end	\$ 128,000	Replace	850	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5695	North Operating Area	CHATHAM TWP	Clean and Line - Chtham Twsp Lafayette Section approx. 29500 Lf of CI mains	\$ 4,867,500	Rehab	29500	6.00	Cast Iron	1940's	6	Cast Iron	Water Quality	120	TBD	Yes
6660	North Operating Area	CHATHAM TWP	Green Village Rd from Meyersville Rd to Shunpike Rd.	\$ 1,382,000	Replace	6910	8.00	Ductile Iron	1940's	8	Cast Iron	Water Quality	120	2024Q4	Yes
6661	North Operating Area	CHATHAM TWP	Lenape Trail from Shunpike Rd to Lafayette Ave	\$ 412,000	Replace	2060	8.00	Ductile Iron	1950's	8	Asbestos Cement	Water Quality	90	2024Q4	Yes
6665	North Operating Area	CHATHAM TWP	Southern Blvd from Shunpike Rd to Woodmont Dr.	\$ 1,136,250	Replace	5050	12.00	Ductile Iron	1940's	8	Cast Iron	Safety and Reliability/Structural	120	2025Q4	Yes
6666	North Operating Area	CHATHAM TWP	May Drive from Noe Avenue to Robert Dr	\$ 493,000	Replace	2465	8.00	Ductile Iron	1950's	8	Cast Iron	Water Quality	90	2024Q3	Yes
6667	North Operating Area	CHATHAM TWP	Huron Dr and Macevoy Ave from end cap to Van Houton Ave.	\$ 765,000	Replace	3825	8.00	Ductile Iron	1960's	8	Cast Iron	Water Quality	90	2024Q4	Yes

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6669	North Operating Area	CHATHAM TWP	Van Houton Ave from end cap West of HCT- 216 to Macevoy Ave	\$ 785,000	Replace	3925	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6670	North Operating Area	CHATHAM TWP	Woodlawn Dr from Cypress Rd to Long Hill Lane	\$ 76,125	Replace	435	6.00	Ductile Iron	1960's	2	Cast Iron	System Flows and Pressure	30	TBD	Yes
6675	North Operating Area	CHATHAM TWP	Chestnut Rd from the end cap to Fairmount Avenue	\$ 121,500	Replace	810	4.00	Ductile Iron	1950's	2	Cast Iron	System Flows and Pressure	60	TBD	Yes
6676	North Operating Area	CHATHAM TWP	River Road from Club Road to Henry Drive	\$ 280,125	Replace	1245	12.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2025Q4	Yes
6677	North Operating Area	CHATHAM TWP	Edgewood Rd from Shunpike Rd to end cap east of hydrant HCT-104	\$ 220,000	Replace	1100	8.00	Ductile Iron	1940's	8	Cast Iron	Safety and Reliability	60	TBD	Yes
6678	North Operating Area	CHATHAM TWP	Fairfax Terrace from Edgewood Rd to Chatham Boro Fairfax Ter Interconnect #2	\$ 172,000	Replace	860	8.00	Ductile Iron	1940's	8	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6679	North Operating Area	CHATHAM TWP	Maple Ave from School Ave to Lafayette Ave	\$ 167,000	Replace	835	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6680	North Operating Area	CHATHAM TWP	School Ave from Floral Street to Maple Street	\$ 170,000	Replace	850	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6681	North Operating Area	CHATHAM TWP	Noe Avenue from Southern Blvd to Watchung Ave	\$ 736,875	Replace	3275	12.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	90	2024Q3	Yes
6682	North Operating Area	CHATHAM TWP	Overlook Rd from Ferndale Rd to Sandy Hill Rd	\$ 199,000	Replace	995	8.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6683	North Operating Area	CHATHAM TWP	Warwick Rd from Ferndale Rd to Oak Hill Rd	\$ 253,000	Replace	1265	8.00	Ductile Iron	1950's	6	Cast Iron	Water Quality	60	2024Q4	Yes
6684	North Operating Area	CHATHAM TWP	Thornley Dr from Beech Ct to Glenmere Dr	\$ 305,000	Replace	1525	8.00	Ductile Iron	1970's	8	Cast Iron	Water Quality	60	TBD	Yes
6715	North Operating Area	CHATHAM TWP	CHATHAM - Rolling Hill Rd between Southern and Dale	\$ 760,000	Replace	3800	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability	90	2025Q3	Yes
6721	North Operating Area	CHATHAM TWP	CHATHAM TWP - Jay Rd from Southern Blvd to the cul-de-sac	\$ 297,500	Replace	1700	6.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability	60	2024Q3	Yes
6854	North Operating Area	CHATHAM TWP	CHATHAM - Ormont Rd from cul-de-sac east of Henry to dead end west of Mountainside	\$ 600,000	Replace	3000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	90	2025Q4	Yes
6857	North Operating Area	CHATHAM TWP	CHATHAM - River Rd from Southern to Passaic	\$ 540,000	Replace	2700	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	90	2023Q3	Yes
6861	North Operating Area	CHATHAM TWP	CHATHAM - River Rd from Passaic to 60' west of HCT-160 (2000' east of Fairmont)	\$ 960,000	Replace	4800	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	120	2022Q1	Yes
6885	North Operating Area	CHATHAM TWP	CHATHAM - Spring St from Lafayette to Dale	\$ 280,000	Replace	1088	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability	60	2024Q4	Yes
327	Southwest Operating Area	CHERRY HILL	Cherry Hill - West / East Miami Avenue - Berkshire Avenue to Edgemoor Road	\$ 722,000	Replace	3800	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
330	Southwest Operating Area	CHERRY HILL	Cherry Hill - Park Circle - Churchill Road to Churchill Road	\$ 114,000	Replace	600	4.00	Ductile Iron	1950's	2.5	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
481	Southwest Operating Area	CHERRY HILL	Cherry Hill - Guilford Road - Croyden Drive to South Cropwell Road	\$ 475,000	Replace	2500	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
484	Southwest Operating Area	CHERRY HILL	Cherry Hill - Lisa Lane - Huntington Drive to Kings Point Road	\$ 142,500	Replace	750	8.00	Ductile Iron	1960's	Unknown	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5328	Southwest Operating Area	CHERRY HILL	Cherry Hill - Mona Court - Off Charlann Circle	\$ 57,000	Replace	300			1950's	2	Cast Iron	System Flows and Pressure	30	TBD	Yes
5691	Southwest Operating Area	CHERRY HILL	Cherry Hill - Charleston Road (A1 Project) - Barcroft Drive to White Oak Road	\$ 68,400	Replace	360	8.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
5859	Southwest Operating Area	CHERRY HILL	Cherry Hill - Bedford Avenue; Martin Avenue; Hollis Avenue; Graham Avenue; Sherwood Avenue - Mercer Street to Haddonfield Road	\$ 259,350	Replace	1365	4.00	Ductile Iron	1960's	2	Cast Iron	System Flows and Pressure	60	TBD	Yes
6617	Southwest Operating Area	CHERRY HILL	Cherry Hill - Janewood Drive - Country Club to Lavender Hill	\$ 150,000	Replace	800	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6618	Southwest Operating Area	CHERRY HILL	Cherry Hill - Queen Ann Road, Garwood Drive to Country Club Drive	\$ 320,000	Replace	1675	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	60	TBD	Yes
6280	North Operating Area	CHESTER BOROUGH	Route 206 well line replacement	\$ 270,000	Replace	1350	8.00	Ductile Iron	1940's	3	Cast Iron	Safety and Reliability	60	TBD	Yes
6337	North Operating Area	CHESTER BOROUGH	Clean & line CI mains in Chester Borough	\$ 3,250,000	Rehab	13000	8.00	Ductile Iron	Unknown	Unknown	Cast Iron	Water Quality	120	TBD	Yes
496	Southwest Operating Area	CINNAMINSON	Cinnaminson - Riverton Road and Chatham Court - Wayne Drive to Branch Pike	\$ 465,000	Replace	2440	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
284	Central Operating Area	CRANFORD TWP	Cranford - Chestnut Street4" main - 300 ft	\$ 54,000	Replace	300	6.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	30	2024Q4	Yes

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6686	Central Operating Area	CRANFORD TWP	Brookdale Pl. (Brookdale Rd. to Dead End)	\$ 56,000	Replace	320	6.00	Ductile Iron	1950's	2	Cast Iron	System Flows and Pressure	30	2024Q4	Yes
6845	Central Operating Area	CRANFORD TWP	North Ave. (Gallows Hill Rd. to Carpenter Pl.)	\$ 1,903,050	Rehab	8458	12.00	Cast Iron	1900's	12	Cast Iron	System Flows and Pressure	120	2025Q4	Yes
6954	Central Operating Area	CRANFORD TWP	S. Union Ave. (Lexington to W. Lincoln)	\$ 640,400	Replace	3202	8.00	Ductile Iron	1900's	6	Cast Iron	System Flows and Pressure	90	2024Q4	Yes
6955	Central Operating Area	CRANFORD TWP	Retford Ave. (Lexington to W. Lincoln)	\$ 621,600	Replace	3108	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	90	2024Q4	Yes
582	Coastal Operating Area	DEAL	Deal- Phillips Ave, From Norwood to HOT-306	\$ 250,000	Replace	730	12.00	Ductile Iron	1940's	2	Galvanize d Steel	Safety and Reliability/Structural	60	TBD	Yes
583	Coastal Operating Area	DEAL	Deal- Railroad Ave, from Phillips to Brighton	\$ 140,000	Replace	700	12.00	Ductile Iron	1940's	2	Galvanize d Steel	Safety and Reliability/Structural	60	TBD	Yes
5493	Coastal Operating Area	DEAL	Deal - Main Replacement Runyan ave Deal. From Norwood to end of street	\$ 120,000	Replace	655	8.00	Ductile Iron	1940's	2	Galvanize d Steel	Water Quality	60	TBD	Yes
349	Southwest Operating Area	DELRAN	Delran - Route 130 crossing at Haines Mill Road - at MacDonalds	\$ 100,000	Replace	200	12.00	Ductile Iron	1950's	12	Steel	Safety and Reliability/Structural	30	TBD	Yes
5995	Southwest Operating Area	EASTAMPTON TWP	Eastampton - Bedford Court - Nottingham Way to Dead End	\$ 95,000	Replace	500	4.00	Ductile Iron	1970's	2	PVC	System Flows and Pressure	60	TBD	Yes
6001	Southwest Operating Area	EASTAMPTON TWP	Eastampton - Suffolk Court - Nottingham Way to Dead End	\$ 190,000	Replace	1000	4.00	Ductile Iron	1970's	3	PVC	System Flows and Pressure	60	TBD	Yes
6003	Southwest Operating Area	EASTAMPTON TWP	Eastampton - Stafford Court - Nottingham Way to Dead End	\$ 66,500	Replace	350	4.00	Ductile Iron	1970's	2	PVC	System Flows and Pressure	30	TBD	Yes
6005	Southwest Operating Area	EASTAMPTON TWP	Eastampton - Kinsley Court - Kingsely Road to Kinsley Road	\$ 66,500	Replace	350	4.00	Ductile Iron	1970's	1	PVC	System Flows and Pressure	30	TBD	Yes
6006	Southwest Operating Area	EASTAMPTON TWP	Eastampton - Berwick Court - Nottingham Way to Dead End	\$ 95,000	Replace	500	4.00	Ductile Iron	1970's	2	PVC	System Flows and Pressure	60	TBD	Yes
6619	Southwest Operating Area	EDGEWATER PARK	Edgewater Park - Cherix Ave - Franklin Ave to Washington Ave	\$ 190,000	Replace	1000	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	60	TBD	Yes
6941	Coastal Operating Area	EGG HARBOR TWP	Longport-Somers Point Rd between Launch Ave and 800' east of Anchorage Dr	\$ 800,000	Replace	3123	12.00	PVC	1970's	10	Ductile Iron	Safety and Reliability/Structural	90	TBD	Yes
5488	Central Operating Area	FANWOOD	Paterson Rd.	\$ 671,000	Replace	3355	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	90	2025Q4	Yes
7001	Central Operating Area	FANWOOD	Beech Ave. (LaGrande to South)	\$ 399,200	Replace	1996	8.00	Ductile Iron	1900's	6	Cast Iron	System Flows and Pressure	60	2024Q4	Yes
7003	Central Operating Area	FANWOOD	Burns Way (Helen to S. Martine)	\$ 312,200	Replace	1561	8.00	Ductile Iron	1970's	6	Cast Iron	System Flows and Pressure	60	2024Q4	Yes
7004	Central Operating Area	FANWOOD	Forest Rd. (Midway to North)	\$ 267,000	Replace	1335	8.00	Ductile Iron	1910's	6	Cast Iron	System Flows and Pressure	60	2024Q4	Yes
7005	Central Operating Area	FANWOOD	Russell Rd. (Midway to North)	\$ 400,400	Replace	2002	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	90	2024Q4	Yes
7006	Central Operating Area	FANWOOD	Woodland Ave. (N. Martine to Dead end)	\$ 422,400	Replace	2112	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	90	2024Q4	Yes
6214	North Operating Area	FAR HILLS	DOUGLAS RD	\$ 900,000	Replace	4500	8.00	Ductile Iron	Unknown	3	Cast Iron	System Flows and Pressure	120	2022Q1	Yes
11	Central Operating Area	FRANKLIN TWP	Franklin - Nassau Streetfrom Griggs to Fort	\$ 42,000	Replace	280	8.00	Ductile Iron	Pre-1900	6	Cast Iron	Safety and Reliability/Structural	30	2022Q1	Yes
12	Central Operating Area	FRANKLIN TWP	Franklin - Fort Streetfrom Cedar to Nassau	\$ 112,500	Replace	750	8.00	Ductile Iron	Pre-1900	6	Cast Iron	Safety and Reliability/Structural	60	2022Q3	Yes
272	Coastal Operating Area	FREEHOLD TWP	Jamesburg -Half Acre Road	\$ 275,000	Replace	1500	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
307	Central Operating Area	GARWOOD BOROUGH	Garwood/Cranford Rehab - Ph3 25000 Lf of Distribution mains S of Unami Park	\$ 1,875,000	Rehab	25000	6.00	Other	1920's	6	Cast Iron	System Flows and Pressure	120	2024Q4	Yes
630	Central Operating Area	GARWOOD BOROUGH	Garwood/Cranford Rehab - Ph1a 6,330 LF of 16" main along Clifton & Sycamore Ave	\$ 1,481,000	Rehab	6330	16.00	Other	1920's	16	Cast Iron	System Flows and Pressure	120	2023Q4	Yes
631	Central Operating Area	GARWOOD BOROUGH	Garwood/Cranford Rehab - Ph 2a 7,600 Lf of Distribution mains NE of Unami Park	\$ 836,000	Rehab	7600	6.00	Other	1920's	6	Cast Iron	System Flows and Pressure	120	2024Q4	Yes
6844	Central Operating Area	GARWOOD BOROUGH	North Ave. (4th Ave. to Gallows Hill Rd.)	\$ 1,164,375	Rehab	5175	12.00	Cast Iron	1910's	12	Cast Iron	System Flows and Pressure	120	2024Q4	Yes
424	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - East High Street, East Atlantic Avenue to White Horse Pike	\$ 95,000	Replace	500	12.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5334	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - 4th Avenue - East Kings Highway to Highland Avenue	\$ 855,000	Replace	4423	8.00	Ductile Iron	1900's	4	Cement	Safety and Reliability	120	TBD	Yes

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5960	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - 8th Avenue - Garden Street to West High Street	\$ 163,400	Replace	860	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5961	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - East High Street - White Horse Pike to 4th Avenue	\$ 163,400	Replace	430	8.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
5962	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - Narberth Avenue - Wynnefield Avenue to South Black Horse Pike	\$ 129,200	Replace	680	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
7217	Southwest Operating Area	HADDON HEIGHTS	Haddon Heights - Green Street @ Atlantic Avenue (CR-729) - Railroad Crossing	\$ 200,000	Replace	250	12.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	30	TBD	Yes
5930	Southwest Operating Area	HADDON TWP	Haddon Township - Berwick Avenue - Black Horse Pike to Cold Spring	\$ 266,000	Replace	1400	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5931	Southwest Operating Area	HADDON TWP	Haddon Township - Lincoln Avenue - Black Horse Pike to Dead End	\$ 336,300	Replace	1770	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5932	Southwest Operating Area	HADDON TWP	Haddon Township - Delaware Avenue - Pershing Avenue to Marlborough Avenue	\$ 285,000	Replace	1500	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5933	Southwest Operating Area	HADDON TWP	Haddon Township - Marlborough Avenue - Black Horse Pike to Nicholson Road	\$ 541,500	Replace	2860	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5934	Southwest Operating Area	HADDON TWP	Haddon Township - New York Avenue - Nicholson Road to VHT-13983	\$ 79,800	Replace	720	8.00	Ductile Iron	1930's	1.5	Cast Iron	System Flows and Pressure	60	TBD	Yes
5935	Southwest Operating Area	HADDON TWP	Haddon Township - Shelburne Avenue - Crescent Blvd to Dead End	\$ 81,700	Replace	430	8.00	Ductile Iron	1930's	2	PVC	System Flows and Pressure	30	TBD	Yes
7092	Southwest Operating Area	HADDONFIELD	Haddonfield - Roberts Avenue - East Kings Highway (CR-41) to Dead End	\$ 342,000	Replace	1800	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
7094	Southwest Operating Area	HADDONFIELD	Haddonfield - Clinton Avenue - Bellevue Avenue to Oak Avenue	\$ 209,000	Replace	1100	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
7096	Southwest Operating Area	HADDONFIELD	Haddonfield - Friends Avenue - Lake Street to East Kings Highway (CR-41)	\$ 190,000	Replace	1000	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
7098	Southwest Operating Area	HADDONFIELD	Haddonfield - Lake Street - Haddon Avenue (CR-561) to Grove Street (CR-644)	\$ 285,000	Replace	1500	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
7100	Southwest Operating Area	HADDONFIELD	Haddonfield - West Cottage Avenue - Warwick Road (CR-669) to South Atlantic Avenue	\$ 228,000	Replace	1200	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
5519	Southwest Operating Area	HAINESPORT TWP	Hainesport - Marne Highway - Washington Street to Broad Street and Broad St, Marne Hwy to Edwin St	\$ 500,000	Replace	2500	12.00	Ductile Iron	1970's	8	Cast Iron	System Flows and Pressure	90	TBD	Yes
6981	Southwest Operating Area	HAINESPORT TWP	Hainesport - North Cumberland Avenue - Marne Highway (CR-573) to Dead End	\$ 247,000	Replace	1300	8.00	Ductile Iron	1950's	6	Asbestos Cement	Water Quality	60	TBD	Yes
6984	Southwest Operating Area	HAINESPORT TWP	Hainesport - 2nd Street - North Hunterdon Avenue to Dead End	\$ 171,000	Replace	900	8.00	Ductile Iron	1950's	3	Asbestos Cement	Water Quality	60	TBD	Yes
6985	Southwest Operating Area	HAINESPORT TWP	Hainesport - 1st Street - North Hunterdon Ave to North Cumberland Ave	\$ 95,000	Replace	500	8.00	Ductile Iron	1940's	4	Cast Iron	Water Quality	60	TBD	Yes
7011	Southwest Operating Area	HAINESPORT TWP	Hainesport - Maple Avenue (CR-682) - Marne Highway to Hydrant HHAS-7	\$ 81,320	Replace	425	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6884	North Operating Area	HARDING TWP	HARDING - Spring Valley Rd from Douglas to Meyersville	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	90	TBD	Yes
5623	Central Operating Area	HILLSBOROUGH TWP	Taylor Ave from Duke Pkwy to Johanson Ave	\$ 515,000	Replace	2575	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	90	2022Q4	Yes
5624	Central Operating Area	HILLSBOROUGH TWP	Johanson Ave from Dukes Pkwy to Taylor Road	\$ 715,000	Replace	3575	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	90	2022Q4	Yes
5672	Central Operating Area	HILLSBOROUGH TWP	Kimberly Road from Dukes Pkwy to Johanson Ave	\$ 200,000	Replace	1000	8.00	Ductile Iron	Unknown	4	Asbestos Cement	Safety and Reliability/Structural	60	2022Q4	Yes
5673	Central Operating Area	HILLSBOROUGH TWP	Hammler Road from Taylor Ave to Claudia Road	\$ 320,000	Replace	1600	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	60	2022Q4	Yes
5678	Central Operating Area	HILLSBOROUGH TWP	Gail Road between Hammler Road and Johanson Ave	\$ 120,000	Replace	600	8.00	Ductile Iron	1930's	4	Asbestos Cement	Safety and Reliability/Structural	60	2022Q4	Yes
5679	Central Operating Area	HILLSBOROUGH TWP	Claudia Road between Taylor Ave and Johanson Ave	\$ 160,000	Replace	800	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	60	2022Q4	Yes
5680	Central Operating Area	HILLSBOROUGH TWP	Hawly Road between Taylor Ave and Johanson Ave	\$ 140,000	Replace	700	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	60	2022Q4	Yes
5683	Central Operating Area	HILLSBOROUGH TWP	Cul-de-Sac near Inter section of Taylor Ave and Johanson Ave	\$ 50,000	Replace	250	8.00	Ductile Iron	1930's	4	Asbestos Cement	Safety and Reliability/Structural	30	2022Q4	Yes
5686	Central Operating Area	HILLSBOROUGH TWP	Dukes Pkwy between Taylor Ave and Johanson Ave	\$ 303,750	Replace	1350	12.00	Ductile Iron	1930's	10	Cast Iron	Safety and Reliability	60	2022Q4	Yes
5687	Central Operating Area	HILLSBOROUGH TWP	Dukes Pkwy from Johanson Ave to Dead End	\$ 155,000	Replace	775	8.00	Ductile Iron	1930's	10	Cast Iron	Safety and Reliability	60	2022Q4	Yes

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6505	Central Operating Area	HILLSIDE	Glenwood Ave from Eastern Pkwy to near hydrant HHSO-247	\$	122,000	Replace	610	12.00	Ductile Iron	1930's	6	Cast Iron	Water Quality	60	2024Q4	Yes
6507	Central Operating Area	HILLSIDE	Glenwood Ave from near valve VHSO-423 to hydrant HHSO-248	\$	80,000	Replace	400	12.00	Ductile Iron	Unknown	12.00	Unknown	Water Quality	30	2024Q4	Yes
6510	Central Operating Area	HILLSIDE	Easement between Bunett St and Glenwood Ave	\$	22,000	Replace	110	12.00	Ductile Iron	1930's	6	Unknown	Water Quality	30	2024Q4	Yes
6551	Central Operating Area	HILLSIDE	Bloy St from Rt 22 East to Long Ave	\$	34,000	Replace	170	12.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	30	2024Q4	Yes
6552	Central Operating Area	HILLSIDE	Long Ave from Bloy St to Liberty Ave	\$	366,000	Replace	1830	12.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	2024Q4	Yes
6554	Central Operating Area	HILLSIDE	Morris Place from Clark St to dead-end	\$	126,000	Replace	630	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	2024Q4	Yes
352	Southwest Operating Area	HI-NELLA	HiNella - Pawnee Road - Minnetonka Road to Wykagyl Road	\$	95,000	Replace	500	8.00	Ductile Iron	1960's	2	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
6722	North Operating Area	IRVINGTON	IRVINGTON - Essex St between Maple & Chancellor	\$	150,000	Replace	750	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability	60	TBD	Yes
6724	North Operating Area	IRVINGTON	IRVINGTON - Clinton Ave between Union & Ball	\$	35,000	Replace	200	6.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability/Structural	30	2025Q3	Yes
6880	North Operating Area	IRVINGTON	IRVINGTON - Howard St between May & Nye	\$	180,000	Replace	900	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability	60	2023Q3	Yes
6881	North Operating Area	IRVINGTON	IRVINGTON - Western Parkway from Woodlawn to Grove	\$	585,000	Replace	2600	12.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	90	2023Q3	Yes
5732	Central Operating Area	JAMESBURG	Pergola Ave Main Replacement	\$	600,000	Rehab	2400	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	90	2022Q4	Yes
6424	Central Operating Area	JAMESBURG	Forsgate Dr from Maple Dr to East Rail Road Ave	\$	630,000	Replace	2800	12.00	Ductile Iron	1940's	8	Stove Pipe	Safety and Reliability/Structural	90	2022Q4	Yes
6426	Central Operating Area	JAMESBURG	Half Acre Rd from Forsgate Dr to Fernwood Lane	\$	483,750	Replace	2150	12.00	Ductile Iron	Unknown	8	Stove Pipe	Safety and Reliability/Structural	90	2022Q4	Yes
6428	Central Operating Area	JAMESBURG	Birchwood Road from Maple Dr to dead end	\$	175,000	Replace	875	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6429	Central Operating Area	JAMESBURG	Cedar Lane from Maple Dr to Birchwood Road	\$	80,000	Replace	400	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	30	2022Q3	Yes
6430	Central Operating Area	JAMESBURG	Fernwood Lane from Half Acre Rd to Maple Drive	\$	160,000	Replace	800	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6432	Central Operating Area	JAMESBURG	Oakland Road from Half Acre Rd to Forsgate Drive	\$	300,000	Replace	1500	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6445	Central Operating Area	JAMESBURG	Woodland Road from Half Acre Road to Forsgate Drive	\$	335,000	Replace	1675	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2023Q4	Yes
6468	Central Operating Area	JAMESBURG	Front Street in between Oakland Road and Gatzmer Ave	\$	190,000	Replace	950	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6469	Central Operating Area	JAMESBURG	Davison Ave from Hillside Ave to West Church Street	\$	310,000	Replace	1550	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6471	Central Operating Area	JAMESBURG	Hillside Ave from Front Street to Divison Ave	\$	163,000	Replace	815	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6472	Central Operating Area	JAMESBURG	Hillside Ave from Davison Ave to Gatzmer Ave	\$	75,000	Replace	375	8.00	Ductile Iron	1940's	2	Stove Pipe	Safety and Reliability/Structural	30	2022Q4	Yes
6474	Central Operating Area	JAMESBURG	Pergola Ave from Forge Street to dead end	\$	580,000	Replace	2900	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	90	2022Q3	Yes
6475	Central Operating Area	JAMESBURG	Gerge Street from Pergola Ave to dead end	\$	38,000	Replace	150	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	30	2022Q4	Yes
6476	Central Operating Area	JAMESBURG	Walnut Street from Pergola Ave to dead end	\$	105,000	Replace	525	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6477	Central Operating Area	JAMESBURG	Buckelew Ave from Valve # VJB-346 to dead end	\$	580,000	Replace	2900	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	90	2022Q4	Yes
6483	Central Operating Area	JAMESBURG	Little Brook Lane from Buckelew Ave to Grace Hill Road	\$	320,000	Replace	1600	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6484	Central Operating Area	JAMESBURG	Grace Hill Road from Buckelew Ave to dead end	\$	175,000	Replace	875	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	60	2022Q4	Yes
6485	Central Operating Area	JAMESBURG	Travis Ct from Little Brook Lane to dead end	\$	75,000	Replace	300	8.00	Ductile Iron	1940's	6	Stove Pipe	Safety and Reliability/Structural	30	2022Q4	Yes
5578	Central Operating Area	KENILWORTH	14th St. (Lafayette to Boulevard)	\$	545,000	Replace	2272	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	90	2022Q3	Yes

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271	Coastal Operating Area	LAKEWOOD	Lakewood - Lincoln Ave (from MLK to Arlington Ave)	\$	138,000	Replace	690	8.00	Ductile Iron	1930's	8	Concrete	Relocation/Opportunity	60	TBD	Yes
273	Coastal Operating Area	LAKEWOOD	Lakewood - Maple Lane (from E 7th St to Hackett St)	\$	150,000	Replace	516	10.00	Ductile Iron	Unknown	10	Cast Iron	Safety and Reliability	60	TBD	Yes
537	Coastal Operating Area	LAKEWOOD	Jamesburg - Lake Street (from ___ to ___)	\$	200,000	Replace	200	8.00	Ductile Iron	1950's	6	Cast Iron	Relocation/Opportunity	30	TBD	Yes
6177	Coastal Operating Area	LAKEWOOD	5th Street from Lexington Ave to Mary's Lane	\$	284,000	Replace	1420	8.00	Ductile Iron	1930's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6178	Coastal Operating Area	LAKEWOOD	12th Street from Monmouth Ave to Squankum Rd	\$	316,000	Replace	1580	8.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6179	Coastal Operating Area	LAKEWOOD	Cedar Bridge from Rt 88 to Dr. MLK Drive	\$	516,600	Replace	2583	12.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability	90	TBD	Yes
6200	Coastal Operating Area	LAKEWOOD	9th Street from Madison Ave to Clifton Ave	\$	103,600	Replace	518	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6297	Coastal Operating Area	LAKEWOOD	W County Line Rd from Clifton Ave to Laurelwood Ave	\$	609,800	Replace	3049	16.00	Ductile Iron	1950's	8	Asbestos Cement	Sustained Economic Growth	90	TBD	Yes
6643	Coastal Operating Area	LAKEWOOD	Sunset Road - From Central to James	\$	620,000	Replace	3100	12.00	Ductile Iron	1930's	8	Unknown	Safety and Reliability/Structural	90	TBD	Yes
6924	Coastal Operating Area	LAKEWOOD	Hope Chapel Road from W. County Line Road to 14th Street	\$	285,000	Replace	1900	12.00	Ductile Iron	1930's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
5335	Southwest Operating Area	LAUREL SPRINGS	Laurel Springs - Fairmount Avenue - Stone Road to North White Horse Pike (Existing 6" Ductile Iron Main)	\$	304,000	Replace	1600	8.00	Ductile Iron	1950's	4	Cast Iron	Water Quality	60	TBD	Yes
5946	Southwest Operating Area	LAWNSIDE	Lawnside - Mott Street - North Warwick Road to Dead End	\$	161,500	Replace	850	8.00	Ductile Iron	1980's	6	Ductile Iron	System Flows and Pressure	60	TBD	Yes
5920	Southwest Operating Area	LINDENWOLD	Lindenwold - Columbus Avenue - Lake Blvd to Wade Avenue	\$	95,000	Replace	500	8.00	Ductile Iron	1970's	6	Ductile Iron	System Flows and Pressure	60	TBD	Yes
212	Coastal Operating Area	LINWOOD	Shore Road (LW PH 7) - Between Ocean Heights Avenue & Garfield Avenue	\$	487,500	Replace	1961	16.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	2024Q4	Yes
213	Coastal Operating Area	LINWOOD	Shore Road (LW PH 6) - Between Garfield Avenue & Iona Avenue	\$	140,000	Replace	541	16.00	Ductile Iron	1920's	6	Asbestos Cement	System Flows and Pressure	60	2023Q4	Yes
214	Coastal Operating Area	LINWOOD	Shore Road (LW PH 5) - Between Iona Avenue & Greenwich Avenue	\$	35,000	Replace	149	16.00	Ductile Iron	1920's	6	Ductile Iron	System Flows and Pressure	30	2022Q4	Yes
215	Coastal Operating Area	LINWOOD	Shore Road (LW PH 4) - Between Greenwich Avenue & Seaview Avenue	\$	167,500	Replace	650	16.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5600	Coastal Operating Area	LINWOOD	Iona Avenue from Shore Road to VLW-530, Woode-lyne Blvd from Iona Ave to Myrtle Ave and Myrtle Ave from Shore Rd to Arbor Dr	\$	412,000	Replace	1644	8.00	Ductile Iron	1950's	6	Asbestos Cement	Relocation/Opportunity	60	TBD	Yes
5607	Coastal Operating Area	LINWOOD	Dawn Drive between Franklin and End of Road and Woode-lyne Blvd between Dawn Dr and Iona Avenue	\$	300,000	Replace	1195	8.00	Ductile Iron	1960's	6	Cast Iron	Relocation/Opportunity	60	TBD	Yes
6099	Coastal Operating Area	LINWOOD	Haines Avenue between New Road and Shore Road	\$	376,000	Replace	2347	8.00	Ductile Iron	1910's	6	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6460	Coastal Operating Area	LINWOOD	Shore Road (LW PH 3) between Seaview Ave and Devonshire Ave	\$	950,000	Replace	3729	16.00	Ductile Iron	1910's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6461	Coastal Operating Area	LINWOOD	Patcong Avenue between Wabash Avenue and Shore Road	\$	220,000	Replace	898	16.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6462	Coastal Operating Area	LINWOOD	Hamilton Avenue (between New Rd and West Ave) West Avenue (between Joseph Ave and Patcong Ave)	\$	630,900	Replace	2103	16.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6538	Coastal Operating Area	LINWOOD	Garfield Ave between Shore Road and Wabash Avenue	\$	175,000	Replace	903	8.00	Ductile Iron	1930's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6539	Coastal Operating Area	LINWOOD	Greenwich Avenue between Shore Road and Wabash Avenue	\$	118,800	Replace	622	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6543	Coastal Operating Area	LINWOOD	E. Seaview Avenue between Shore Rd and Franklin Blvd	\$	122,500	Replace	716	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6544	Coastal Operating Area	LINWOOD	Belhaven Ave between Shore Rd and Oak Ave	\$	125,000	Replace	578	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6545	Coastal Operating Area	LINWOOD	W. Devonshire Ave between Shore Rd and Oak Avenue	\$	243,000	Replace	1235	12.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6546	Coastal Operating Area	LINWOOD	US Route 9 from Central Ave to Monroe Ave, Cleaning & Lining	\$	800,000	Rehab	4672	12.00	Cast Iron	1960's	12	Cast Iron	Water Quality	120	TBD	Yes
6548	Coastal Operating Area	LINWOOD	Barr Avenue between Maple Ave and Wabash Avenue & branch N. on Walbash	\$	350,000	Replace	1642	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6549	Coastal Operating Area	LINWOOD	Maple Avenue between US Rt 9 and Wilson Avenue	\$	152,000	Replace	790	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes

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6550	Coastal Operating Area	LINWOOD	Davis Avenue between Maple Avenue and Shore Road	\$ 412,000	Replace	2056	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	90	2025Q4	Yes
6561	Coastal Operating Area	LINWOOD	W. Vernon Avenue between Leeds Ave and Warren Ave	\$ 223,000	Replace	1110	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
65	North Operating Area	LITTLE FALLS	Little Falls - Main Street from Montclair Ave to Route 23	\$ 832,500	Replace	3700	12.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
5548	North Operating Area	LITTLE FALLS	Main St replacement (west end)	\$ 472,500	Replace	2100	12.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability	90	2022Q3	Yes
5549	North Operating Area	LITTLE FALLS	Long Hill Rd	\$ 1,417,500	Replace	6300	12.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability	120	TBD	Yes
5552	North Operating Area	LITTLE FALLS	Main St center portion	\$ 832,500	Replace	3700	12.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability	90	2022Q3	Yes
6735	North Operating Area	LITTLE FALLS	LITTLE FALLS - Montclair Ave from RR crossing to Oak Dr Cedar Grove	\$ 180,000	Replace	900	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
6739	North Operating Area	LITTLE FALLS	LITTLE FALLS - Notch Rd from rt 46 to Longhill Rd	\$ 380,000	Replace	1900	8.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability/Structural	60	2022Q3	Yes
6743	North Operating Area	LITTLE FALLS	LITTLE FALLS - Notchcroft Rd from Overlook Ave to Long Hill Rd	\$ 300,000	Replace	1500	8.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6744	North Operating Area	LITTLE FALLS	LITTLE FALLS - Overlook Ave from Lower Notch Rd to Notch Rd	\$ 460,000	Replace	2300	8.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability/Structural	90	2022Q3	Yes
6745	North Operating Area	LITTLE FALLS	LITTLE FALLS - Villa Rd from Longhill Rd	\$ 100,000	Replace	500	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6746	North Operating Area	LITTLE FALLS	LITTLE FALLS - Walnut St between Union and Stevens Ave	\$ 340,000	Replace	1700	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6747	North Operating Area	LITTLE FALLS	LITTLE FALLS - Wilmore Rd between Prospect St and 1st ave	\$ 370,000	Replace	1850	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
6836	North Operating Area	LITTLE FALLS	LITTLE FALLS - Woods Rd from Long Hill Rd to ROW	\$ 280,000	Replace	1400	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
6882	North Operating Area	LITTLE FALLS	LITTLE FALLS - Donato Drive - entire loop, plus Paul, Pine and Elm	\$ 592,000	Replace	2960	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability	90	2024Q4	Yes
6883	North Operating Area	LITTLE FALLS	LITTLE FALLS - Loretta Dr from Bergen to town line	\$ 90,000	Replace	450	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
250	Coastal Operating Area	LITTLE SILVER	Little Silver - Seven Bridges Road (from Little Silver Pl Rd to Holly Dr)	\$ 180,000	Replace	600	8.00	Ductile Iron	1950's	6	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5814	Coastal Operating Area	LITTLE SILVER	Winfield Dr Main Replacement	\$ 154,500	Replace	1030	8.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability	60	TBD	Yes
261	Coastal Operating Area	LONG BRANCH	Long Branch - Hoey Ave between Marshall and lennox	\$ 22,500	Replace	150	8.00	PVC	1990's	6	Ductile Iron	Safety and Reliability/Structural	30	TBD	Yes
5722	Coastal Operating Area	LONG BRANCH	Long Branch - John Street from Hendrickson Ave to terminus	\$ 145,000	Replace	600	6.00	Ductile Iron	1900's	2	Galvanized Steel	System Flows and Pressure	60	TBD	Yes
6244	North Operating Area	LONG HILL TWP	Hillside Drive from Long Hill Rd to Lacey Ave	\$ 156,000	Replace	780	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6500	North Operating Area	LONG HILL TWP	Long Hill Rd from Merersville Rd to Hydrant HLH-84 east of Gillette Rd.	\$ 949,500	Replace	4220	12.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	120	2023Q3	Yes
6504	North Operating Area	LONG HILL TWP	Meyersville Rd from New Vernon Rd to Crestwood Rd	\$ 662,000	Replace	3310	8.00	Ductile Iron	1960's	8	Cast Iron	Water Quality	90	2025Q4	Yes
6506	North Operating Area	LONG HILL TWP	Passaic Ave from Valley Rd to Hydrant HLH-75 just South of Somerset St.	\$ 370,000	Replace	1850	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6523	North Operating Area	LONG HILL TWP	Union Street from dead end to Warren Ave	\$ 312,000	Replace	1560	8.00	Ductile Iron	Unknown	6	Cast Iron	System Flows and Pressure	60	2023Q3	Yes
6528	North Operating Area	LONG HILL TWP	Mercer Street from Passaic Ave to end	\$ 327,000	Replace	1635	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6529	North Operating Area	LONG HILL TWP	Mercer Street from Passaic Ave to end	\$ 327,000	Replace	1635	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6533	North Operating Area	LONG HILL TWP	Railroad Ave from end to end	\$ 174,125	Replace	995	6.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6534	North Operating Area	LONG HILL TWP	Pine Street from High Street to Dead end	\$ 54,000	Replace	360	4.00	Ductile Iron	1930's	2	Cast Iron	System Flows and Pressure	30	2023Q3	Yes
6535	North Operating Area	LONG HILL TWP	Chestnut Street from North Ave to Central Ave	\$ 183,000	Replace	915	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	2024Q3	Yes
6536	North Operating Area	LONG HILL TWP	Central Ave from Long Hill Rd to Chestnut St	\$ 359,000	Replace	1795	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	2022Q1	Yes

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6723	North Operating Area	LONG HILL TWP	Maple Av from St Joseph to Delaware	\$ 170,000	Replace	850	8.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	2022Q3	Yes
6749	North Operating Area	LONG HILL TWP	LONG HILL - Elm St from Central Ave	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes
6750	North Operating Area	LONG HILL TWP	LONG HILL - Forest Dr from Lupine	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	2022Q1	Yes
6751	North Operating Area	LONG HILL TWP	LONG HILL - King Drive from Norwood Drive	\$ 190,000	Replace	950	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6752	North Operating Area	LONG HILL TWP	LONG HILL - Madison St Morristown Rd	\$ 230,000	Replace	1150	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6754	North Operating Area	LONG HILL TWP	LONG HILL - Western Blvd from Valley to end	\$ 300,000	Replace	1500	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6755	North Operating Area	LONG HILL TWP	LONG HILL - Winding Way from Chestnut St to High Street	\$ 500,000	Replace	2500	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6878	North Operating Area	LONG HILL TWP	LONG HILL - Oaks Rd from Basking Ridge Rd to Cross Hill Rd	\$ 210,000	Replace	1050	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability	60	TBD	Yes
5510	Southwest Operating Area	LUMBERTON TWP	Lumberton - Creek Road - Main Street to HULM-65	\$ 20,000	Replace	30	6.00	Ductile Iron	1970's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
6013	Southwest Operating Area	LUMBERTON TWP	Lumberton - Spout Spring Avenue - West South Avenue to Dead End	\$ 190,000	Replace	1000	8.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
282	Coastal Operating Area	MANTOLOKING	Mantoloking - Shell Road (from Rt 35 N to Terminus)	\$ 30,000	Replace	300	6.00	Ductile Iron	1940's	2	Cast Iron	Relocation/Opportunity	30	TBD	Yes
649	Coastal Operating Area	MANTOLOKING	Mantoloking - Barnegat Lane / Bay Ave	\$	Replace	1000	12.00	Ductile Iron	Unknown	Unknown	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
786	Coastal Operating Area	MANTOLOKING	Mantoloking - Old Bridge St from Bay Ave to terminus (bay).	\$ 25,200	Replace	222	4.00	Ductile Iron	1950's	2.5	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6577	Central Operating Area	MANVILLE BOROUGH	Huff Ave @ Bridge St	\$ 50,000	Replace	300	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability	30	2023Q4	Yes
6787	North Operating Area	MAPLEWOOD	Wyoming Historic District rehabilitation of cast iron water mains	\$ 4,500,000	Rehab	20000	6.00	Cast Iron	1910's	6	Cast Iron	Water Quality	120	TBD	Yes
6332	North Operating Area	MENDHAM BOROUGH	Bower Dr from Phoenix Dr. to Dean Rd	\$ 166,400	Replace	835	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6333	North Operating Area	MENDHAM BOROUGH	Rehab project- Horizon Dr and Glenbrook Rd	\$ 990,000	Rehab	6600	8.00	Cast Iron	Unknown	8	Cast Iron	System Flows and Pressure	120	TBD	Yes
6334	North Operating Area	MENDHAM BOROUGH	Rehab project- area next to West Morris High School and Tempe Wick Rd	\$ 1,990,000	Rehab	9950	8.00	Cast Iron	Unknown	8.00	Unknown	System Flows and Pressure	120	TBD	Yes
6339	North Operating Area	MENDHAM BOROUGH	Talmage Rd from Hilltop Road to Corey Lane	\$ 1,558,125	Replace	6925	12.00	Ductile Iron	Unknown	Unknown	Cast Iron	System Flows and Pressure	120	2024Q3	Yes
6341	North Operating Area	MENDHAM BOROUGH	Horseshoe Bend Rd from Bernardsville Rd to Corey Lane	\$ 1,428,750	Replace	6350	12.00	Ductile Iron	Unknown	8	Asbestos Cement	System Flows and Pressure	120	2025Q3	Yes
6791	North Operating Area	MENDHAM BOROUGH	MENDHAM BOROUGH - Country Lane from Main St to Lake Dr	\$ 330,000	Replace	1650	8.00	Ductile Iron	Unknown	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6792	North Operating Area	MENDHAM BOROUGH	MENDHAM BOROUGH - Hoffman Rd from Mountain Ave to Bowers	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6793	North Operating Area	MENDHAM BOROUGH	MENDHAM BOROUGH - Mansfield Rd from Maple Ave	\$ 80,000	Replace	400	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6830	North Operating Area	MENDHAM BOROUGH	MENDHAM TWP - Florie Farm Rd from Mountain Ave to Knollwood Trail	\$ 562,500	Replace	2500	12.00	Ductile Iron	Unknown	12	Ductile Iron	Safety and Reliability/Structural	90	TBD	Yes
6794	North Operating Area	MENDHAM TWP	MENDHAM TWP - Hilltop Cir from Deer Run to Cherry Lane	\$ 900,000	Replace	4500	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	120	2025Q4	Yes
6795	North Operating Area	MENDHAM TWP	MENDHAM TWP - Knollwood Trail from Deer Run to Farm Rd	\$ 860,000	Replace	4300	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	120	2025Q3	Yes
5257	Coastal Operating Area	MIDDLE TWP	Eldredge Road from Bennett Road to End	\$ 300,000	Replace	254	8.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
5608	Coastal Operating Area	MIDDLE TWP	Mechanic Street from 8-inch DI to Dias Creek Road	\$ 140,000	Replace	631	12.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5609	Coastal Operating Area	MIDDLE TWP	Mechanic Street from the railroad tracks to North Boyd Street	\$ 110,000	Replace	1650	12.00	Ductile Iron	1980's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5614	Coastal Operating Area	MIDDLE TWP	Dias Creek Road from Mechanic Street to Hand Avenue	\$ 124,000	Replace	592	12.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
6132	Coastal Operating Area	MIDDLE TWP	Atlantic Avenue between Boyd St and Route 9	\$ 131,250	Replace	722	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes

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6134	Coastal Operating Area	MIDDLE TWP	Bennett Road between Route 9 and Bayberry Dr, Bore Under Parkway	\$ 512,500	Replace	1650	8.00	Ductile Iron	1940's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
6135	Coastal Operating Area	MIDDLE TWP	Boyd Street between Romney Place and Mechanic St	\$ 162,750	Replace	923	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6136	Coastal Operating Area	MIDDLE TWP	Boyd Street between Stites Ave and Pacific Ave	\$ 250,250	Replace	1396	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6138	Coastal Operating Area	MIDDLE TWP	Douglass Rd between Bennett Rd and southern end of Douglass	\$ 27,125	Replace	153	6.00	Ductile Iron	1980's	6	Ductile Iron	Safety and Reliability	30	TBD	Yes
6139	Coastal Operating Area	MIDDLE TWP	Poplar Street between Mechanic St and Church St	\$ 94,500	Replace	538	8.00	Ductile Iron	1970's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
6142	Coastal Operating Area	MIDDLE TWP	Eldredge Road between Steel Rd and End of Eldredge	\$ 105,000	Replace	439	6.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability	30	TBD	Yes
6143	Coastal Operating Area	MIDDLE TWP	Fitch Road between Steel Rd and End of Fitch Rd	\$ 122,500	Replace	679	8.00	Ductile Iron	1940's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
6144	Coastal Operating Area	MIDDLE TWP	Steel Road between Hewitt Rd and End of Steel Rd	\$ 36,750	Replace	208	8.00	Ductile Iron	1940's	8	Asbestos Cement	Safety and Reliability	30	TBD	Yes
6145	Coastal Operating Area	MIDDLE TWP	Bennett Road between GSP and Fitch Rd	\$ 183,300	Replace	1188	8.00	Ductile Iron	1940's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6147	Coastal Operating Area	MIDDLE TWP	Meridian Ln between Orbit Dr and End of Meridian	\$ 63,000	Replace	476	6.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability	30	TBD	Yes
6152	Coastal Operating Area	MIDDLE TWP	Orbit Lane between Route 9 and End of Orbit Ln loop	\$ 229,250	Replace	2111	8.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	90	TBD	Yes
6153	Coastal Operating Area	MIDDLE TWP	Colonial Avenue between Route 9 and End of Colonial	\$ 196,000	Replace	1062	8.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
6155	Coastal Operating Area	MIDDLE TWP	Stites Avenue between Boyd St and Main St	\$ 166,250	Replace	665	8.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
6156	Coastal Operating Area	MIDDLE TWP	Easy Street between Route 9 and End of Easy St	\$ 120,750	Replace	689	8.00	Ductile Iron	1970's	8	Asbestos Cement	Safety and Reliability	60	TBD	Yes
580	Coastal Operating Area	MIDDLETOWN	Middletown - Campbell Avenue Bridge over Creek	\$ 30,000	Replace	100	8.00	HDPE	1950's	8	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
593	Coastal Operating Area	MIDDLETOWN	Middletown - River Road, McClee's creek	\$ 280,000	Replace	800	12.00	HDPE	1930's	12	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5799	Coastal Operating Area	MIDDLETOWN	Viola Ave Main Replacement	\$ 60,000	Replace	400	8.00	Ductile Iron	1930's	2	Galvanize d Steel	Safety and Reliability	30	TBD	Yes
5808	Coastal Operating Area	MIDDLETOWN	Appleton Ave Main Replacement	\$ 150,000	Replace	1000	8.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability	60	TBD	Yes
5900	Coastal Operating Area	MIDDLETOWN	Navesink River Road (west) Main Replacement	\$ 600,000	Replace	2900	12.00	Ductile Iron	1940's	12	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
7040	Coastal Operating Area	MIDDLETOWN	Lexington Ct Main Replacement	\$ 150,000	Replace	1000	8.00	PVC	1960's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
40	North Operating Area	MILLBURN	Millburn - Browning Rd, Tennyson to White Oak	\$ 380,000	Replace	1900	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6183	North Operating Area	MILLBURN	KNOLLWOOD FROM WELLS TO PARK	\$ 100,000	Replace	500	8.00	Ductile Iron	1900's	3	Cast Iron	System Flows and Pressure	60	2024Q3	Yes
6208	North Operating Area	MILLBURN	FIELDING MILLBURN	\$ 91,000	Replace	520	6.00	Ductile Iron	1950's	2	Cast Iron	System Flows and Pressure	60	2025Q3	Yes
6790	North Operating Area	MILLBURN	Wyoming Historic District rehabilitation of unlined cast iron water mains	\$ 4,500,000	Rehab	20000	6.00	Cast Iron	1910's	6	Cast Iron	Water Quality	120	TBD	Yes
6796	North Operating Area	MILLBURN	MILLBURN - East Pine Terr from Blatusrol Way to Campbell Rd	\$ 180,000	Replace	900	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
6797	North Operating Area	MILLBURN	MILLBURN - Highview Rd from Hartshorn Dr and Farbrook Dr	\$ 220,000	Replace	1100	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6799	North Operating Area	MILLBURN	MILLBURN - Kean Rd from Winthrop Rd	\$ 460,000	Replace	2300	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	2025Q4	Yes
6800	North Operating Area	MILLBURN	MILLBURN - Silver Spring Rd from South Orange Ave to Old Short Hills Rd	\$ 1,200,000	Replace	6000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	120	2025Q3	Yes
6831	North Operating Area	MILLBURN	MILLBURN - Hartshorn Dr from Highview Rd to Oakley Rd	\$ 380,000	Replace	1900	12.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6832	North Operating Area	MILLBURN	MILLBURN - Hartshorn Dr from Randall Dr to grade line	\$ 420,000	Replace	2100	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2022Q3	Yes
6875	North Operating Area	MILLBURN	MILLBURN - Great Hills Rd from Old Short Hills to Wildwood	\$ 280,000	Replace	1400	8.00	Ductile Iron	1900's	6	Cast Iron	Safety and Reliability	60	2025Q3	Yes

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6876	North Operating Area	MILLBURN	MILLBURN - Main St from Route 78 to Essex St	\$ 680,000	Replace	3400	8.00	Ductile Iron	Unknown	4	Cast Iron	Relocation/Opportunity	90	2025Q3	Yes
6897	North Operating Area	MILLBURN	MILLBURN - Hobart from White Oak Ridge to Brantwood	\$ 280,000	Replace	1400	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability	60	2025Q3	Yes
6898	North Operating Area	MILLBURN	MILLBURN - Hobart from South St to White Oak Ridge	\$ 480,000	Replace	2287	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability	90	2024Q3	Yes
6899	North Operating Area	MILLBURN	MILLBURN - Hobart from Highland to Station St	\$ 170,000	Replace	850	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	60	TBD	Yes
6900	North Operating Area	MILLBURN	MILLBURN - Hobart from Old Short Hills Rd to Whitney	\$ 220,000	Replace	1027	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability	60	TBD	Yes
7111	North Operating Area	MILLBURN	Canoe Brook Rd Main Replacement	\$ 182,000	Replace	910	8.00	Ductile Iron	Unknown	Unknown	Unknown	System Flows and Pressure	60	TBD	Yes
5805	Coastal Operating Area	MONMOUTH BEACH	Riverdale Ave Main Replacement	\$ 352,000	Replace	2350	12.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability	90	TBD	Yes
5513	Southwest Operating Area	MOUNT HOLLY TWP	Mt Holly - Hydrants near intersection of Mill St and High St and intersection of Broad St and Buttonwood St	\$ 30,000	Replace	150	6.00	Ductile Iron	Unknown	6.00	Unknown	System Flows and Pressure	30	TBD	Yes
5514	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly/Lumberton - Madison Avenue/Main Street - Washington Street to VLUM-585 (North of Ellis Avenue)	\$ 1,000,000	Replace	4500	12.00	Ductile Iron	1920's	8	Cast Iron	System Flows and Pressure	120	TBD	Yes
5515	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Rancocas Road - Lambert Drive to Levis Drive	\$ 600,000	Replace	2650	12.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5516	Southwest Operating Area	MOUNT HOLLY TWP	Mt. Holly - Jacksonville Rd - Stevens Dr to Broad St and Rancocas Valley Reg. H.S. driveway	\$ 440,000	Replace	2300	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	90	TBD	Yes
5517	Southwest Operating Area	MOUNT HOLLY TWP	Mt Holly - Hydrants near intersection of Pine St and Hulme St	\$ 30,000	Replace	150	6.00	Ductile Iron	Unknown	6.00	Unknown	System Flows and Pressure	30	TBD	Yes
5518	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Pine Street - Hearld Avenue to East South Avenue	\$ 190,000	Replace	950	12.00	Ductile Iron	1920's	8	Cast Iron	System Flows and Pressure	60	TBD	Yes
5520	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly/Hainesport - Marne Highway / Washington Street - King Street to Deacon Road	\$ 1,200,000	Replace	5200	16.00	Ductile Iron	1950's	8	Cast Iron	System Flows and Pressure	120	TBD	Yes
5545	Southwest Operating Area	MOUNT HOLLY TWP	Mt. Holly / Hainesport - Clean and line (or replace in kind) CI mains on multiple streets	\$ 975,000	Rehab	6500			1930's	6	Cast Iron	Water Quality	120	TBD	Yes
5840	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Green Street - Station to Hillside Rd via Green St, Mill St, and Buttonwood St	\$ 860,000	Replace	4300	12.00	Ductile Iron	Pre-1900	12	Cast Iron	Safety and Reliability	120	TBD	Yes
5966	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Wesley Court - Hickory Street to Dead End	\$ 57,000	Replace	300	4.00	Ductile Iron	1950's	3	Asbestos Cement	System Flows and Pressure	30	TBD	Yes
5967	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Windsor Place - Homestead Avenue to Dead End	\$ 57,000	Replace	300	4.00	Ductile Iron	1950's	4	Asbestos Cement	System Flows and Pressure	30	TBD	Yes
6336	Southwest Operating Area	MOUNT HOLLY TWP	Mt. Holly - Clean and line neighborhood north of Green St Station	\$ 1,575,000	Rehab	10500			1920's	8	Cast Iron	Water Quality	120	TBD	Yes
6989	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Somerset Avenue, Holeman Street, Carlton Avenue - Washington Street to Washington Street	\$ 247,000	Rehab	1300	8.00	Ductile Iron	1900's	6	Cast Iron	Water Quality	60	TBD	Yes
6991	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Lippincott Lane and Eagle Avenue - Washington Street to Dead End	\$ 294,500	Rehab	1550	8.00	Ductile Iron	1930's	8	Cast Iron	Water Quality	60	TBD	Yes
6992	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - Oak Street and Chestnut Street - Washington Street to capped main on Chestnut	\$ 190,000	Replace	971	8.00	Ductile Iron	1920's	6	Cast Iron	Water Quality	60	TBD	Yes
7203	Southwest Operating Area	MOUNT HOLLY TWP	Mount Holly - North and South Martin Avenue - Levis Drive to Levis Drive	\$ 425,600	Replace	2260	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	90	TBD	Yes
5939	Southwest Operating Area	MT EPHRAIM	Mount Ephraim - Cleveland Avenue - West Kings Highway to Dead End	\$ 218,500	Replace	1150	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5940	Southwest Operating Area	MT EPHRAIM	Mount Ephraim - Jefferson Avenue - West Kings Highway to Dead End	\$ 228,000	Replace	1200	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5941	Southwest Operating Area	MT EPHRAIM	Mount Ephraim - Hill Avenue - East Kings highway to VME-43	\$ 121,600	Replace	640	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5942	Southwest Operating Area	MT EPHRAIM	Mount Ephraim - Lambert Avenue and Park Circle Drive - Station Avenue to VME-378	\$ 389,500	Replace	2050	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	90	TBD	Yes
5943	Southwest Operating Area	MT EPHRAIM	Mount Ephraim - Rudderow Avenue - Bell Road to Dead End	\$ 114,000	Replace	600	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
6609	Southwest Operating Area	MT EPHRAIM	Mount Ephraim - Harding Avenue and Lowell Avenue - West Kings Highway (CR-551) to Bell Road (CR-658)	\$ 575,000	Replace	3000	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6041	Coastal Operating Area	NEPTUNE	Couse Rd.	\$ 236,000	Replace	1350	8.00	Ductile Iron	1920's	2	Cast Iron	Safety and Reliability	60	TBD	Yes
556	North Operating Area	NEW PROVIDENCE	New Providence - Livingston Ave. from Central to South of Greenwood Rd	\$ 440,000	Replace	2200	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes

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6801	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - 6TH Ave from Livingston Ave	\$ 70,000	Replace	350	8.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability/Structural	30	2025Q4	Yes
6802	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Acorn Dr from Central Ave and Tall Oaks	\$ 230,000	Replace	1150	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6804	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Central Ave from Maple to Brook Hollow	\$ 440,000	Replace	2200	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	2025Q4	Yes
6805	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Gales Dr from South St to Springfield Ave	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes
6806	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Hawthorne Dr from Central Ave to Pearl St	\$ 360,000	Replace	1800	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6809	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Magnolia Dr from Springfield Ave to Valentine Rd	\$ 250,000	Replace	1250	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6813	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Pearl St from Central Ave to Fickler Pl	\$ 300,000	Replace	1500	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q3	Yes
6814	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Pine Ct from Pine Way	\$ 100,000	Replace	500	8.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6815	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Pleasant View Ave from Livingston ave to Springfield Ave	\$ 420,000	Replace	2100	8.00	Ductile Iron	Unknown	Unknown	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes
6817	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - South St from Dian Ct to Springfield Ave	\$ 740,000	Replace	3700	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2025Q3	Yes
6847	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - The Fellsway from Maple St to Forest Rd	\$ 400,000	Replace	2000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2025Q3	Yes
6848	North Operating Area	NEW PROVIDENCE	NEW PROVIDENCE - Walton Ave from Passaic St to Hedden Pl	\$ 440,000	Replace	2200	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2025Q3	Yes
206	Coastal Operating Area	NORTHFIELD	Tilton Road - Between Mill Road and Wabash Avenue (Tilton Moratorium ends 2013)	\$ 187,000	Replace	853	8.00	Ductile Iron	1960's	2	Cast Iron	System Flows and Pressure	60	TBD	Yes
207	Coastal Operating Area	NORTHFIELD	Tilton Road - Between Wabash Avenue & Zion Road (Tilton Moratorium ends 2013)	\$ 66,000	Replace	180	8.00	Ductile Iron	1970's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
6101	Coastal Operating Area	NORTHFIELD	Zion Road between New Road and Wabash Avenue	\$ 420,000	Replace	2495	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6102	Coastal Operating Area	NORTHFIELD	Northfield Avenue between Zion Road and Shore Road	\$ 162,750	Replace	1051	8.00	Ductile Iron	1910's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6562	Coastal Operating Area	NORTHFIELD	W. Oakcrest Avenue between US Rt 9 and Shore Road	\$ 420,000	Replace	2041	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6564	Coastal Operating Area	NORTHFIELD	W. Glencove Avenue between US Rt 9 and Wabash Avenue	\$ 280,000	Replace	1252	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6565	Coastal Operating Area	NORTHFIELD	W. Yorkshire Avenue between Shore Road and Wabash Ave	\$ 146,000	Replace	652	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6566	Coastal Operating Area	NORTHFIELD	Roosevelt Avenue between US Rt 9 and Tilton Road	\$ 205,000	Replace	895	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6568	Coastal Operating Area	NORTHFIELD	Lake Ave/Maple Ave between Evergreen Ave and Leo Fraser Dr	\$ 240,000	Replace	1193	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6571	Coastal Operating Area	NORTHFIELD	Spruce Ave between US Rt 9 and Maple Ave	\$ 180,000	Replace	599	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6572	Coastal Operating Area	NORTHFIELD	Willow Drive between Tilton Road and Zion Road	\$ 140,000	Replace	838	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6573	Coastal Operating Area	NORTHFIELD	Locust Drive between Tilton Road and Zion Road	\$ 212,000	Replace	1060	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6574	Coastal Operating Area	NORTHFIELD	Wabash Avenue between Tilton Road and Zion Road	\$ 126,000	Replace	630	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6597	Coastal Operating Area	NORTHFIELD	Northfield Ave between Zion Road and Tilton Road	\$ 170,000	Replace	698	8.00	Ductile Iron	1940's	6	Ductile Iron	Safety and Reliability/Structural	60	TBD	Yes
6601	Coastal Operating Area	NORTHFIELD	Infield Avenue between Tilton Rd and Wabash Ave	\$ 183,000	Replace	1117	12.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6602	Coastal Operating Area	NORTHFIELD	1st Street between Infield Avenue and Davis Avenue	\$ 132,000	Replace	638	12.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6906	Coastal Operating Area	NORTHFIELD	US Route 9 between Oakcrest Ave and Cedar Bridge, Clean and Line	\$ 650,000	Rehab	2921	12.00	Cast Iron	1960's	12	Cast Iron	Water Quality	90	TBD	Yes
6917	Coastal Operating Area	NORTHFIELD	Bonnie Lee Dr between County Club Dr and Heather Dr	\$ 95,400	Replace	1056	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
5348	Southwest Operating Area	OAKLYN	Oaklyn - Manor Avenue - West Clinton Avenue to Dead End and Goff Avenue	\$ 399,000	Replace	2200	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	90	TBD	Yes

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5726	Southwest Operating Area	OAKLYN	Oaklyn - West Park Avenue - Manor Avenue to Maple Avenue	\$ 193,800	Replace	1020	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5727	Southwest Operating Area	OAKLYN	Oaklyn - West Cedar Avenue - Manor Avenue to Kendall Blvd	\$ 148,200	Replace	780	8.00	Ductile Iron	1910's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5730	Southwest Operating Area	OAKLYN	Oaklyn - Oaklawn Avenue - Laurie Lane to East Clinton Avenue	\$ 228,000	Replace	1200	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5733	Southwest Operating Area	OAKLYN	Oaklyn - West Beechwood Avenue - White Horse Pike to Manheim Avenue	\$ 190,000	Replace	1000	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5919	Southwest Operating Area	OAKLYN	Oaklyn - Capital Avenue - North White Horse Pike to Newton Avenue	\$ 95,000	Replace	500	8.00	Ductile Iron	1900's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
264	Coastal Operating Area	OCEAN	Ocean - Laurel Avenue (from ___ to ___)	\$ 60,000	Replace	400	8.00	Ductile Iron	Unknown	2	Galvanize d Steel	System Flows and Pressure	30	TBD	Yes
564	Coastal Operating Area	OCEAN	Ocean - Kenneth from Poplar to terminus	\$ 270,000	Replace	1800	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
565	Coastal Operating Area	OCEAN	Ocean - Maple Street Parker to Sherman	\$ 112,500	Replace	750	8.00	Ductile Iron	1930's	2	Galvanize d Steel	Safety and Reliability/Structural	60	TBD	Yes
567	Coastal Operating Area	OCEAN	Ocean - Golf Road from Sherman to Runyon	\$ 150,000	Replace	898	8.00	Ductile Iron	1930's	4	Galvanize d Steel	Safety and Reliability/Structural	60	TBD	Yes
5254	Coastal Operating Area	OCEAN	Ocean - Grant Ave	\$ 70,000	Replace	1664	6.00	Ductile Iron	Unknown	2	Galvanize d Steel	Water Quality	60	TBD	Yes
6004	Coastal Operating Area	OCEAN	Roosevelt Avenue from Highwood Road to Monmouth Road	\$ 360,000	Replace	1759	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6014	Coastal Operating Area	OCEAN	Freehold Street from Highwood Road to Whalepond Road	\$ 270,000	Replace	1350	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6038	Coastal Operating Area	OCEAN	Delaware Avenue from valve VOT-2402 to valve VOT-1824	\$ 362,250	Replace	2070	8.00	Ductile Iron	1930's	2	Galvanize d Steel	Safety and Reliability/Structural	90	TBD	Yes
6048	Coastal Operating Area	OCEAN	Belmar Avenue from W Lincoln Avenue to Elizabeth Street	\$ 355,250	Replace	2030	6.00	Ductile Iron	1930's	2	Galvanize d Steel	Safety and Reliability/Structural	90	TBD	Yes
6068	Coastal Operating Area	OCEAN	Ampere Avenue from W Lincoln Avenue to Freehold Street	\$ 253,750	Replace	1450	6.00	Ductile Iron	1940's	2	Galvanize d Steel	Safety and Reliability	60	TBD	Yes
6074	Coastal Operating Area	OCEAN	Harrison Street from Freehold Street to Elizabeth Street	\$ 149,800	Replace	856	6.00	Ductile Iron	1940's	2	Galvanize d Steel	Safety and Reliability	60	TBD	Yes
6078	Coastal Operating Area	OCEAN	Garwood Avenue from Belmar Avenue to Delaware Avenue	\$ 88,375	Replace	500	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	60	TBD	Yes
6092	Coastal Operating Area	OCEAN	Elizabeth Street from Chatham Avenue to Delaware Avenue	\$ 41,125	Replace	235	6.00	Ductile Iron	1920's	2	Galvanize d Steel	Safety and Reliability	30	TBD	Yes
6096	Coastal Operating Area	OCEAN	Orange Street, W Lincoln Avenue & Arlington Street from Orange Avenue to Dover Avenue	\$ 183,750	Replace	1050	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	60	TBD	Yes
6128	Coastal Operating Area	OCEAN	Berger Avenue from Norwood Road to VOT-1451 & from VOT-1482 to Michael Street	\$ 153,125	Replace	875	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	60	TBD	Yes
6163	Coastal Operating Area	OCEAN	Maple Avenue from Sherman Avenue to Parker Avenue	\$ 112,000	Replace	640	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability	60	TBD	Yes
6172	Coastal Operating Area	OCEAN	Wallace Ave from end of exist 6" to W Park Ave	\$ 122,500	Replace	700	6.00	Ductile Iron	Unknown	6.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6323	Coastal Operating Area	OCEAN	Monmouth Road from Roseld Avenue to Roosevelt Avenue	\$ 1,045,000	Replace	4180	16.00	Ductile Iron	Unknown	16.00	Unknown	System Flows and Pressure	120	TBD	Yes
203	Coastal Operating Area	OCEAN CITY	Simpson Avenue - Between 1st Street & 2nd Street. 1st Street - Between Simpson Ave. - Bay Ave. 2nd Street - Between Simpson Ave. - Bay Ave.	\$ 250,000	Replace	1134	8.00	PVC	1920's	4	Cast Iron	System Flows and Pressure	60	2025Q4	Yes
219	Coastal Operating Area	OCEAN CITY	Stenton Place - Between Corinthian Avenue & Beach	\$ 45,000	Replace	236	8.00	PVC	1920's	2	Galvanize d Steel	System Flows and Pressure	30	2025Q4	Yes
234	Coastal Operating Area	OCEAN CITY	Brighton Place - Between Corinthian Avenue & Boardwalk	\$ 92,250	Replace	250	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
5304	Coastal Operating Area	OCEAN CITY	Alley between West Avenue & Asbury Avenue - 59th to 58th	\$ 72,000	Replace	719	8.00	PVC	1950's	2	Galvanize d Steel	Safety and Reliability/Structural	60	TBD	Yes
5374	Coastal Operating Area	OCEAN CITY	17th Street Loop	\$ 446,000	Replace	2095	8.00	PVC	1950's	6	Asbestos Cement	Relocation/Opportunit y	90	TBD	Yes
5378	Coastal Operating Area	OCEAN CITY	Crescent Road West Inlet to Gardens Parkway	\$ 272,250	Replace	1256	12.00	PVC	1930's	12	Cast Iron	Relocation/Opportunit y	60	TBD	Yes
5379	Coastal Operating Area	OCEAN CITY	West Inlet Road Surf Road to Crescent Road	\$ 16,425	Replace	92	12.00	PVC	1930's	12	Cast Iron	Relocation/Opportunit y	30	TBD	Yes
5380	Coastal Operating Area	OCEAN CITY	Surf Road from Atlantic to Wesley	\$ 300,150	Replace	1323	12.00	PVC	1930's	6	Cast Iron	Relocation/Opportunit y	60	TBD	Yes

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5381	Coastal Operating Area	OCEAN CITY	Landing Road from Crescent to Atlantic	\$ 62,200	Replace	309	8.00	PVC	1930's	6	Cast Iron	Relocation/Opportunity	30	TBD	Yes
5382	Coastal Operating Area	OCEAN CITY	Wesley Street 4th to First Street	\$ 451,400	Replace	1640	8.00	PVC	1910's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5384	Coastal Operating Area	OCEAN CITY	test Record	\$ 178,600	Replace	0	8.00	PVC	Unknown	Unknown	Unknown	Relocation/Opportunity	30	TBD	Yes
5386	Coastal Operating Area	OCEAN CITY	Seaview Road at Waverly to end	\$ 91,000	Replace	496	8.00	PVC	1950's	4	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
5387	Coastal Operating Area	OCEAN CITY	Central from 14th to 15th	\$ 106,600	Replace	560	8.00	PVC	1910's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5388	Coastal Operating Area	OCEAN CITY	14th Street Asbury to Ocean	\$ 172,800	Replace	1024	8.00	PVC	1910's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
5389	Coastal Operating Area	OCEAN CITY	15th Street (Bay to Pleasure)	\$ 178,400	Replace	857	8.00	PVC	1940's	6	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
5395	Coastal Operating Area	OCEAN CITY	26th Street between Haven Avenue & West Avenue	\$ 67,500	Replace	271	8.00	PVC	1910's	6	Cast Iron	Relocation/Opportunity	30	TBD	Yes
5398	Coastal Operating Area	OCEAN CITY	25th Street from Haven Ave to Asbury Ave	\$ 119,600	Replace	618	8.00	PVC	1910's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
5441	Coastal Operating Area	OCEAN CITY	Asbury Avenue from 42nd Street to 39th Street	\$ 381,375	Replace	1663	12.00	PVC	1930's	12	Asbestos Cement	Relocation/Opportunity	60	TBD	Yes
5442	Coastal Operating Area	OCEAN CITY	42nd Street from West Avenue to Central Avenue	\$ 107,400	Replace	573	8.00	PVC	1950's	8	Asbestos Cement	Relocation/Opportunity	60	TBD	Yes
5443	Coastal Operating Area	OCEAN CITY	41st Street from West Avenue to Asbury Avenue	\$ 51,600	Replace	253	8.00	PVC	1950's	8	Asbestos Cement	Relocation/Opportunity	30	TBD	Yes
5445	Coastal Operating Area	OCEAN CITY	40th Street from West Avenue to Asbury Avenue	\$ 52,000	Replace	253	8.00	PVC	1950's	6	Asbestos Cement	Relocation/Opportunity	30	TBD	Yes
5447	Coastal Operating Area	OCEAN CITY	39th Street from West Avenue to Central Avenue	\$ 108,200	Replace	554	8.00	PVC	Unknown	8	Asbestos Cement	Relocation/Opportunity	60	TBD	Yes
5448	Coastal Operating Area	OCEAN CITY	Pelham Place from Atlantic Avenue to Wayne Avenue	\$ 178,600	Replace	879	8.00	PVC	1910's	4	Cast Iron	Relocation/Opportunity	60	TBD	Yes
5449	Coastal Operating Area	OCEAN CITY	11th Street from Bay Avenue to Simpson Avenue	\$ 140,475	Replace	246	12.00	PVC	1910's	10	Cast Iron	Relocation/Opportunity	30	TBD	Yes
5451	Coastal Operating Area	OCEAN CITY	Haven Avenue from 52nd Street to 48th Street	\$ 513,750	Replace	2053	8.00	PVC	1950's	8	Asbestos Cement	Relocation/Opportunity	90	TBD	Yes
6093	Coastal Operating Area	OCEAN CITY	Boardwalk between 9th Street and 10th Street	\$ 250,000	Replace	341	8.00	PVC	1910's	2	Galvanized Steel	Safety and Reliability/Structural	30	TBD	Yes
6095	Coastal Operating Area	OCEAN CITY	Haven Avenue between 7th Street and 8th Street and Aldrich Road from 8th St to 9th St	\$ 620,700	Replace	1342	16.00	PVC	Unknown	12.00	Unknown	System Flows and Pressure	60	TBD	Yes
6245	Coastal Operating Area	OCEAN CITY	Anchorage Dr replacement from 55th to 52nd	\$ 63,800	Replace	1582	8.00	PVC	1970's	8	Asbestos Cement	Safety and Reliability	60	TBD	Yes
6246	Coastal Operating Area	OCEAN CITY	Wesley Ave replacement from 10th to 4th	\$ 678,400	Replace	3504	8.00	PVC	1910's	6	Cast Iron	Safety and Reliability	90	TBD	Yes
6248	Coastal Operating Area	OCEAN CITY	Central Ave replacement from 20th to 15th	\$ 572,000	Replace	2786	8.00	PVC	1910's	6	Cast Iron	Safety and Reliability	90	TBD	Yes
6250	Coastal Operating Area	OCEAN CITY	Central Ave replacement from 24th to 20th	\$ 558,250	Replace	2233	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6251	Coastal Operating Area	OCEAN CITY	West Ave replacement from 29th to 26th	\$ 416,250	Replace	1666	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6252	Coastal Operating Area	OCEAN CITY	Bay Ave replacement from 31st to 26th	\$ 1,239,400	Replace	2863	12.00	PVC	1940's	12	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6254	Coastal Operating Area	OCEAN CITY	Wesley Ave replacement from 4th to 1st	\$ 342,000	Replace	1640	8.00	PVC	1910's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6255	Coastal Operating Area	OCEAN CITY	Ocean Ave replacement from 4th to North	\$ 455,000	Replace	2223	8.00	PVC	1910's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6256	Coastal Operating Area	OCEAN CITY	Asbury Ave replacement from 51st to 48th	\$ 567,000	Replace	3156	12.00	PVC	1950's	12	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6257	Coastal Operating Area	OCEAN CITY	Anchorage Dr replacement from 52nd to 55	\$ 247,400	Replace	1582	8.00	PVC	1970's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6258	Coastal Operating Area	OCEAN CITY	Central Ave replacement from 31st to 38th	\$ 810,000	Replace	3940	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6259	Coastal Operating Area	OCEAN CITY	Central Ave replacement from 38th to 45th	\$ 790,000	Replace	3927	8.00	PVC	1950's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes

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6260	Coastal Operating Area	OCEAN CITY	Central Ave replacement from 45th to 55th	\$ 1,133,400	Replace	5633	8.00	PVC	1940's	6	Cast Iron	Safety and Reliability/Structural	120	TBD	Yes
6261	Coastal Operating Area	OCEAN CITY	Dory Dr replacement from 55th to 52nd	\$ 287,800	Replace	1391	8.00	PVC	1950's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6262	Coastal Operating Area	OCEAN CITY	Haven Ave replacement from 56th to 52nd	\$ 441,200	Replace	2231	8.00	PVC	1970's	8	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6263	Coastal Operating Area	OCEAN CITY	Simpson Ave replacement from 56th to 52nd	\$ 444,200	Replace	2195	8.00	PVC	1970's	8	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6264	Coastal Operating Area	OCEAN CITY	Bay Ave replacement from 56th to 52nd	\$ 459,800	Replace	2293	12.00	PVC	1950's	12	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6266	Coastal Operating Area	OCEAN CITY	West Ave replacement from 52nd to 55th	\$ 425,000	Replace	1684	8.00	PVC	1970's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6269	Coastal Operating Area	OCEAN CITY	Waterway Rd replacement from Bayland to End (Bay)	\$ 414,800	Replace	1841	8.00	PVC	1940's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6273	Coastal Operating Area	OCEAN CITY	52nd St replacement from Dory to Asbury	\$ 820,750	Replace	3283	12.00	PVC	1950's	12	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6275	Coastal Operating Area	OCEAN CITY	1st St replacement from Atlantic to Corinthian	\$ 295,200	Replace	1129	8.00	PVC	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6277	Coastal Operating Area	OCEAN CITY	Ocean Rd replacement from Seabright to North St.	\$ 737,500	Replace	2939	8.00	PVC	1930's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6278	Coastal Operating Area	OCEAN CITY	4th St replacement from Wesley to Atlantic	\$ 397,500	Replace	1590	8.00	PVC	1920's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6368	Coastal Operating Area	OCEAN CITY	Alley of Asbury and West replacement from 30th to 29th (Kill Main, Tie Customers to St)	\$ 136,500	Replace	486	8.00	PVC	1930's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6369	Coastal Operating Area	OCEAN CITY	23rd St replacement from Asbury Ave to Wesley Avenue	\$ 142,500	Replace	570	8.00	PVC	1920's	1	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
6370	Coastal Operating Area	OCEAN CITY	Alley of Asbury and West replacement from 35th to 36th (Kill Main, Tie Customers to St)	\$ 133,350	Replace	643	8.00	PVC	1930's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6373	Coastal Operating Area	OCEAN CITY	Alley of Asbury and West Replacement from 24th to 23rd (Kill Main, Tie Customers To St)	\$ 107,400	Replace	547	8.00	PVC	1920's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6374	Coastal Operating Area	OCEAN CITY	Alley of Haven and West replacement from 4th to 3rd	\$ 124,950	Replace	452	8.00	PVC	1940's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6378	Coastal Operating Area	OCEAN CITY	Alley of Haven and West replacement from 7th to 8th (Kill Main, Tie Customers to St)	\$ 112,350	Replace	409	8.00	PVC	1920's	2	Galvanized Steel	Safety and Reliability/Structural	30	TBD	Yes
6383	Coastal Operating Area	OCEAN CITY	22nd St replacement from Asbury to Wesley	\$ 98,700	Replace	445	8.00	PVC	1920's	2	Galvanized Steel	Safety and Reliability/Structural	30	TBD	Yes
6386	Coastal Operating Area	OCEAN CITY	31st St replacement from West to Central	\$ 157,500	Replace	582	8.00	PVC	1950's	2	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
6387	Coastal Operating Area	OCEAN CITY	Alley of Asbury and West replacement from 59th to 58th (Kill Main, Tie Customers to St)	\$ 154,350	Replace	719	8.00	PVC	1930's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6389	Coastal Operating Area	OCEAN CITY	14th St replacement from Asbury to Boardwalk	\$ 245,700	Replace	1136	8.00	PVC	1920's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6392	Coastal Operating Area	OCEAN CITY	5th St replacement from West to Ocean	\$ 336,000	Replace	1255	8.00	PVC	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6398	Coastal Operating Area	OCEAN CITY	West Ave replacement from 7th to 3rd	\$ 545,000	Replace	2179	8.00	PVC	1910's	4	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6399	Coastal Operating Area	OCEAN CITY	17th St replacement from beach to West Ave.	\$ 311,250	Replace	1245	8.00	PVC	1960's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6400	Coastal Operating Area	OCEAN CITY	15th St replacement from Simpson to Central	\$ 248,220	Replace	990	8.00	PVC	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6414	Coastal Operating Area	OCEAN CITY	18th St replacement from beach to Wesley	\$ 63,000	Replace	190	8.00	PVC	1960's	6	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
6416	Coastal Operating Area	OCEAN CITY	3rd St replacement from Atlantic to Corinthian	\$ 213,000	Replace	1069	8.00	PVC	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6418	Coastal Operating Area	OCEAN CITY	Moorlyn Ter replacement from Ocean to End	\$ 240,450	Replace	1141	8.00	PVC	1910's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6419	Coastal Operating Area	OCEAN CITY	23rd St replacement from Bay to Haven	\$ 122,800	Replace	636	8.00	PVC	1940's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6420	Coastal Operating Area	OCEAN CITY	Asbury Ave replacement from 17th to 21st	\$ 562,500	Replace	2247	8.00	PVC	1910's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6431	Coastal Operating Area	OCEAN CITY	Sunset & Bayonne Pl replacement from end to Bay	\$ 390,180	Replace	1733	8.00	PVC	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes

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6433	Coastal Operating Area	OCEAN CITY	19th St replacement from West to Haven	\$ 79,800	Replace	269	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
6434	Coastal Operating Area	OCEAN CITY	20th St replacement from West to Haven	\$ 54,200	Replace	268	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
6435	Coastal Operating Area	OCEAN CITY	29th St replacement from Wesley to Haven	\$ 387,500	Replace	1556	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6436	Coastal Operating Area	OCEAN CITY	45th St replacement from Asbury to Central	\$ 56,200	Replace	287	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
6439	Coastal Operating Area	OCEAN CITY	50th St replacement from West to Central	\$ 133,250	Replace	533	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6440	Coastal Operating Area	OCEAN CITY	20th St replacement from Wesley to Central	\$ 61,600	Replace	307	8.00	PVC	1910's	6	Unknown	Safety and Reliability/Structural	30	TBD	Yes
6442	Coastal Operating Area	OCEAN CITY	49th St replacement from Haven to Beach	\$ 250,000	Replace	1000	8.00	PVC	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6443	Coastal Operating Area	OCEAN CITY	51st St replacement from Asbury to Haven	\$ 150,000	Replace	600	8.00	PVC	1950's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6444	Coastal Operating Area	OCEAN CITY	57th St replacement from West to Central	\$ 106,000	Replace	542	8.00	PVC	1950's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6447	Coastal Operating Area	OCEAN CITY	16th St replacement from Bay to Simpson	\$ 63,200	Replace	232	12.00	PVC	1910's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6448	Coastal Operating Area	OCEAN CITY	18th St replacement from Asbury to Simpson	\$ 227,500	Replace	911	12.00	PVC	1950's	12	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6449	Coastal Operating Area	OCEAN CITY	21st St replacement from Haven to Bay	\$ 131,000	Replace	623	12.00	PVC	1950's	12	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6522	Coastal Operating Area	OCEANPORT	Shore Rd	\$ 260,000	Replace	1500	6.00	PVC	1970's	6	Ductile Iron	Safety and Reliability	60	TBD	Yes
385	Southwest Operating Area	OLDMANS	Oldmans - MillStreet, Creek to Railroad	\$ 160,800	Replace	1091	12.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
428	Southwest Operating Area	PALMYRA	Palmyra - Horace Avenue & West 2nd Street - West 2nd from Delaware to Horace and Horace from Temple Blvd to West 5th Street	\$ 380,000	Replace	2000	8.00	Ductile Iron	1920's	4	Asbestos Cement	System Flows and Pressure	90	TBD	Yes
498	Southwest Operating Area	PALMYRA	Palmyra - Leconey Avenue & Leconey Circle - 5th Street to Firth Lane	\$ 440,000	Replace	2300	8.00	Ductile Iron	Pre-1900	4	Galvanized Steel	Safety and Reliability/Structural	90	TBD	Yes
499	Southwest Operating Area	PALMYRA	Palmyra - 4th Street - Leconey Avenue to Horace Avenue	\$ 120,000	Replace	620	8.00	Ductile Iron	Pre-1900	4	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
500	Southwest Operating Area	PALMYRA	Palmyra - Berkley Avenue - Temple Blvd to West 4th Street	\$ 162,000	Replace	850	8.00	Ductile Iron	Pre-1900	4	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
509	Southwest Operating Area	PALMYRA	Palmyra - New Jersey Avenue - South Broad Street to West Charles Street	\$ 220,000	Replace	1150	8.00	Ductile Iron	Pre-1900	4	Galvanized Steel	Safety and Reliability/Structural	60	TBD	Yes
5310	Southwest Operating Area	PALMYRA	Palmyra - 6th Street - Arch Street to Delaware Ave	\$ 504,000	Replace	2650	8.00	Ductile Iron	1900's	4	Cement	System Flows and Pressure	90	TBD	Yes
5311	Southwest Operating Area	PALMYRA	Palmyra - Parry Ave- Cinnamonson Ave to Charles Street	\$ 342,000	Replace	1800	8.00	Ductile Iron	1900's	4	Cement	System Flows and Pressure	60	TBD	Yes
5823	Southwest Operating Area	PALMYRA	Palmyra - Legion Ave - Broad Street to W 3rd Street	\$ 190,000	Replace	1000	8.00	Ductile Iron	1920's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
5824	Southwest Operating Area	PALMYRA	Palmyra - Temple Blvd - Jefferson Ave to Berkley Ave	\$ 440,000	Replace	1950	12.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
5921	Southwest Operating Area	PALMYRA	Palmyra - Lincoln Avenue - East Broad Street to 7th Street	\$ 323,000	Replace	1700	8.00	Ductile Iron	Pre-1900	8	Cement	System Flows and Pressure	60	TBD	Yes
6726	Southwest Operating Area	PALMYRA	Palmyra - Vine Street - West 5th Street to West Broad Street	\$ 104,500	Replace	550	8.00	Ductile Iron	Pre-1900	4	Cement	Safety and Reliability/Structural	60	TBD	Yes
6727	Southwest Operating Area	PALMYRA	Palmyra - West 6th Street and Weart Blvd - Arch Street to Delaware Avenue to West 5th Street	\$ 351,500	Replace	1850	8.00	Ductile Iron	Pre-1900	4	Cement	Safety and Reliability/Structural	60	TBD	Yes
6728	Southwest Operating Area	PALMYRA	Palmyra - Race Street - West 4th Street to West Broad Street	\$ 147,250	Replace	775	8.00	Ductile Iron	Pre-1900	4	Concrete	Safety and Reliability/Structural	60	TBD	Yes
7104	Southwest Operating Area	PALMYRA	Palmyra - Delaware Avenue - West Broad Street to Charles Street (include 2nd Street and 5th Street)	\$ 32,300	Replace	1700	8.00	Ductile iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6849	North Operating Area	PEAPACK GLADSTONE BOROUGH	PEAPACK GLADSTONE - Brady Dr from Cul De Sac to gradient line	\$ 440,000	Replace	2200	8.00	Ductile Iron	Unknown	8	Ductile Iron	Safety and Reliability/Structural	90	TBD	Yes
6851	North Operating Area	PEAPACK GLADSTONE BOROUGH	PEAPACK GLADSTONE - Pottersville Rd from Main St to RT 206	\$ 660,000	Replace	3300	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2022Q3	Yes
6852	North Operating Area	PEAPACK GLADSTONE BOROUGH	PEAPACK GLADSTONE - Ridge Rd from Brook Hollow Dr	\$ 300,000	Replace	1500	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes

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7190	North Operating Area	PEAPACK GLADSTONE BOROUGH	Holland Road private main	\$ 220,000	Replace	1100	6.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
7191	North Operating Area	PEAPACK GLADSTONE BOROUGH	Holland Road private main	\$ 220,000	Replace	1100	6.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2024Q3	Yes
388	Southwest Operating Area	PENNS GROVE	Penns Grove - Mary Street and John Street - South Broad Street to Main Street	\$ 228,000	Replace	800	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
533	Southwest Operating Area	PENNS GROVE	Penns Grove - Delaware Drive - Church Street to Cove Road	\$ 133,000	Replace	700	8.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
534	Southwest Operating Area	PENNS GROVE	Penns Grove - Railroad Avenue and Mill Street - Naylor Avenue to Dead End to HPG-56	\$ 492,600	Replace	1540	8.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
535	Southwest Operating Area	PENNS GROVE	Penns Grove - Harmony Avenue - Penn St to North Broad Street	\$ 599,000	Replace	2100	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5353	Southwest Operating Area	PENNS GROVE	Penns Grove - West Harmony Avenue - Delaware Avenue to North Broad Street	\$ 475,000	Replace	2500	12.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
5355	Southwest Operating Area	PENNS GROVE	Penns Grove - State Street - West Maple Avenue to West Main Street	\$ 836,500	Replace	3350	12.00	Ductile Iron	1910's	8	Cast Iron	System Flows and Pressure	90	TBD	Yes
5744	Southwest Operating Area	PENNS GROVE	Penns Grove - Deming Avenue - Walnut Street to Willis Avenue	\$ 95,000	Replace	500	8.00	Ductile Iron	1920's	2	Cast Iron	Safety and Reliability	60	TBD	Yes
6015	Southwest Operating Area	PENNS GROVE	Penns Grove - Simpkins Place - Railroad Avenue to Dead End	\$ 36,100	Replace	190	8.00	Ductile Iron	1900's	1.5	PVC	System Flows and Pressure	30	TBD	Yes
6016	Southwest Operating Area	PENNS GROVE	Penns Grove - Alry Avenue - Railroad Avenue to Dead End	\$ 38,000	Replace	200	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
6017	Southwest Operating Area	PENNS GROVE	Penns Grove - North Broad Street - East Line Street to East Main Street	\$ 368,600	Replace	1940	8.00	Ductile Iron	1900's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6018	Southwest Operating Area	PENNS GROVE	Penns Grove - South Broad Street - East Main Street to Dead End	\$ 750,500	Replace	3950	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	90	TBD	Yes
6019	Southwest Operating Area	PENNS GROVE	Penns Grove - Summerill Avenue - Garnet Street to Dead End	\$ 72,200	Replace	380	8.00	Ductile Iron	1910's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
6020	Southwest Operating Area	PENNS GROVE	Penns Grove - Church Street - South Broad Street to Delaware Drive	\$ 266,000	Replace	1400	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6021	Southwest Operating Area	PENNS GROVE	Penns Grove - Cumberland Avenue - Diver Avenue to Walnut Street	\$ 163,400	Replace	860	8.00	Ductile Iron	1930's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
6025	Southwest Operating Area	PENNS GROVE	Penns Grove - Wright Street and Poplar Street - Lanning Avenue to Dead End	\$ 197,600	Replace	1040	8.00	Ductile Iron	Unknown	2	Cast Iron	System Flows and Pressure	60	TBD	Yes
6027	Southwest Operating Area	PENNS GROVE	Penns Grove - Oak Street - West Main Street to Dead End	\$ 47,500	Replace	250	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
6029	Southwest Operating Area	PENNS GROVE	Penns Grove - East Main Street - Virginia Avenue to South Broad Street	\$ 340,100	Replace	1790	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
6030	Southwest Operating Area	PENNS GROVE	Penns Grove - West Main Street - North Broad Street to Delaware Avenue	\$ 682,000	Replace	2410	12.00	Ductile Iron	1900's	6	Cast Iron	System Flows and Pressure	90	TBD	Yes
6031	Southwest Operating Area	PENNS GROVE	Penns Grove - Howard Street - North Virginia Avenue to Featherer Avenue	\$ 76,000	Replace	400	8.00	Ductile Iron	Unknown	1.25	PVC	Safety and Reliability/Structural	30	TBD	Yes
6033	Southwest Operating Area	PENNS GROVE	Penns Grove - Railroad Avenue - Naylor Avenue to Alry Avenue	\$ 171,000	Replace	900	8.00	Ductile Iron	1900's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
6036	Southwest Operating Area	PENNS GROVE	Penns Grove - Maplewood Avenue - Hollywood Avenue to Oakwood Avenue	\$ 171,000	Replace	900	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
364	Southwest Operating Area	PENNSAUKEN	Pennsauken - Route 130 - Marlton Pike to Homestead Avenue	\$ 494,000	Replace	2600	8.00	Ductile Iron	1930's	8	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
5904	Southwest Operating Area	PENNSAUKEN	Pennsauken - Alrport Industrial Park - Kaighns Avenue to North Park Drive	\$ 1,292,000	Replace	6800	12.00	Ductile Iron	1960's	8	Cast Iron	System Flows and Pressure	120	TBD	Yes
5949	Southwest Operating Area	PENNSAUKEN	Pennsauken - Clark Avenue - Marlton Pike to Harris Avenue	\$ 152,000	Replace	800	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5950	Southwest Operating Area	PENNSAUKEN	Pennsauken - Roosevelt Avenue - King Ave to Garfield Avenue	\$ 155,000	Replace	850	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5951	Southwest Operating Area	PENNSAUKEN	Pennsauken - Garden Avenue - Roosevelt Ave to Henwood Avenue	\$ 100,000	Replace	550	8.00	Ductile Iron	1940's	2.25	Cast Iron	System Flows and Pressure	60	TBD	Yes
5952	Southwest Operating Area	PENNSAUKEN	Pennsauken - Beacon Ave - Highland Ave to Rt 130 and Roosevelt Ave to Henwood Ave	\$ 285,000	Replace	1500	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5953	Southwest Operating Area	PENNSAUKEN	Pennsauken - King Avenue - Roosevelt Ave to Dead End	\$ 50,000	Replace	260	8.00	Ductile Iron	1930's	6	Asbestos Cement	System Flows and Pressure	30	TBD	Yes
6487	Southwest Operating Area	PENNSAUKEN	Pennsauken - Eliminate main under Route 130 Jersey barrier	\$ 2,750,000	Replace	9350	12.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability	120	TBD	Yes

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6616	Southwest Operating Area	PENNSAUKEN	Pennsauken - Willgoos Ave - Harris to Earl	\$	165,000	Replace	910	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
286	Central Operating Area	PISCATAWAY TWP	Piscataway - Carlton Ave	\$	900,000	Replace	4500	8.00	Ductile Iron	1960's	8	Cast Iron	Safety and Reliability/Structural	120	2024Q4	Yes
288	Central Operating Area	PISCATAWAY TWP	Piscataway - River Road - 16" main From Haywood to Winwood and from Maplehurst to Barber	\$	900,000	Replace	4000	16.00	Ductile Iron	Unknown	16	Cast Iron	Relocation/Opportunity	120	2024Q4	Yes
78	Central Operating Area	PLAINSBORO TWP	Plainsboro - Jeffers/Pasture Signal 22/flushing/loss water	\$	185,400	Replace	1030	8.00	Ductile Iron	1950's	4	Cast Iron	Water Quality	60	2023Q4	Yes
5648	Coastal Operating Area	PLEASANTVILLE	Washington Avenue between New Road and Main Street	\$	369,000	Replace	2082	12.00	Ductile Iron	Pre-1900	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
5649	Coastal Operating Area	PLEASANTVILLE	Washington Avenue between Main Street and Franklin Boulevard	\$	170,000	Replace	831	12.00	Ductile Iron	Pre-1900	4	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
5986	Coastal Operating Area	PLEASANTVILLE	N. 3rd Street between W. Adams Ave and Hendricks St	\$	68,000	Replace	414	8.00	Ductile Iron	Unknown	8.00	Unknown	System Flows and Pressure	30	2025Q4	Yes
5987	Coastal Operating Area	PLEASANTVILLE	N. 4th Street between W. Adams Ave and Pleasant Ave	\$	121,600	Replace	919	8.00	Ductile Iron	Unknown	8.00	Unknown	System Flows and Pressure	60	2025Q4	Yes
5989	Coastal Operating Area	PLEASANTVILLE	N. 4th Street between Washington Ave and Martin Luther King Jr Ave	\$	50,000	Replace	1032	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	60	2025Q4	Yes
5990	Coastal Operating Area	PLEASANTVILLE	4th Street between Washington Avenue and West Jersey Avenue	\$	73,600	Replace	459	8.00	Ductile Iron	Unknown	8.00	Unknown	System Flows and Pressure	30	TBD	Yes
5991	Coastal Operating Area	PLEASANTVILLE	3rd Street between Martin Luther King Jr Ave and West Jersey Ave	\$	223,250	Replace	1126	8.00	Ductile Iron	Unknown	8.00	Unknown	System Flows and Pressure	60	TBD	Yes
6401	Coastal Operating Area	PLEASANTVILLE	E. Princeton Avenue between Main St and Iowa Ave	\$	168,300	Replace	936	8.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6402	Coastal Operating Area	PLEASANTVILLE	E. Leeds Avenue between Main Street and Franklin Blvd	\$	72,000	Replace	377	12.00	Ductile Iron	1940's	2	Galvanized Steel	Safety and Reliability/Structural	30	2025Q4	Yes
6404	Coastal Operating Area	PLEASANTVILLE	McConnell Drive between E. Leeds Ave and Cedarcrest Ave	\$	193,500	Replace	1055	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6405	Coastal Operating Area	PLEASANTVILLE	Magnolia Place between Main Street and McConnell Drive	\$	149,600	Replace	920	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6406	Coastal Operating Area	PLEASANTVILLE	Laurel Drive between Magnolia Place and McConnell Drive	\$	117,000	Replace	625	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6407	Coastal Operating Area	PLEASANTVILLE	W. Leeds Ave between New Road and Main Street	\$	623,500	Replace	3012	12.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
6408	Coastal Operating Area	PLEASANTVILLE	Elkton Avenue from W. Leeds Avenue	\$	40,000	Replace	295	4.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6409	Coastal Operating Area	PLEASANTVILLE	Kline Avenue between W. Leeds Avenue and end of road	\$	162,000	Replace	842	8.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6410	Coastal Operating Area	PLEASANTVILLE	Sunset Court between New Road and Kline Avenue	\$	47,250	Replace	312	8.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability/Structural	30	TBD	Yes
6411	Coastal Operating Area	PLEASANTVILLE	Neumark Avenue between W. Leeds Ave and New Road	\$	164,700	Replace	869	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6413	Coastal Operating Area	PLEASANTVILLE	Linden Avenue between W. Dellah Road and W. Thompson Avenue	\$	162,800	Replace	630	8.00	Ductile Iron	1940's	2	Galvanized Steel	Safety and Reliability/Structural	60	2025Q4	Yes
6421	Coastal Operating Area	PLEASANTVILLE	Loraine Avenue between Main Street and east end of road	\$	252,000	Replace	1388	8.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6422	Coastal Operating Area	PLEASANTVILLE	Franklin Avenue between Loraine Avenue and Expressway	\$	85,500	Replace	934	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6423	Coastal Operating Area	PLEASANTVILLE	Mulberry Ave between Linden Avenue and Franklin Blvd	\$	126,000	Replace	1202	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6450	Coastal Operating Area	PLEASANTVILLE	Chatham Avenue between Main Street and Clearview Avenue	\$	270,000	Replace	1446	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6452	Coastal Operating Area	PLEASANTVILLE	Walnut Avenue between Main Street and Franklin Blvd	\$	126,000	Replace	648	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6453	Coastal Operating Area	PLEASANTVILLE	Franklin Blvd between Merion Avenue and Charles Avenue	\$	200,000	Replace	1094	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6454	Coastal Operating Area	PLEASANTVILLE	E. Merion Avenue between Main Street and east end of road	\$	255,600	Replace	1268	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6455	Coastal Operating Area	PLEASANTVILLE	Collins Avenue between Main Street and Franklin Blvd	\$	122,400	Replace	686	8.00	Ductile Iron	1920's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6456	Coastal Operating Area	PLEASANTVILLE	Collins Avenue between Franklin Ave and east end of road	\$	146,700	Replace	753	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes

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6457	Coastal Operating Area	PLEASANTVILLE	E. Adams Ave between Main Street and east end of road	\$	273,600	Replace	1462	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6459	Coastal Operating Area	PLEASANTVILLE	Franklin Blvd between Old Turnpike and Washington Ave	\$	111,600	Replace	614	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6604	Coastal Operating Area	PLEASANTVILLE	E. Dellilah Road between Main Street and Franklin Blvd	\$	112,000	Replace	713	8.00	Ductile Iron	1910's	2	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6605	Coastal Operating Area	PLEASANTVILLE	Linden Avenue between Dellilah Rd and Windsor Ave	\$	63,000	Replace	262	8.00	Ductile Iron	1910's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6606	Coastal Operating Area	PLEASANTVILLE	Windsor Avenue between Linden Avenue and Main Street	\$	104,000	Replace	472	8.00	Ductile Iron	Unknown	8.00	Unknown	Safety and Reliability/Structural	30	TBD	Yes
79	Central Operating Area	PRINCETON BOROUGH	Princeton Boro - Elm Road/Hodge to 206Main Breaks	\$	432,000	Replace	2400	8.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	90	2022Q4	Yes
83	Central Operating Area	PRINCETON TWP	Princeton Township - RidgeView Road/Great Road to Cherry Hill Road	\$	1,026,000	Replace	5700	12.00	Ductile Iron	Unknown	12	Ductile Iron	Safety and Reliability/Structural	120	2022Q2	Yes
5782	Central Operating Area	RARITAN BOROUGH	First Avenue Main Replacement	\$	450,000	Replace	1800	12.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	2023Q4	Yes
6730	Central Operating Area	RARITAN BOROUGH	First Avenue Main Replacement	\$	400,000	Replace	1400	8.00	Ductile Iron	1930's	8	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
7030	Central Operating Area	ROSELLE PARK BORO	W. Colfax Ave. (Laurel to Chestnut)	\$	543,800	Replace	2719	8.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	90	2024Q4	Yes
5971	Southwest Operating Area	RUNNEMEDE	Runnemede - West 1st Avenue - North Black Horse Pike to VRU-13866	\$	70,500	Replace	370	8.00	Ductile Iron	1950's	4	Cast Iron	System Flows and Pressure	30	TBD	Yes
6613	Central Operating Area	SCOTCH PLAINS TWP	Park Ave. (Route 22 to Portland)	\$	841,275	Replace	3739	12.00	Ductile Iron	1900's	Unknown	Cast Iron	System Flows and Pressure	90	2024Q4	Yes
369	Southwest Operating Area	SOMERDALE	Somerdale - Somerdale Road - Under railroad crossing	\$	40,000	Replace	200	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability	30	TBD	Yes
5947	Southwest Operating Area	SOMERDALE	Somerdale - Arlmay Avenue - North Warwick Road to Dead End	\$	110,200	Replace	580	8.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
5948	Southwest Operating Area	SOMERDALE	Somerdale - Cedar Avenue - North White Horse Pike to Dead End	\$	338,200	Replace	1780	8.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
7216	Southwest Operating Area	SOMERDALE	Somerdale - Warwick Road (CR-669) @ Atlantic Avenue (CR-727) - Railroad Crossing	\$	200,000	Replace	700	8.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability/Structural	60	TBD	Yes
181	Coastal Operating Area	SOMERS POINT	Shore Road - Between Connecticut Avenue & Bethel Road (AC-B-4D) (Mort ended 2010)	\$	110,000	Replace	637	16.00	Ductile Iron	1940's	6	Ductile Iron	System Flows and Pressure	60	TBD	Yes
182	Coastal Operating Area	SOMERS POINT	Shore Road - Between Bethel Road & Maryland Avenue (AC-B-4D)	\$	302,500	Replace	1132	16.00	Ductile Iron	1920's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
183	Coastal Operating Area	SOMERS POINT	Maryland Avenue - Between Shore Road & Sunset Avenue (AC-B-4D)	\$	72,500	Replace	279	12.00	Ductile Iron	1970's	8	Cast Iron	System Flows and Pressure	30	TBD	Yes
184	Coastal Operating Area	SOMERS POINT	Maryland Avenue - Between Sunset Avenue & Shore Road	\$	207,500	Replace	279	12.00	Ductile Iron	1970's	8	Ductile Iron	System Flows and Pressure	30	TBD	Yes
204	Coastal Operating Area	SOMERS POINT	Shore Road - Between Maryland Avenue & Groveland Avenue	\$	82,500	Replace	336	16.00	Ductile Iron	1920's	6	Asbestos Cement	System Flows and Pressure	30	TBD	Yes
205	Coastal Operating Area	SOMERS POINT	Shore Road - Between Groveland Avenue & Ocean Heights Avenue	\$	805,000	Replace	3264	16.00	Ductile Iron	1920's	6	Cast Iron	System Flows and Pressure	90	TBD	Yes
5641	Coastal Operating Area	SOMERS POINT	Sunny Avenue between Groveland Avenue and Pierson Avenue	\$	145,600	Replace	1121	8.00	Ductile Iron	1940's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
6231	Coastal Operating Area	SOMERS POINT	10th from Laurel to New York, Dobbs Ave from 10th Street to Well and New York from 10th to Route 9 and tie into 9th Street	\$	487,500	Replace	1950	8.00	Ductile Iron	1950's	8	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6232	Coastal Operating Area	SOMERS POINT	1st Street replacement from Connecticut to Rhode Island	\$	110,000	Replace	440	8.00	Ductile Iron	1980's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6233	Coastal Operating Area	SOMERS POINT	1st Street replacement from Johnson to Dawes	\$	169,200	Replace	819	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6235	Coastal Operating Area	SOMERS POINT	2nd Street replacement from Rhode Island to Connecticut, Rhode Island from 1st to 4th St and Connecticut from 1st to 2nd	\$	212,500	Replace	1820	8.00	Ductile Iron	1940's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6237	Coastal Operating Area	SOMERS POINT	4th Street replacement from Dobbs to W. New Jersey Avenue	\$	62,600	Replace	321	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
6240	Coastal Operating Area	SOMERS POINT	5th replacement from New York to Rhode Island	\$	142,000	Replace	938	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6241	Coastal Operating Area	SOMERS POINT	6th Street replacement from New York to Massachusetts Ave	\$	260,000	Replace	897	8.00	HDPE	1960's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6316	Coastal Operating Area	SOMERS POINT	Ambler Road between W. Laurel Drive and W. Groveland Avenue	\$	775,000	Replace	3488	12.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes

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6317	Coastal Operating Area	SOMERS POINT	W. Groveland Avenue between Ambler Road to US Route 9	\$	400,000	Replace	1764	12.00	Ductile Iron	Unknown	12.00	Unknown	Safety and Reliability/Structural	60	TBD	Yes
6463	Coastal Operating Area	SOMERS POINT	Maryland Ave between Shore Road and Bethel Road	\$	250,000	Replace	967	16.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6464	Coastal Operating Area	SOMERS POINT	Marks Road between Rhode Island Ave (SP Tank) and Maryland Ave	\$	387,500	Replace	1681	16.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6519	Coastal Operating Area	SOMERS POINT	E. Laurel Dr & E. Village Dr between Braddock Dr and 10th St (Dobbs Well)	\$	748,800	Replace	2324	12.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6520	Coastal Operating Area	SOMERS POINT	US Rt 9 between Village Drive South and MacArthur Blvd	\$	432,000	Replace	1436	12.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6524	Coastal Operating Area	SOMERS POINT	US Rt 9 between Somers Point- Mays Landing Road and S. Village Drive	\$	498,000	Replace	1661	12.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6940	Coastal Operating Area	SOMERS POINT	Shore Road between New Jersey Ave and Connecticut Ave	\$	260,000	Replace	1924	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6855	North Operating Area	SOUTH ORANGE	SOUTH ORANGE - Summit Ave from Parker Ave to dead end	\$	300,000	Replace	1500	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
294	Central Operating Area	SOUTH PLAINFIELD BORO	South Plainfield - Park Avenue - Bridge Reconstruction	\$	1,100,000	Replace	300	36.00	Ductile Iron	Unknown	36	PCCP	Relocation/Opportunity	30	2024Q4	Yes
6338	North Operating Area	SPRINGFIELD	Walnut St from Morris to Church Mall	\$	116,000	Replace	580	8.00	Ductile Iron	1900's	0.75	Galvanized Steel	Safety and Reliability	60	2022Q3	Yes
6856	North Operating Area	SPRINGFIELD	SPRINGFIELD - Briar Hills Circle from Wentz Ave to Mountain Ave	\$	600,000	Replace	3000	6.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2025Q3	Yes
6858	North Operating Area	SPRINGFIELD	SPRINGFIELD - PITT Rd from Shunpike Rd to Mountain Ave	\$	560,000	Replace	2800	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	90	2025Q4	Yes
6859	North Operating Area	SPRINGFIELD	SPRINGFIELD - Riverside Dr from Cain St to Maple Ave	\$	240,000	Replace	1200	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6860	North Operating Area	SPRINGFIELD	SPRINGFIELD - Riverside Dr from Cain St to Battlehill Ave	\$	140,000	Replace	700	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6863	North Operating Area	SPRINGFIELD	SPRINGFIELD - Skylark Rd from Tree Top Dr to Green Hill Rd	\$	1,100,000	Replace	5500	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	120	2025Q4	Yes
6864	North Operating Area	SPRINGFIELD	SPRINGFIELD - Colonial Rd from Evergreen Rd to West End Ave	\$	280,000	Replace	1400	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2022Q3	Yes
6877	North Operating Area	SPRINGFIELD	SPRINGFIELD - Route 22 east and west	\$	2,000,000	Replace	10000	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	120	2024Q3	Yes
6934	North Operating Area	SPRINGFIELD	SPRINGFIELD - Denham Rd from Donna Rd to Morrison Rd	\$	220,000	Replace	965	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6935	North Operating Area	SPRINGFIELD	SPRINGFIELD - Golf Oval from Mountain Ave	\$	260,000	Replace	1324	8.00	Ductile Iron	1970's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6938	North Operating Area	SPRINGFIELD	SPRINGFIELD - Sharon Rd from Highland Ave to Summit Rd	\$	140,000	Replace	707	8.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability/Structural	60	2024Q3	Yes
6939	North Operating Area	SPRINGFIELD	SPRINGFIELD - Elmwood Ave / Cottler Ave from Milltown Rd	\$	300,000	Replace	1310	8.00	Ductile Iron	1960's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6944	North Operating Area	SPRINGFIELD	SPRINGFIELD - Colfax Rd from Denham to Short Hills Ave	\$	270,000	Replace	1339	8.00	Ductile Iron	1940's	6	Cast Iron	Safety and Reliability	60	2023Q3	Yes
6945	North Operating Area	SPRINGFIELD	SPRINGFIELD - Severna Ave from Denham to Short Hills Ave	\$	270,000	Replace	1366	8.00	Ductile Iron	1940's	6	Cast Iron	Relocation/Opportunity	60	TBD	Yes
6946	North Operating Area	SPRINGFIELD	SPRINGFIELD - Molter from Severna to Morris	\$	100,000	Replace	518	8.00	Ductile Iron	1940's	6	Cast Iron	Relocation/Opportunity	60	2022Q3	Yes
6947	North Operating Area	SPRINGFIELD	SPRINGFIELD - Marcy from Severna to Morris	\$	120,000	Replace	603	8.00	Ductile Iron	1920's	6	Cast Iron	Relocation/Opportunity	60	2022Q3	Yes
6948	North Operating Area	SPRINGFIELD	SPRINGFIELD - Green Hill Rd from Tree Top to Highland	\$	440,000	Replace	2200	8.00	Ductile Iron	1960's	6	Cast Iron	Relocation/Opportunity	90	2022Q3	Yes
6951	North Operating Area	SPRINGFIELD	SPRINGFIELD - Stern from Springfield to Commerce	\$	247,000	Replace	1065	8.00	Ductile Iron	1950's	6	Cast Iron	Relocation/Opportunity	60	2025Q3	Yes
5944	Southwest Operating Area	STRATFORD	Stratford - Cornell Avenue, North Atlantic Avenue to North White Horse Pike	\$	494,000	Replace	2600	8.00	Ductile Iron	1950's	4	Steel	System Flows and Pressure	90	TBD	Yes
42	North Operating Area	SUMMIT	Summit - Ashland Rd	\$	380,000	Replace	1900	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
45	North Operating Area	SUMMIT	Summit - Plymouth, Devon & Mountain (Intersection)	\$	25,000	Replace	70	6.00	Ductile Iron	1930's	6	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
145	North Operating Area	SUMMIT	Summit - Cottage (Carriage)	\$	43,750	Replace	250	6.00	Ductile Iron	1920's	2	Galvanized Steel	System Flows and Pressure	30	TBD	Yes

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6712	North Operating Area	SUMMIT	SUMMIT - Caldwell Ave from Clark St to Springfield Ave	\$ 160,000	Replace	800	8.00	Ductile Iron	1950's	2.25	Cast Iron	Safety and Reliability	60	TBD	Yes
6867	North Operating Area	SUMMIT	SUMMIT - Druid Hill Rd from Silver Lake Dr to Surrey Rd	\$ 420,000	Replace	2100	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6868	North Operating Area	SUMMIT	SUMMIT - Gates Ave from Morris Ave to Montrose Ave	\$ 180,000	Replace	900	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6869	North Operating Area	SUMMIT	SUMMIT - Knob Hill Dr from Division Ave to Portland Rd	\$ 340,000	Replace	1700	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6870	North Operating Area	SUMMIT	SUMMIT - Rotary Dr from Highland Dr to Ashland Rd (Gradient line)	\$ 300,000	Replace	1500	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6871	North Operating Area	SUMMIT	SUMMIT - Shunpike Rd from Harvard St to Yale St	\$ 200,000	Replace	1000	8.00	Ductile Iron	Unknown	2	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6872	North Operating Area	SUMMIT	SUMMIT - Woodland Ave from River Rd to Cance Brook Pkwy	\$ 170,000	Replace	850	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6873	North Operating Area	SUMMIT	SUMMIT - Risk Ave/Beech Spring Dr loop from Constantine Pl	\$ 340,000	Replace	1700	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6890	North Operating Area	SUMMIT	SUMMIT - Glenside Ave from Van Dyke to Baltusrol Well	\$ 560,000	Replace	2800	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2025Q3	Yes
6891	North Operating Area	SUMMIT	SUMMIT - Division Ave from Knob Hill to Valley View Ave	\$ 320,000	Replace	1600	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2022Q3	Yes
6892	North Operating Area	TEWKSBURY TWP	TEWKSBURY - Hollow Brook Rd from Homestead Rd to dead end of main	\$ 1,100,000	Replace	5435	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	120	TBD	Yes
6893	North Operating Area	TEWKSBURY TWP	TEWKSBURY - McCanus Mill Rd from Fairmount Rd to Keats Rd	\$ 160,000	Replace	800	8.00	Ductile Iron	Unknown	1	Other	Safety and Reliability/Structural	60	TBD	Yes
589	Coastal Operating Area	TINTON FALLS	Tinton Falls - Sylvan Dr, From Glenwood to Riveredge	\$ 67,500	Replace	450	8.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
124	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Haddonfield Ave from Rt 35 N to terminus (boardwalk).	\$ 108,000	Replace	720	8.00	Ductile Iron	1950's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
125	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Bryn Mawr Ave from Rt 35 S to terminus (boardwalk).	\$ 196,500	Replace	627	8.00	Ductile Iron	1950's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
602	Coastal Operating Area	TOMS RIVER	Toms River - Sand Dune Lane (From 1st Ave to Ocean Terrace)	\$ 94,400	Replace	472	6.00	Ductile Iron	1950's	2	Galvanize d Steel	Water Quality	30	TBD	Yes
608	Coastal Operating Area	TOMS RIVER	Toms River - Ocean Road (from Barnegat Way to Beach Way)	\$ 107,600	Replace	538	6.00	Ductile Iron	1950's	2	Galvanize d Steel	Water Quality	60	TBD	Yes
689	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Westmont Ave from Rt 35 N to terminus (boardwalk).	\$ 109,500	Replace	730	8.00	Ductile Iron	1950's	4	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
717	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Cove Way from Rt 35 S to 6"-2" reducer in Harbor Dr/Keith Ln intersection.	\$ 76,800	Replace	640	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
752	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Johnson Rd from Rt 35 S to terminus (bay).	\$ 72,000	Replace	555	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
756	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - Surf Way from Rt 35 N to Ocean Rd.	\$ 75,600	Replace	630	6.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
764	Coastal Operating Area	TOMS RIVER	Toms River Twp - Monterey - 2nd Ave from Rt 35 N to 8"-2" reducer.	\$ 67,500	Replace	450	8.00	Ductile Iron	1950's	2	Cast Iron	Safety and Reliability/Structural	30	TBD	Yes
7147	Coastal Operating Area	TOMS RIVER	W Tarpon Way (Rt355 to Rt35N)	\$ 134,000	Replace	670	6.00	Ductile Iron	Unknown	Unknown	Unknown	Safety and Reliability	60	TBD	Yes
6810	Central Operating Area	UNION TWP	Springfield Ave. (Valley to Vauxhall Rd.)	\$ 443,000	Replace	2215	8.00	Ductile Iron	1920's	4	Cast Iron	System Flows and Pressure	90	2022Q4	Yes
5367	Southwest Operating Area	VOORHEES	Voorhees - Peregrine and Evesham - ACross PSE&G R.O.W	\$ 157,500	Replace	700			Unknown	8.00	Unknown	System Flows and Pressure	60	TBD	Yes
5955	Southwest Operating Area	VOORHEES	Voorhees - Burlington Avenue - Somerdale Road to Dead End	\$ 253,000	Replace	1350	8.00	Ductile Iron	1950's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
46	North Operating Area	WASHINGTON BOROUGH	Washington Boro - Flower Ave Harding to E. Washington Ave	\$ 360,000	Replace	1600	12.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
139	North Operating Area	WASHINGTON BOROUGH	Washington Boro - West Warren, from Grand Ave. and Belvidere Ave.	\$ 350,000	Replace	1400	8.00	Ductile Iron	1940's	4	Cast Iron	Relocation/Opportunity	60	TBD	Yes
140	North Operating Area	WASHINGTON BOROUGH	Washington Boro - W Johnson, between Lincoln and Grand	\$ 200,000	Replace	1000	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
141	North Operating Area	WASHINGTON BOROUGH	Washington Boro - W Stewart, between Lincoln and Grand	\$ 220,000	Replace	1100	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes
142	North Operating Area	WASHINGTON BOROUGH	Washington Boro - State Street between Lincoln and Grand	\$ 240,000	Replace	1200	8.00	Ductile Iron	1940's	4	Cast Iron	System Flows and Pressure	60	TBD	Yes

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5740	North Operating Area	WASHINGTON BOROUGH	Flower Ave from Sunrise Terrace to Harding Dr.	\$	341,000	Replace	1705	8.00	Ductile Iron	1960's	6	Asbestos Cement	Safety and Reliability/Structural	60	2023Q3	Yes
5746	North Operating Area	WASHINGTON BOROUGH	Youmans Ave from Broad Street going East to Valve V8W-68	\$	363,000	Replace	1815	12.00	Ductile Iron	Unknown	4	Cast Iron	System Flows and Pressure	60	2022Q3	Yes
5747	North Operating Area	WASHINGTON BOROUGH	Gibson Place from Jackson Ave to Prosper Way	\$	221,000	Replace	1105	8.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	60	2024Q3	Yes
5748	North Operating Area	WASHINGTON BOROUGH	Prosper Way from Gibson Place to E. Washington Ave	\$	233,000	Replace	1165	8.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	60	2025Q3	Yes
5749	North Operating Area	WASHINGTON BOROUGH	Jackson Ave from Church Street to E. Washington Ave	\$	123,750	Replace	550	12.00	Ductile Iron	1960's	6	Cast Iron	System Flows and Pressure	60	2022Q3	Yes
5753	North Operating Area	WASHINGTON BOROUGH	McDonald Street from Warren St to end at 16" main	\$	260,700	Replace	1185	12.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	2023Q3	Yes
5755	North Operating Area	WASHINGTON BOROUGH	Van Buren St from Prosper Way until end	\$	149,000	Replace	745	8.00	Ductile Iron	1960's	6	Asbestos Cement	System Flows and Pressure	60	2022Q3	Yes
5757	North Operating Area	WASHINGTON BOROUGH	Birchwood Ave from Washburn Ave to End	\$	80,500	Replace	460	8.00	Ductile Iron	1930's	4	Asbestos Cement	System Flows and Pressure	30	2022Q3	Yes
6187	North Operating Area	WASHINGTON BOROUGH	NORTH WANDLING	\$	80,000	Replace	400	8.00	Ductile Iron	1950's	4	Asbestos Cement	System Flows and Pressure	30	TBD	Yes
6215	North Operating Area	WASHINGTON BOROUGH	CHRISTINE	\$	90,000	Replace	450	8.00	Ductile Iron	1940's	6	Asbestos Cement	Safety and Reliability	30	TBD	Yes
5743	North Operating Area	WASHINGTON TWP	Fisher Ave from Railroad Ave to Washburn Ave	\$	275,000	Replace	1375	8.00	Ductile Iron	1930's	4	Cast Iron	Water Quality	60	2022Q3	Yes
5760	North Operating Area	WASHINGTON TWP	Washington Ave from Brass Castle Rd to Mill Pond Road	\$	725,000	Replace	2900	16.00	Ductile Iron	1950's	8	Cast Iron	System Flows and Pressure	90	2022Q3	Yes
5761	North Operating Area	WASHINGTON TWP	Plane Hill Road from Partridge Run to Kinnaman Ave	\$	181,000	Replace	905	8.00	Ductile Iron	1960's	8	Cast Iron	System Flows and Pressure	60	2024Q3	Yes
5765	North Operating Area	WASHINGTON TWP	Pohatcong Ave from Valley View Rd to Pohatcong Dr	\$	123,000	Replace	615	8.00	Ductile Iron	1960's	6	Asbestos Cement	System Flows and Pressure	60	2022Q3	Yes
6184	North Operating Area	WASHINGTON TWP	OLD SCHOOL HOUSE RD	\$	134,000	Replace	670	8.00	Ductile Iron	1930's	2	Galvanize d Steel	System Flows and Pressure	60	2025Q3	Yes
6185	North Operating Area	WASHINGTON TWP	DOGWOOD LANE	\$	192,000	Replace	960	8.00	Ductile Iron	1930's	2	Galvanize d Steel	System Flows and Pressure	60	2023Q3	Yes
6071	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Elmwood Avenue from Wall Street to north of Hollywood Avenue	\$	78,000	Replace	520	8.00	Ductile Iron	1950's	2	Cast Iron	System Flows and Pressure	60	TBD	Yes
6146	Coastal Operating Area	WEST LONG BRANCH	West Long Branch - Woodland Drive	\$	118,500	Replace	790	8.00	Ductile Iron	1950's	6	Asbestos Cement	System Flows and Pressure	60	TBD	Yes
49	North Operating Area	WEST ORANGE	West Orange - Mitchell St (bet Colony & Rollinson)	\$	330,000	Replace	1650	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
153	North Operating Area	WEST ORANGE	West Orange Rehab - Phase 3 Replace	\$	247,500	Replace	1100	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
154	North Operating Area	WEST ORANGE	West Orange Rehab - Phase 4 Replace	\$	67,500	Replace	300	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	30	TBD	Yes
155	North Operating Area	WEST ORANGE	West Orange Rehab - Phase 5 Replace	\$	326,250	Replace	1450	8.00	Ductile Iron	1930's	6	Cast Iron	System Flows and Pressure	60	TBD	Yes
5622	North Operating Area	WEST ORANGE	Gregory Place	\$	220,000	Replace	850	8.00	Ductile Iron	1920's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q3	Yes
6202	North Operating Area	WEST ORANGE	St. Cloud Avenue from Old Indian Road to Arverne Rd	\$	440,000	Replace	2200	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes
6203	North Operating Area	WEST ORANGE	Fairview Ave from Birchwood Ave to Chestnut Rd	\$	245,000	Replace	1400	6.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6204	North Operating Area	WEST ORANGE	Arverne Rd from St. Cloud Ave to Highland Blvd	\$	500,000	Replace	2500	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes
6205	North Operating Area	WEST ORANGE	Edgewood Ave from Arverne Rd to Old Salem Rd	\$	367,000	Replace	1835	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2023Q3	Yes
6206	North Operating Area	WEST ORANGE	St. Cloud Avenue, Chestnut Rd, Rodman Place, Sheridan Ave and Lenox Terrace	\$	1,807,500	Rehab	7230	6.00	Cast Iron	1950's	Unknown	Cast Iron	Water Quality	120	TBD	Yes
6217	North Operating Area	WEST ORANGE	Rock Spring Avenue from Northfield Ave to Chestnut Road	\$	402,000	Replace	2010	8.00	Ductile Iron	1950's	6	Ductile Iron	Safety and Reliability/Structural	90	2024Q4	Yes
6219	North Operating Area	WEST ORANGE	Lessing Road from St. Cloud to Birchwood Ave	\$	316,000	Replace	1580	8.00	Ductile Iron	1950's	6	Ductile Iron	Safety and Reliability/Structural	60	2024Q4	Yes
6220	North Operating Area	WEST ORANGE	Devonshire Terrace from Mt. Pleasant Ave to end cap past Nottingham Rd	\$	197,000	Replace	985	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes

New Jersey American Water Company, Inc.
2018 DSIC Foundational Filing

Appendix C-1 (Supplemental List of Previously Approved Projects Under 2015 DSIC Foundational Filing)

6221	North Operating Area	WEST ORANGE	Woodland Avenue from Forest Avenue to Prospect Avenue	\$ 413,000	Replace	2065	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2023Q3	Yes
6225	North Operating Area	WEST ORANGE	Ahern Ave. (from Barton Dr. to end cap) and Barton Dr. (from Laurel Dr. to end cap)	\$ 227,500	Replace	1300	6.00	Ductile Iron	Unknown	6.00	Unknown	System Flows and Pressure	60	2023Q3	Yes
6226	North Operating Area	WEST ORANGE	Sunnyside Rd from Pleasant Valley Way to end	\$ 311,000	Replace	1555	8.00	Ductile Iron	1950's	6	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes
6227	North Operating Area	WEST ORANGE	Hover Ave from Pleasant Valley Way to end just past Roosevelt Ave	\$ 190,000	Replace	950	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6228	North Operating Area	WEST ORANGE	Bradley Terrace from Mt. Pleasant to Gregory Ave	\$ 138,000	Replace	690	8.00	Ductile Iron	1950's	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6229	North Operating Area	WEST ORANGE	C&L Virginia Ave, Grant Terrace, Winfields St, Kirk St., Maple St. and Elm Street	\$ 889,400	Rehab	4447	8.00	Other	Unknown	6	Unknown	Water Quality	120	TBD	Yes
6230	North Operating Area	WEST ORANGE	Old Indian Rd from Pleasant Valley Road to St. Cloud Ave	\$ 197,000	Replace	985	8.00	Ductile Iron	1950's	8	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6905	North Operating Area	WEST ORANGE	WEST ORANGE - Belgrade Terr from Bradford Ave to Club Blvd	\$ 300,000	Replace	1440	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6907	North Operating Area	WEST ORANGE	WEST ORANGE - Belle Terre Rd from Pleasant Valley Way to Coolidge Ave	\$ 260,000	Replace	1287	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2024Q3	Yes
6908	North Operating Area	WEST ORANGE	WEST ORANGE - Brookside Rd from Fairway Dr to Gregory Ave	\$ 380,000	Replace	1861	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6909	North Operating Area	WEST ORANGE	WEST ORANGE - Forest Hill Rd from Gregory Ave to Collamore	\$ 500,000	Replace	1213	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6910	North Operating Area	WEST ORANGE	WEST ORANGE - Hunterdon Rd from Warren Rd to Merklin Ave	\$ 500,000	Replace	1936	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6911	North Operating Area	WEST ORANGE	WEST ORANGE - Korwel Cir + Ct from Northfield Ave	\$ 380,000	Replace	2048	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	TBD	Yes
6912	North Operating Area	WEST ORANGE	WEST ORANGE - Luddington Rd from Gregory Ave to Lowell Ave	\$ 200,000	Replace	931	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6913	North Operating Area	WEST ORANGE	WEST ORANGE - Northfield Ave from Walker Rd to Main St	\$ 2,000,000	Replace	8083	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	120	2022Q3	Yes
6914	North Operating Area	WEST ORANGE	WEST ORANGE - Pleasant Valley Way from Eagle Rock Ave to I-280	\$ 1,000,000	Replace	5284	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	120	2023Q3	Yes
6920	North Operating Area	WEST ORANGE	WEST ORANGE - Randolph Pl from Mt Pleasant Ave to Longview St	\$ 300,000	Replace	1436	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2023Q4	Yes
6922	North Operating Area	WEST ORANGE	WEST ORANGE - Seaman Rd + Deerfield Dr from Woodland Ave	\$ 1,000,000	Replace	1710	8.00	Ductile Iron	Unknown	6	Asbestos Cement	Safety and Reliability/Structural	60	2023Q4	Yes
6923	North Operating Area	WEST ORANGE	WEST ORANGE - St. Cloud Ave From Old Indian Rd to Arverne Rd	\$ 460,000	Replace	2059	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	90	2022Q3	Yes
6925	North Operating Area	WEST ORANGE	WEST ORANGE - Stone Dr from Blackstock Rd to Weber Rd	\$ 460,000	Replace	1337	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2025Q4	Yes
6927	North Operating Area	WEST ORANGE	WEST ORANGE - Sunnyside Rd from Pleasant Valley Way	\$ 300,000	Replace	1545	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	2023Q4	Yes
6928	North Operating Area	WEST ORANGE	WEST ORANGE - Undercliff Terr from Forest Hill Rd to Bradford Ave	\$ 260,000	Replace	1223	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability/Structural	60	TBD	Yes
6931	North Operating Area	WEST ORANGE	WEST ORANGE - Wellington Ave from Gregory Ave to Valley Rd	\$ 400,000	Replace	2351	8.00	Ductile Iron	Unknown	4	Cast Iron	Safety and Reliability/Structural	90	2024Q4	Yes
6942	North Operating Area	WEST ORANGE	WEST ORANGE - Eagle Rock Ave from Mississippi to Smith Manor Blvd	\$ 680,000	Replace	3511	8.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	90	2025Q3	Yes
6943	North Operating Area	WEST ORANGE	WEST ORANGE - Eagle Rock Ave from Pleasant Valley Way to Oval Rd.	\$ 935,000	Replace	3025	12.00	Ductile Iron	Unknown	6	Cast Iron	Safety and Reliability	90	2025Q3	Yes
5	Central Operating Area	WEST WINDSOR TWP	West Windsor - Alexander Road @ Wallace Intersection of N Post to Harris Ave Major restoration each time over 10,000.00	\$ 330,000	Replace	1460	12.00	Ductile Iron	1960's	10	Cast Iron	Safety and Reliability/Structural	60	2023Q4	Yes
6	Central Operating Area	WEST WINDSOR TWP	West Windsor - Fisher Ave.	\$ 98,400	Replace	820	8.00	Ductile Iron	1930's	6	Asbestos Cement	Safety and Reliability/Structural	60	2023Q4	Yes
7	Central Operating Area	WEST WINDSOR TWP	West Windsor - Washington Road Route 1 to Fairview 12" main	\$ 297,000	Replace	1650	12.00	Ductile Iron	1950's	10	Cast Iron	Safety and Reliability/Structural	60	2023Q4	Yes
8	Central Operating Area	WEST WINDSOR TWP	West Windsor - Wheeler Way	\$ 238,500	Replace	1325	8.00	Ductile Iron	Unknown	8	Cast Iron	Safety and Reliability/Structural	60	2023Q4	Yes
410	Southwest Operating Area	WESTAMPTON TWP	Westampton - Irick Road - Woodlane Road to Rancocas Road	\$ 494,000	Replace	2600	16.00	Ductile Iron	1960's	8	Asbestos Cement	Safety and Reliability/Structural	90	TBD	Yes
411	Southwest Operating Area	WESTAMPTON TWP	Westampton - Noryn Lane - Woodlane Road to Burlington-Mount Holly Road	\$ 114,000	Replace	600	12.00	Ductile Iron	1960's	10	Asbestos Cement	Safety and Reliability/Structural	60	TBD	Yes

New Jersey American Water Company, Inc.
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5505	Southwest Operating Area	WESTAMPTON TWP	Westampton - Rancocas Road from Irick Road to Hydrant HWEA-76	\$ 450,000	Replace	2000	16.00	Ductile Iron	1970's	8	Ductile Iron	System Flows and Pressure	90	TBD	Yes
6841	Central Operating Area	WESTFIELD	Easement - Echo Lake CC (Woodland to Springfield)	\$ 1,018,500	Replace	4074	16.00	Ductile Iron	1960's	16	Asbestos Cement	Water Quality	120	2025Q4	Yes
6843	Central Operating Area	WESTFIELD	North Ave. (W. Dudley to 4th Ave.)	\$ 1,846,800	Rehab	8208	12.00	Cast Iron	1910's	Unknown	Cast Iron	System Flows and Pressure	120	2023Q4	Yes
646	North Operating Area	WOODLAND PARK	Clean & Line all unlined CI mains in Woodland Park due to fire flows and DW.	\$ 4,012,000	Rehab	40120	6.00	Other	Unknown	6	Cast Iron	System Flows and Pressure	120	TBD	Yes
5660	North Operating Area	WOODLAND PARK	McBride Av north end	\$ 425,000	Replace	1900	8.00	Ductile Iron	1920's	8	Cast Iron	System Flows and Pressure	60	2025Q3	Yes

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 16-W-0259 - Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York American Water Company, Inc. for Water Service.

ORDER ESTABLISHING RATES FOR WATER SERVICE

Issued and Effective: May 18, 2017

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service
Commission held in the City of
Albany on May 18, 2017

COMMISSIONERS PRESENT:

Gregg C. Sayre, Interim Chairman
Diane X. Burman

CASE 16-W-0259 - Proceeding on Motion of the Commission as to
the Rates, Charges, Rules and Regulations of
New York American Water Company, Inc. for Water
Service.

ORDER ESTABLISHING RATES FOR WATER SERVICE

(Issued and Effective May 18, 2017)

BY THE COMMISSION:

INTRODUCTION

This order establishes a four-year rate plan for water service by New York American Water Service, Inc. (the Company or NYAW), for the period April 1, 2017 through March 31, 2021. The order adopts the terms of a Joint Proposal (or JP) executed by the Company and the New York State Department of Public Service Staff (Staff), with modifications. LI Clean Air Water & Soil Ltd. (CAWS)¹ and North Merrick Community Association (NMCA)² oppose the JP. Public Utility Law Project of New York, Inc. (PULP) neither supports nor opposes the JP.³

¹ CAWS states that it is a not-for-profit organization formed in 2016 to protect and preserve Long Island's natural resources.

² NMCA states it is a not-for-profit civil association covering parts of Merrick in Long Island.

³ The New York State Department of State, Division of Consumer Protection's Utility Intervention Unit (UIU) also is a party to, but has not participated in, this rate proceeding.

BACKGROUND

NYAW is a wholly-owned subsidiary of American Water Works Company, Inc. (AWW) that provides residential and non-residential metered and other water services as well as public and private fire protection services to approximately 124,000 customers in parts of Nassau, Putnam, Sullivan, Ulster, Washington and Westchester Counties. Due to various acquisitions of other water companies, NYAW currently operates under four tariffs covering the following water supply districts and service areas: Lynbrook, Merrick, Sea Cliff, Cambridge, Kingsvale, Dykeer, Waccabuc, Wild Oaks, Mill Neck Estates, Mt. Ebo, Spring Glen Lake, and Lucas Estates.

Company Acquisitions and Prior Rate Plans

NYAW, then operating as the Long Island Water Corporation (LIWC), last requested a base rate increase for its Lynbrook Water District in 2011.⁴ The Commission thereafter adopted a three-year rate plan commencing April 1, 2012, pursuant to which LIWC received annual base rate increases of approximately \$3.0 million (6.0%), \$1.4 million (2.6%), and \$1.2 million (2.2%) in the first, second, and third rate years, respectively.⁵ The rate plan included procedures to capture, for LIWC customers' benefit, synergy savings that would accrue if the Commission approved AWW's acquisition of Aqua New York, Inc. (Aqua NY), which was then the subject of a petition filed in Case 11-W-0472.

⁴ Case 11-W-0200, Long Island Water Corporation d/b/a Long Island American Water - Water Rates. Rate request filed April 29, 2011.

⁵ Case 11-W-0200, Long Island Water Corporation d/b/a Long Island American Water - Water Rates, Order Determining Revenue Requirement and Rate Design (issued March 20, 2012).

In 2012, the Commission approved AWW's acquisition of Aqua NY and its wholly-owned subsidiaries, New York Water Service Corporation (NYWS) and Aquarian Water Company of Sea Cliff, Inc. (Sea Cliff),⁶ and thereafter approved a petition to merge Aqua NY, NYWS, Sea Cliff and LIWC into a single corporation, NYAW.⁷ In the Acquisition Order, the Commission approved a rate increase moratorium whereby AWW would be precluded from filing for rate increases for NYWS (which provided service to the Merrick water district), Sea Cliff, and Aqua NY's five upstate service districts (Cambridge, Kingsvale, Dykeer, Waccabuc and Wild Oaks) until March 31, 2015. The Commission also directed AWW to consider establishing, upon expiration of the rate increase moratorium, consolidated, uniform rates for the same rate classifications for customers of all its service territories. In addition, the terms and conditions of NYWS's rate plan remained in effect,⁸ as modified by the acquisition order, and the acquired companies became or continued to be subject to a Revenue Adjustment Clause (RAC), Property Tax Reconciliation (PTR) provision, and an earnings sharing mechanism (ESM). The Cambridge district remained subject to its existing System Improvement Charge (SIC).

⁶ Case 11-W-0472, American Water Works Co., Inc., et al. - Acquisition of Aqua New York, Inc., Order Approving Stock Acquisition (issued April 20, 2012) (Acquisition Order).

⁷ Case 12-W-0217, Aqua of New York of Sea Cliff, Inc. et al. - Merger, Order Approving Merger (issued August 17, 2012).

⁸ NYWS was subject to a three-year rate plan ending February 5, 2013, under which it received annual base rate increases of approximately \$1.90 million (8.5%), \$.42 million (1.57%) and \$.53 million (1.95%), in the first, second, and third rate years, respectively. Case 09-W-0237, New York Water Service Corp. - Water Rates, Order Establishing Three-Year Rate Plan (issued January 29, 2010).

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The last base rate increase for Sea Cliff was in 2003 when the Commission approved a rate plan for the three years ending September 30, 2004, 2005, and 2006, with base rate increases of \$142,354 (6.6%), \$138,586 (6%), and \$0, respectively.⁹ The last base rate increase for Aqua NY's five upstate service districts was in 2008 when the Commission approved an increase of approximately \$173,600 (117%) for Cambridge, \$30,000 (32%) for Kingsvale, \$70,500 (99.7%) for Dykeer, \$26,000 (54.6%) for Waccabuc, and \$15,500 (11.1%) for Wild Oaks.¹⁰ In doing so, the Commission began "the process of developing a consolidated rate structure" for those upstate service districts.¹¹

In 2014, the Commission approved NYAW's acquisition of Mt. Ebo Water Works, Inc., the merger of that company into NYAW, and the replacement of all non-revenue terms of Mt. Ebo's tariff with those used in NYAW's Lynbrook Water District tariff.¹² The last base rate increase for Mt. Ebo was in 2012 when the Commission approved an increase of \$109,105 (50%) in its annual revenues.¹³

⁹ Case 02-W-1564, Sea Cliff Water Company - Water Rates, Order Establishing Rates and Authorizing Surcharge Mechanism, Name Change, and Other Tariff Revisions (issued October 22, 2003).

¹⁰ Case 08-W-0107, Aqua New York, Inc. - Water Rates, Order Approving Modified Rate Increase (issued December 23, 2008).

¹¹ Id., p. 18.

¹² Case 14-W-0067, New York American Water Company, Inc. - Acquisition of Mt. Ebo Water Works, Inc., Order Approving Stock Sale and Acquisition (issued June 13, 2014).

¹³ Case 12-W-0210, Mt. Ebo Waterworks - Water Rates, Order Approving Rates (issued November 27, 2012).

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Thereafter, the Commission approved NYAW's acquisition of Lucas Estates Water Company, Inc.,¹⁴ Spring Glen Lake Water Company LLC,¹⁵ and the Mill Neck Estates Water System,¹⁶ and the replacement of their tariffs with the terms used in NYAW's Lynbrook Water District tariff, including its rates. In 2015, the Commission adopted the terms of a Joint Proposal that, among other things, provided that NYAW's existing rate structure would be continued with certain modifications and that NYAW would not file for a rate increase with an effective date before March 31, 2017.¹⁷

Current Rate Filing

On April 29, 2016, NYAW filed tariff revisions designed to increase revenues by approximately \$8.5 million, or 8.3%, for the rate year ending March 31, 2018. NYAW also sought to consolidate its service territories into two service areas, with a proposed increase in revenues for Service Area 1 (SA1)¹⁸

¹⁴ Case 14-W-0148, New York American Water Company, Inc. - Acquisition of Lucas Estates Water Company, Inc., Order Approving Sale and Acquisition (issued July 25, 2014).

¹⁵ Case 15-W-0375, New York American Water Company, Inc. - Acquisition of Spring Glen Lake Water Company LLC, Order Approving Sale and Acquisition (issued October 15, 2015).

¹⁶ Case 15-W-0639, New York American Water Company, Inc. - Acquisition of Mill Neck Estates Water System, Order Approving Sale and Acquisition (issued February 25, 2016).

¹⁷ Case 14-W-0489, American Water Company, Inc. Petition for an Update to its System Improvement Charge, Order Adopting Terms of Joint Proposal (issued August 14, 2015).

¹⁸ SA1 includes the Lynbrook District, the five upstate water districts from the former Aqua NY (Cambridge, Dykeer, Kingsvale, Waccabuc and Wild Oaks), and the service areas formerly covered by the Mt. Ebo, Lucas Estates, Mill Neck Estates, and Spring Glen Lake water systems (Exh. 41, Joint Proposal, at 1 n.1). Ninety-eight percent of the SA1 customers are located in Lynbrook.

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of \$5.8 million or 8.4% and for Service Area 2 (SA2)¹⁹ of \$2.7 million or 8.1%. In addition, NYAW proposed that the general terms and conditions and tariffs currently in effect for its various service territories be consolidated in order to reduce administrative expenses, reduce customer confusion, and blend the rate effect of necessary capital investments across multiple service areas.

The Commission has suspended NYAW's rate filing and initiated this proceeding to examine the merits of the Company's proposals. The suspension period currently extends through June 23, 2017.²⁰

Pursuant to the schedule established for the case,²¹ Staff, CAWS and NMCA filed testimony and exhibits in response to NYAW's rate filings on September 2, 2016. Staff was the only party to offer alternative revenue requirement recommendations to NYAW's proposal. Staff recommended that the revenue requirements be increased by \$43,188 for SA1 and decreased by \$891,340 for SA2.²²

On September 23, 2016, NYAW filed rebuttal testimony and exhibits.²³ NYAW revised its proposed revenue increase upward to approximately \$8.7 million, reflecting proposed

¹⁹ SA2 includes the Merrick and Sea Cliff Districts (Exh. 41, Joint Proposal, at 1 n.2). Ninety-one percent of the SA2 customers are located in Merrick.

²⁰ Order Approving Extension of Maximum Suspension Period of Major Rate Filing (issued March 9, 2017).

²¹ Ruling on Schedule (issued June 14, 2016).

²² Exh. 71, Luthringer Testimony, p. 5.

²³ CAWS also filed rebuttal testimony on September 23, 2016. On October 25, 2016, Administrative Law Judge Moreno granted NYAW's motion to exclude that testimony from the evidentiary record on the ground that it was unauthorized supplemental direct testimony.

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increases for SA1 in the approximate amount of \$6.7 million and for SA2 in the approximate amount of \$2 million.²⁴

NYAW filed a notice of impending settlement negotiations on September 26, 2016. Administrative Law Judge (Judge) Ashley Moreno advised us that the notice complied with our rules and regulations (16 NYCRR 3.9(2)). Based on the parties' continued efforts to reach a settlement, the evidentiary hearing, initially scheduled to commence on October 13, 2016, was postponed multiple times.²⁵ NYAW also consented to extensions of the suspension period in these proceedings through June 23, 2017, subject to a "make whole" provision.²⁶

On January 9, 2017, NYAW filed a Joint Proposal executed by NYAW and Staff. Pursuant to the schedule adopted thereafter,²⁷ on February 8, 2016, NYAWS and Staff filed statements in support of the Joint Proposal, CAWS filed a statement in opposition to the Joint Proposal, and PULP filed a statement indicating that it neither supports nor opposes the Joint Proposal. On February 21, 2017, NYAW, Staff and CAWS filed reply statements.

An evidentiary hearing on the Joint Proposal was held in Albany on March 8, 2017, before Judges Costello and Moreno.²⁸ A total of 114 exhibits were admitted into the record. NYAW and

²⁴ Exh. 40, FXS-8R, FXS-8.1R and FXS-8.2R.

²⁵ Ruling Postponing Hearing (issued October 6, 2016), Ruling Further Postponing Hearing (issued November 10, 2016), and Third Ruling Postponing Hearing (issued December 7, 2016).

²⁶ See NYAW Letters dated September 27, November 9 and December 5, 2016.

²⁷ Ruling on Schedule and Discovery Motion (issued January 24, 2017).

²⁸ Notice of Evidentiary Hearing (issued February 23, 2017).

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Staff sponsored a panel at the hearing in support of the JP. CAWS and NMCA jointly cross-examined the witnesses. The panel also responded to questions from the ALJs regarding various provisions of the JP.

Pursuant to a schedule established for post-hearing briefing,²⁹ CAWS filed an initial post-hearing brief and NYAW filed a letter in lieu of an initial post-hearing brief on April 17, 2017. On April 24, 2017, NYAW and Staff each filed a post-hearing brief replying to CAWS's brief.

PUBLIC NOTICE AND COMMENTS

Public Notice

Pursuant to State Administrative Procedure Act (SAPA) §202(1), a Notice of Proposed Rulemaking was published in the State Register on July 13, 2016 [SAPA No. 16-W-0259SP1]. In addition, on June 16, 2016, the Commission issued a Notice of Public Statement Hearings on Proposed Water Rate Increase, which described the Company's rate filing and scheduled information sessions followed by public statement hearings in the afternoons and evenings on July 6, 2016 in Brewster, New York, and on July 13, 2016 in Oceanside, New York. The notice stated that NYAW representatives would provide a brief overview of the Company's rate proposal during the information session and provide a brief opportunity for questions and answers. The notice also stated that comments could be made by internet, mail or the Commission's toll-free Opinion Line. A copy of the notice was published in The Eagle and The Putnum County Courier on June 30, 2016; The Journal News on June 30 and July 5, 2016; the Sullivan County Democrat on July 1 and 5, 2016; The Daily Freeman on July 1 and 5, 2016; the Putnam County News and

²⁹ Ruling on Post-Hearing Briefing (issued April 10, 2017).

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Recorder on July 6, 2016; and the Nassau edition of Newsday on July 4 and 11, 2016.

On October 6, 2016, a similar notice was issued, which, among other things, explained that the parties had filed testimony with respect to the rate proposal and scheduled a public statement hearing on October 26, 2016 in Malverne, New York, during the afternoon, and in Wantagh, New York, during the evening. A copy of the notice was published in the Nassau, Suffolk and Queens editions of Newsday on October 12 and 19, 2016. The public statement hearings in Malverne and Wantagh were scheduled in response to requests by NYAW's customers on Long Island.

Public Statement Hearing Comments³⁰

Pursuant to the notices discussed above, a total of six public hearings were held on NYAW's rate filing. No comments were made at the hearings in Brewster. Comments were made by ten individuals at the Oceanside hearings, 20 individuals at the Malverne hearing, and 31 individuals at the Wantagh hearing. Over 30 of those individuals spoke on their own behalf. Others commented on behalf of PULP, CAWS, NMCA, the Oceanside Civic Association, the Oceanside Fire Department, the Baldwin Civic Association, the Wantagh Seaford Homeowners Association, the Forest City Community Association, and several private businesses. Elected officials from the New York State Senate and Assembly, the Nassau County Legislature, and the Village of Malverne also commented at the hearings.

Commenters generally opposed the requested rate increases in light of the economy and the high cost of living on

³⁰ This section summarizes the comments made at the public statement hearings. Transcripts of the public statement hearings appear in their entirety on the Department's website.

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Long Island and because they believed they already paid too much for water, especially when compared to nearby residents who received water from public water authorities or municipal water districts. They stated that they paid three times more than customers of public water authorities, assertedly because NYAW was allowed to recover high profits and 100% of its property taxes from customers. Many maintained that such rate recovery for NYAW was unconstitutional in that it treated customers of public and private water companies unequally. Several commenters stated that they also would prefer to be served by a public water authority. Some commenters stated that the cost of service for fire hydrants also was too high and that such service cost approximately ten times more than that charged by nearby public water authorities. A few statements indicated that the requested increase in rates was too high when viewed in the context of the State's two percent property tax cap.

Various speakers complained about the quality of their water, stating that it was brown or contained sediment, which they attributed to iron in the water or rust from NYAW's pipes. Some stated they could not use NYAW's water for drinking, bathing, washing clothes or washing dishes, and that they had to either filter their water or use bottled water instead. Other commenters complained about low water pressure, various water main breaks, and poor customer service. A few speakers raised concerns about the contamination of water supplies by groundwater plumes containing industrial solvents from a superfund site in Bethpage, New York. They questioned whether they were being charged in rates for related clean-up costs, and suggested that NYAW aggressively seek to recover such costs from the parties responsible for the contamination.

A few speakers stated their view that NYAW was seeking an increase in rates for projects that had already been funded

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in prior rate cases. Some of them also asserted that NYAW should have made infrastructure improvements with the money it used for construction of an office building in Merrick, which they maintained was not needed and should not be paid for in rates. Some commenters stated that they should not have to pay research and development costs for NYAW's geothermal pilot project on Long Island because they would not benefit from the project. A few of them also complained about the salaries paid to NYAW executives and about being solicited by another subsidiary of AWW to buy insurance for their privately-owned water pipes.

State Senator Todd Kaminsky stated concerns with the cost of living on Long Island, especially for the elderly, and maintained that no increase was justified given the common occurrence of brown water. Assembly Member Brian Curran expressed similar concerns about the increasing cost of living on Long Island and stated that NYAW has not improved its water quality over the past several years. Assembly Member Michaelle Solages stated that NYAW should look to save money and follow the two percent property tax cap rather than seeking a large increase in rates. Nassau County Legislator Steven D. Rhoads stated that NYAW should not get an increase in rates because it merely acts as a delivery system for the water that citizens already own, the requested increase would only widen the disparity between the costs paid by NYAW customers and customers of public water districts, and NYAW should first be required to seek alternative sources of funding and reduce operating costs through efficiencies. Nassau County Legislator Siela Bynoe indicated that many customers could not use NYAW's water and had to use bottled water and that NYAW should not get an increase in rates until it made further infrastructure improvements and released its budget to show the improvements it planned to make.

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Village of Malverne Mayor Patricia McDonald stated that NYAW had an aging water distribution system that has resulted in discolored water and that NYAW should find alternative sources to fund necessary upgrades to its system.

PULP and a few other speakers raised concerns with the impact that increased rates would have on customers with low or fixed incomes. They were in favor of implementing a low-income rate reduction program to address the issue, but believed that the administrative costs for the program that NYAW proposed were too high. PULP indicated that it would work with NYAW and Staff to find a better solution.

PULP and several other speakers also raised concerns about the potential for lead in the water. PULP suggested that the replacement of lead service lines be addressed on a statewide basis and that NYAW advise non-English speaking customers in their native language about the existence of lead service pipes and the health risks posed by lead. Other commenters stated that lead had been found in the water of certain schools and that NYAW had no plans to address whether residential customers also had a lead problem.

A few commenters supported the infrastructure improvements NYAW proposed and stated that the capital projects proposed by NYAW were needed to improve water quality and replace an aging infrastructure. One commenter noted that cost savings ultimately would be realized through the appropriate funding of capital projects.

Written Comments and Opinion Line Comments

In addition to the notices discussed above, the Commission issued a Notice Seeking Public Comment on the Joint Proposal on February 3, 2017, requesting comments by internet, mail or telephone by March 6, 2017. A copy of the notice was published in the Daily Freeman and the Nassau, Suffolk and

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Queens editions of Newsday on February 12 and 16, 2017; The Eagle on February 9 and 16, 2017; the Sullivan County Democrat on February 14 and 17, 2017; and the Putnam County Courier on February 14 and 21, 2017. Six telephone comments were received on the Commission's opinion line and 1,379 written comments were filed with the Commission, over 500 of which were made after the Joint Proposal was filed.³¹ The vast majority of the written and opinion line comments opposed NYAW's proposed rate increases for the same reasons offered in the public statement hearings.

A few individuals also stated that they did not understand how the cost of their water could be so high since it is a basic human necessity produced for free by nature and provided to others by nearby public water authorities or municipal water districts at a significantly lower cost and better quality. Various individuals questioned whether NYAW was making excessive profits because, they said, NYAW charged approximately four times more than nearby municipal water districts. Several individuals said their rates already were the highest in New York or the nation, they could not afford yet another increase, and they wanted the option to choose between competing water companies. Some also stated that their water was "clouded" at times or had an unpleasant smell or taste. A few individuals stated that various surcharges included on their

³¹ By letter dated March 6, 2017, Nassau County Legislator Steven D. Rhoads expressed concern regarding many of the terms of the Joint Proposal, including the proposed rate increases and Earnings Sharing Mechanism under which NYAW would retain 100% of earnings attributable to an average actual return on equity up to and including 9.75%. Legislator Rhoads requested the Commission to extend the public comment period and ultimately to reject the Joint Proposal. In response, the Commission issued a notice reopening the public comment period on the Joint Proposal through April 7, 2017. Further public comments received pursuant to that notice are discussed in the text.

water bills added to the already high cost of water. Some also commented that NYAW should not be allowed to recover any money when it successfully challenges its property tax assessments. Finally, several individuals stated that the Commission has merely acted as a "rubber stamp" to the Company's rate increase requests.

ANALYSIS OF JOINT PROPOSAL

The Public Service Law (PSL) establishes the Commission's broad supervisory jurisdiction over the furnishing or distribution of water for domestic, commercial or public uses and to those persons and entities operating the systems in New York State.³² The Commission is charged with their regulation to ensure that the services provided to customers and the public will be safe and adequate and that all charges made for those services are just and reasonable.³³ Setting just and reasonable rates requires a balancing of the customers' interests with those of the utility's investors.³⁴ We may consider such factors and assign the weight to those factors as is deemed appropriate in setting utility rates, and our decision will not be set aside unless it is made without a rational basis or reasonable support in the record.³⁵

In evaluating the terms of a joint proposal submitted for our consideration, we must determine if the joint proposal, considered as a whole, produces a result that is in the public interest. Our Settlement Guidelines set forth factors to be

³² PSL §§ 2(26), (27), 4(1), 5(1)(f) and 89-c(1).

³³ PSL §89-b(1).

³⁴ Abrams v Public Serv. Commn., 67 NY2d 205, 212 (1986).

³⁵ Id.

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used in conducting that analysis.³⁶ They include consideration of whether the terms of the joint proposal are consistent with the environmental, social and economic policies of the Commission and the State; produce results within the range of outcomes that might result if the issues in the case were fully litigated; appropriately balance the interests of the utility's ratepayers, its investors and the long-term viability of the utility; and provide a rational basis for our ultimate decision. Consideration is also given to whether the record is complete and the extent to which the settlement is contested.

Here, the parties were provided a fair and adequate opportunity to conduct discovery and submit testimony and exhibits in response to NYAW's testimony and exhibits. In addition to Staff, two parties filed testimony and exhibits in response to the Company's filings. Consistent with our rules of procedure,³⁷ the parties also were notified about planned settlement negotiations and given the opportunity to fully participate in those negotiations.

After the filing of the Joint Proposal, entered into by NYAW and Staff, the parties were permitted to submit initial and reply statements in support of or opposition to the JP. A total of 114 exhibits were admitted into the record at the evidentiary hearing, consisting of the parties' pre-filed testimony and exhibits, Joint Proposal and Appendices, parties' responses to written questions from the Administrative Law Judge, and the Company's responses to certain discovery requests. The 388 page transcript of the evidentiary hearing includes cross examination by CAWS and NMCA and responses by

³⁶ Cases 90-M-0255, et al., Procedures for Settlements and Stipulation Agreements, Opinion 92-2 (issued March 24, 1992) (Settlement Guidelines).

³⁷ 16 NYCRR 3.9.

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NYAW and Staff to questions by the ALJs. The parties also filed post-hearing briefs to further address issues raised at the evidentiary hearing. We find that the record compiled in this case is complete and provides an adequate basis for our decision.

The record demonstrates that the parties have conducted a thorough examination and analysis of NYAW's historic and proposed capital and operating expenditure levels and that the provisions of the JP address the legitimate concerns and interests of the parties, the Company and the Company's customers. The record also establishes the broad range of outcomes that could have been pursued in litigation and that the terms of the JP fall well within the range of potential litigated outcomes. The Joint Proposal is the product of negotiation and consensus between NYAW and Staff, and we acknowledge the difficult work and compromise necessarily involved in the process.

In addition, the terms of the Joint Proposal are consistent with current State policies. The JP includes an inclining block rate structure designed to foster water conservation, the first lead pipe removal pilot program for a regulated water utility in New York, and a water main replacement program that will reduce non-revenue water. At the same time, the JP includes several provisions to protect ratepayers from circumstances that otherwise would impose an unfair burden. Ratepayers are protected by an earnings sharing mechanism, downward-only Utility Plant in Service (UPIS) and main replacement reconciliation mechanisms, SIC provisions, and the Revenue, Production Costs and Property Tax Reconciliation (RPCPTR) mechanism.

Ratepayers also benefit by the levelization of the rate increases over the term of the rate plan and the

efficiencies created by consolidation of NYAW's water districts into two service areas. As discussed in the next section, the four-year term of the rate plan benefits both ratepayers and the Company. We find that the rate plan that we are adopting strikes an appropriate balance between the interest of ratepayers and the long-term viability of the Company.

We generally summarize and discuss below several provisions of the Joint Proposal. The discussion of these provisions is not an exhaustive discourse on each issue. Nevertheless, we have considered all of the terms set forth in the Joint Proposal, the evidentiary record, and the parties' arguments in support of or opposition to our adoption of the provisions of the JP.

Rate Plan Term

Section III.A of the Joint Proposal provides for a four-year rate plan that would begin on April 1, 2017, and continue through March 31, 2021. Rate Year 1 consists of the twelve-month period ending on March 31, 2018. Rate Years 2 through 4 consist of the twelve-month periods ending March 31, 2019, 2020 and 2021, respectively. The Company asserts that the multi-year plan is in the public interest because it provides customers and the Company with rate certainty and will allow the Company to focus on operating its water system rather than expending substantial resources to prepare and litigate annual rate filings.³⁸ Noting its general policy position that rate plans should be for no more than a one-year period, PULP expresses concern with the term of the rate plan based upon its view that, although multi-year rate plans arrived by settlement "theoretically" can provide better results for ratepayers than single-year rate plans arrived through litigation, "settlement

³⁸ NYAW Statement in Support, p. 5; NYAW Reply Statement, p. 9.

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outcomes providing better public benefits than litigated outcomes are far less common than New York's preference for rate case settlements would tend to imply."³⁹

PULP offers no evidentiary support for the proposition that customers actually benefit more from annually litigated rate filings than from multi-year rate plans resulting from settlement, and we agree with the Company that the multi-year rate plan provides various benefits to customers and the Company that are not otherwise available. For example, the Company, and in turn ratepayers, will avoid incurring costs for rate filings for at least the next three years. Long-term rate certainty also assists NYAW's customers in budgeting the funds needed to cover their water bills. Moreover, multi-year rate plans strengthen incentives for efficiency gains, which benefit ratepayers in the long-term, and as discussed below, the multi-year rate plan provides for the levelization of rates, significantly mitigating the economic impact of the rate increase on customers in Rate Year 1. Finally, a long-term plan allows utility management to focus on effectively running their business, making capital investments and developing programs with the best overall long-term benefits rather than focusing on annual rate case filings.

Revenue Increases

Section III.B of the Joint Proposal sets forth NYAW's annual revenue requirements for each of the four rate years. When compared to amounts the Company would have been entitled to recover through base rates and surcharges under current rate plans, the JP provides NYAW with an incremental revenue increase in Rate Year 1 of approximately \$3.6 million or 3.5%, divided into an increase of approximately \$3.26 million or 4.8% for SA1

³⁹ PULP Statement on the Joint Proposal, p. 3 (footnote omitted).

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and \$0.33 million or 1% for SA2. The incremental revenue increases proposed over the course of the rate plan are set forth in the chart below.

Unlevelized Incremental Revenue Increases (\$ millions)				
Rate Year	SA1 Revenue Increase	SA1 Percent Increase	SA2 Revenue Increase	SA2 Percent Increase
1	\$3.26	4.82%	\$0.33	0.98%
2	\$3.10	4.38%	\$1.82	5.31%
3	\$2.71	3.68%	\$2.02	5.62%
4	\$4.34	5.69%	\$3.63	9.58%

Under existing SIC provisions, NYAW was already entitled to recover approximately \$3.0 million for SA1 and \$0.16 million for SA2, which otherwise would be collected from customers through a surcharge.⁴⁰ Also as a surcharge under current rate plans, for the rate year ending March 31, 2018, the Company would be allowed to collect approximately \$5.16 million for SA1 and \$0.22 million for SA2 and through Revenue Adjustment Clause (RAC) provisions and approximately \$8.65 million for SA1 and \$3.63 million for SA2 under Property Tax Reconciliation (PTR) provisions.⁴¹ Including those amounts, which are revenue neutral because NYAW could collect them under existing rate plans, the JP recommends total revenue increases for Rate Year 1 of approximately \$20.10 million or 39.55% for SA1 and \$4.34 million or 14.43% for SA2.⁴² Taking these previously approved amounts into consideration the JP recommends the following total unlevelized annual base revenue increases for NYAW, by service area:

⁴⁰ Exh. 41, Joint Proposal, Appendix A-1.1, p. 1 and Appendix A-2.1, p. 1.

⁴¹ Id.

⁴² Id.

Unlevelized Annual Base Revenue Increases (\$ millions)				
Rate Year	SA1 Revenue Increase	SA1 Percent Increase	SA2 Revenue Increase	SA2 Percent Increase
1	\$20.10	39.55%	\$4.34	14.43%
2	\$3.10	4.38%	\$1.82	5.31%
3	\$2.71	3.68%	\$2.02	5.62%
4	\$4.34	5.69%	\$3.63	9.58%

To mitigate the impact of the Rate Year 1 revenue increases, the Joint Proposal recommends levelization of the increases, as shown below.

Levelized Base Revenue Increases (\$ millions)				
Rate Year	SA1 Levelized Revenue Increase	SA1 Percent Increase	SA2 Levelized Revenue Increase	SA2 Percent Increase
1	\$10.14	19.94%	\$3.07	10.20%
2	\$10.14	16.67%	\$3.07	9.29%
3	\$10.14	14.33%	\$3.07	8.53%
4	\$10.14	12.56%	\$3.07	7.88%

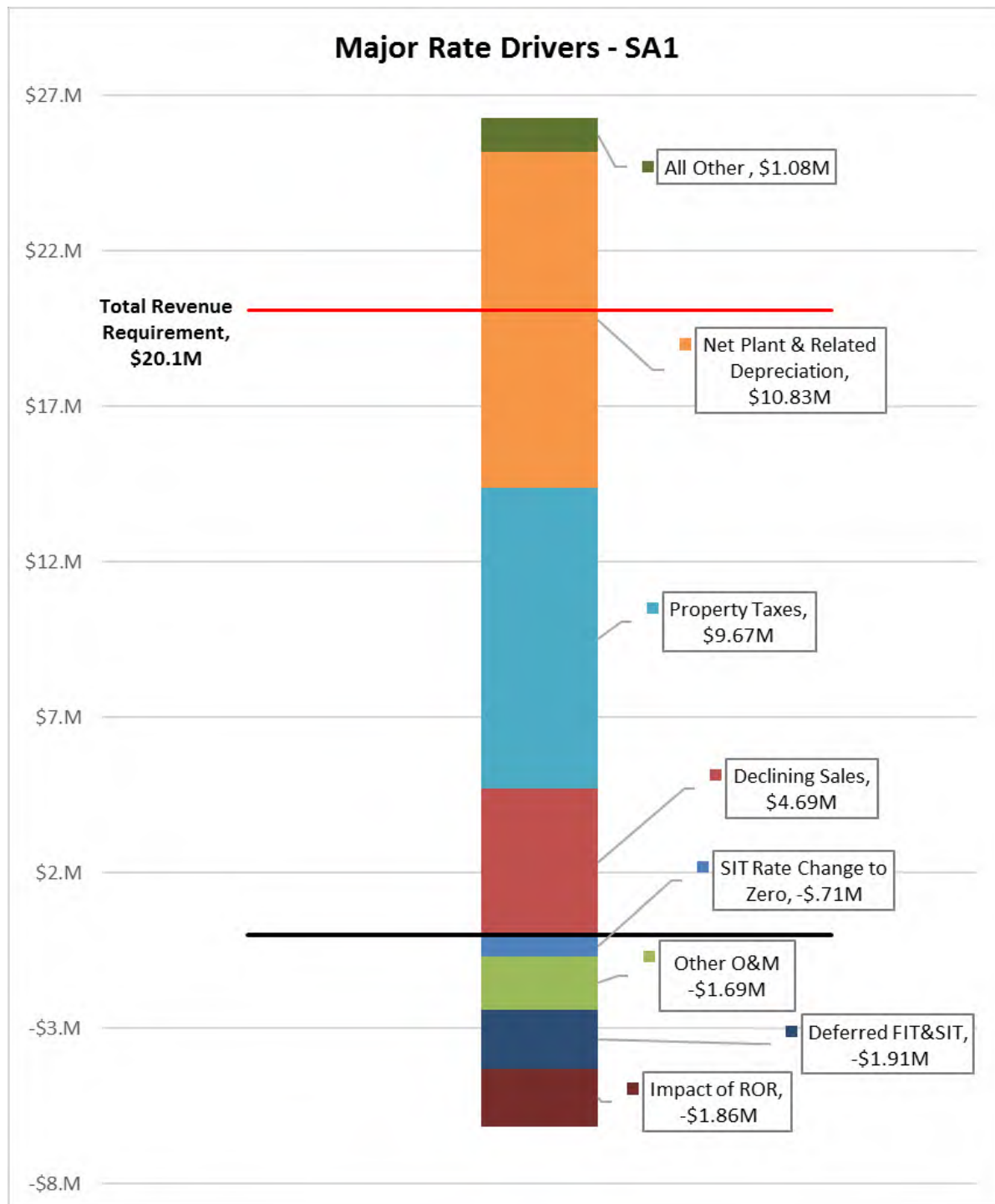
The proposed revenue increases are driven in substantial part by significant increases in property taxes, declining sales, and increases to rate base, largely due to increases in net plant and depreciation.⁴³ In general, the increases in net plant are needed to improve water quality and system reliability, including the expansion of the Company's water main replacement program to address an aging distribution system, tank and well replacements or improvements, replacement of pH adjustment systems, and various system upgrades to improve the small water systems recently acquired by the Company. The increased revenue requirements resulting from those factors are partially offset by a productivity adjustment, refunds to

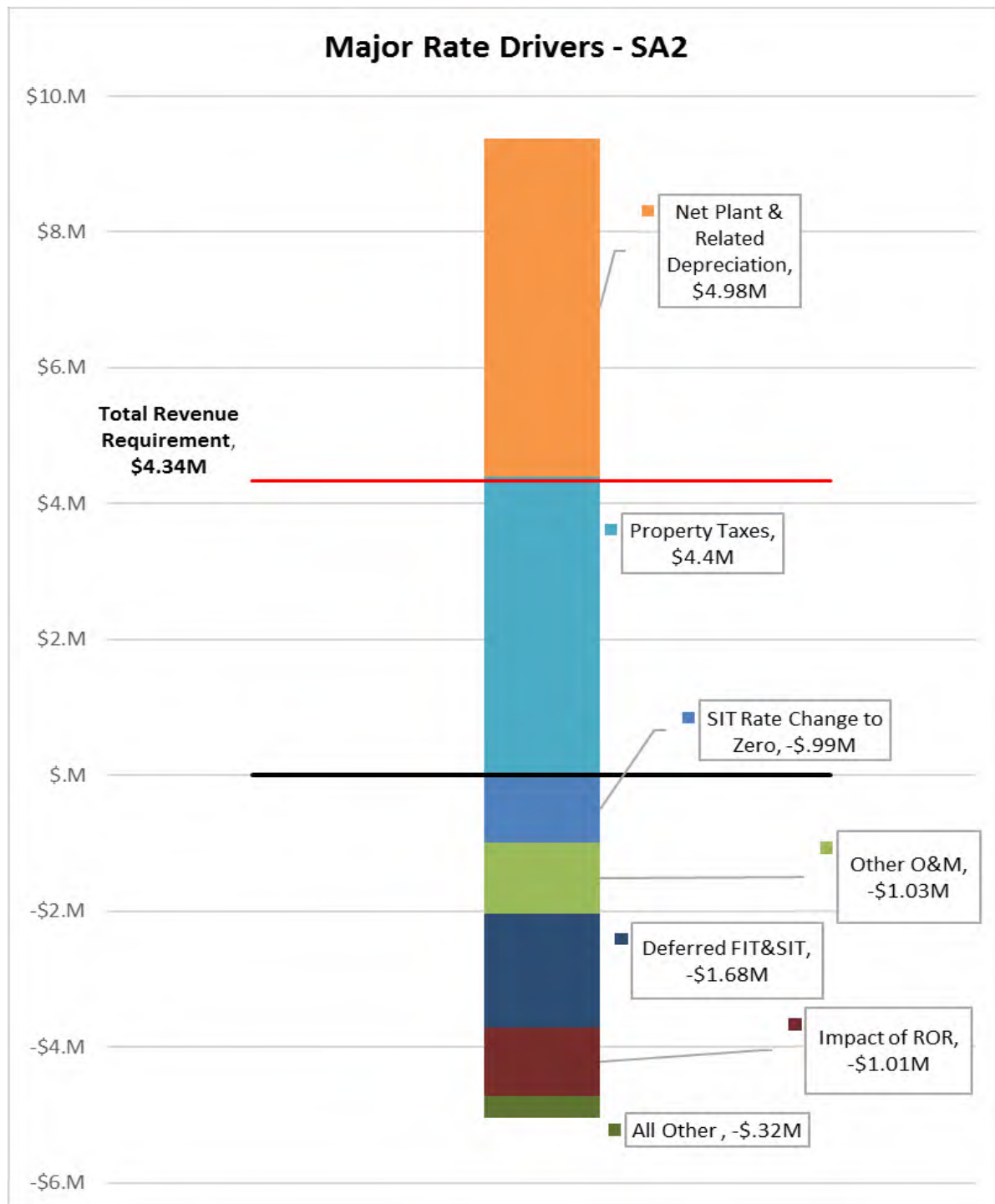
⁴³ Exh. 4, Bruce Direct Testimony, pp. 9, 20; Exh. 41, Joint Proposal, Appendix A, Schedule A-1.1 - A-1.4, p. 5 and Schedule A-2.1 - A-2.4, p. 5, and Appendix D; Exh. 42, Response to ALJ Question 4; Tr. 282-283.

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ratepayers resulting from NYAW's designation as a Qualified New York Manufacturer (QNYM), and reductions to operations and maintenance (O&M) expenses, the cost of capital, and State income tax liability.⁴⁴ The major rate drivers are summarized by service area in the charts below.

⁴⁴ As explained further in the section addressing the QNYM credit, the revenue requirement impact resulting from recent legislation amending certain provisions of the tax law will be addressed in a separate proceeding under Case 17-W-0232.





In pre-filed testimony, NYAW treated its revenue requirement request as incremental to any amounts previously authorized for recovery under current rate plans through base rates, SIC surcharges, and surcharges allowed under existing RAC and PTR provisions. The Company originally forecasted that it would be entitled under current rate plans to collect as surcharges, for the rate year ending March 31, 2018, RAC deferrals in the approximate amount of \$5.4 million for SA1 and \$111,000 for SA2, and PTR deferrals in the approximate amount of \$8.74 million for SA1 and \$3.68 million for SA2.⁴⁵ NYAW's request of a total incremental revenue requirement increase of approximately \$8.5 million (8.3%), representing an incremental increase of approximately \$5.8 million (8.4%) for SA1 and \$2.7 million (8.12%) for SA2, thus excluded those forecasted RAC and PTR surcharges, the accrued SIC surcharge amounts discussed earlier, and the amounts previously authorized for recovery through base rates under current rate plans.⁴⁶

After Staff proposed various adjustments to NYAW's requests, Staff initially recommended an overall revenue requirement increase for SA1 of approximately \$43,000 and an overall revenue requirement decrease for SA2 of approximately \$891,000.⁴⁷ In its Statement in Support of the Joint Proposal, Staff now notes that, with certain corrections and updates to its direct case, its one-year litigation position would be to recommend revenue requirement increases in the approximate amount of \$2.59 million representing \$1.73 million for SA1 and \$864,000 for SA2.⁴⁸

⁴⁵ Exh. 22, FXS-9.1 and 9.2.

⁴⁶ Exh. 22, FXS-9, FXS-9.1 and FXS-9.2.

⁴⁷ Exh. 72, GRL-2, Schedule A, p. 8, and Schedule I, p. 8.

⁴⁸ Staff Statement in Support, p. 8.

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In rebuttal, NYAW revised the amounts it asserted it would have been entitled to recover under current rate plans, changing its total incremental revenue requirement increase to approximately \$8.7 million, representing an increase of approximately \$6.7 million for SA1 and \$2 million for SA2.⁴⁹ In doing so, NYAW modified the forecasted amounts that it would be entitled to collect as surcharges under its current rate plans for RAC deferrals to approximately \$5 million for SA1 and \$735,000 for SA2, and for PTR deferrals to approximately \$8.65 million for SA1 and \$3.63 million for SA2.⁵⁰

The JP includes those forecasted PTR deferral amounts and modified forecasted RAC deferral amounts of approximately \$5.15 million and for SA1 and \$0.22 million for SA2. Therefore, as stated above and as noted by both the Company and Staff, when compared to the amounts NYAW would have been entitled to recover through base rates and surcharges under rate plans, the JP provides NYAW with a total incremental revenue requirement increase in Rate Year 1 of approximately \$3.6 million or 3.5%. That number represents the portion of base revenue increases that do not relate to the revenue neutral shift of SIC surcharges into base rates or amounts previously authorized for recovery under current rate plans.

The Company notes that the proposed incremental increases are significantly lower than it sought originally but higher than the total amount recommended by Staff for both service areas combined. Stating that the JP adopts many of the adjustments proposed by Staff in testimony, the Company maintains that the proposed revenue requirement increases reflect a reasonable compromise that provides customers with a

⁴⁹ Exh. 39, FXS-1R.

⁵⁰ Exh. 39, FXS-2.1R and FXS-2.2R.

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significant value and the Company with the funds necessary to allow it to continue to provide safe, adequate and reliable service.⁵¹ While Staff acknowledges that the base rate increases recommended for NYAW are substantial, it agrees with the Company that rates should be increased to allow the Company to continue to appropriately serve its customers.⁵²

CAWS, NMCA and others through written and public comments oppose the proposed rate increases. Their main assertions in this regard are that (1) the Company does not provide the quality of water or service that warrants an increase; (2) rates already are too high, especially when compared to rates of nearby municipal water systems; (3) allowing the Company to recover property taxes through rates is unconstitutional because nearby municipal water systems do not recover property taxes from their customers; and (4) the Company's proposed property tax expenses do not reflect reductions to property taxes resulting from successful property tax challenges.

As discussed later in this order, property taxes are a typical cost of providing utility service. Moreover, the JP includes a number of projects to address water quality and pressure concerns, including investments in water treatment and delivery systems and the replacement of lead service lines and aging water mains. The JP also addresses customer service concerns by including a customer service performance incentive mechanism, which subjects NYAW to potential negative revenue adjustments for poor customer service. We find that the proposed annual increases are needed for the Company to maintain safe and reliable service and earn a reasonable return on its

⁵¹ NYAW Statement in Support, pp. 7-8.

⁵² Staff Statement in Support, p. 7.

investments. We also find the JP's recommended levelization of the annual increases will moderate the resulting customer rate increases to the maximum extent practicable.

Operations and Maintenance Costs

The JP would provide the following amounts for O&M expenses:

O&M Expenses (\$ millions)		
Rate Year	SA1	SA2
1	\$21.27	\$10.83
2	\$21.56	\$10.93
3	\$21.79	\$11.07
4	\$23.78	\$13.09

For the rate year ending March 31, 2018, NYAW had proposed O&M expenses of approximately \$22.62 million for SA1 and \$12 million for SA2.⁵³ According to the Company, the total of those projected O&M expenses were "approximately \$1.9 million less than the last authorized levels for all districts combined."⁵⁴ NYAW also explained the steps it has taken to manage O&M expenses, including volume purchasing; reducing its fleet of vehicles; as well as various energy, water and labor efficiency measures.⁵⁵ After making certain adjustments to NYAW's proposed amounts, Staff recommended O&M expenses of approximately \$21.33 million for SA1 and \$10.67 million for SA2.⁵⁶ In rebuttal, NYAW reduced its requested O&M expenses to

⁵³ Exh. 22, FSX-8.1, p. 2 and FSX-8.2, p. 2.

⁵⁴ Exh. 4, Bruce Direct Testimony, p. 11.

⁵⁵ Exh. 4, Bruce Direct Testimony, pp. 12-17 and Exh. 8, Kern Direct Testimony, pp. 5-8.

⁵⁶ Exh. 72, GRL-2, Schedule A, p. 2 and GRL-2, Schedule A, p. 2.

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approximately \$21.99 million for SA1 and \$10.94 million for SA2.⁵⁷

The O&M expenses provided for in the JP for Rate Year 1 are less than the amounts proposed in testimony by NYAW and Staff for SA1 and within the range of the amounts NYAW and Staff proposed for SA2. Moreover, as compared to the O&M expenses approved under the Company's existing rate plans, the O&M expenses proposed in the JP reflect a decrease of approximately \$1.69 million for SA1 and \$1.03 million for SA2. The O&M expenses included in the Joint Proposal are unopposed, more favorable than or within the range of potential litigated outcomes, appear reasonable, and will mitigate the proposed revenue increases in Rate Year 1. We therefore adopt the proposed O&M expenses.

Productivity Adjustment

Under the Joint Proposal, the forecast budget for labor, pensions, other post-employment benefits (OPEBs) and payroll tax on which rates are set is reduced by a two percent productivity adjustment in all four rate years.

Initially, NYAW did not include a productivity adjustment in its revenue requirement. Staff recommended a two percent productivity adjustment, consisting of the "standard 1% productivity adjustment ... imputed to reflect gains from unidentified sources" and an additional one percent adjustment to reflect savings and efficiencies expected from the consolidation of NYAW's various water districts and other programs and initiatives NYAW proposed.⁵⁸ Applying the two percent adjustment against each district's total rate year labor, employee benefits, pensions, OPEBS and payroll tax

⁵⁷ Exh. 40, FSX-3.1R and FSX-3.2R.

⁵⁸ Exh. 67, Keymel Testimony, pp. 6-7.

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expenses, Staff recommended a downward adjustment to O&M expenses for SA1 in the amount of \$183,161 and for SA2 in the amount of \$76,863.⁵⁹ In rebuttal, NYAW maintained that a productivity adjustment was not warranted, because not all potential efficiencies from new programs would "necessarily equate to a reduction in costs."⁶⁰ Further, NYAW asserted that, rather than being subject to a productivity adjustment, it should be given an incentive to encourage it to continue to acquire and manage "small and troubled water systems."⁶¹

NYAW now states in support of the JP that the proposed two percent productivity adjustment represents a "direct benefit to customers" in helping to reduce the rate increase that would otherwise result.⁶² No other party addresses the productivity adjustment proposed in the JP.

Although the Commission has generally imputed a one percent productivity adjustment, the higher percentage here is unopposed and not without precedent.⁶³ Moreover, the two percent adjustment is appropriate given the consolidation of NYAW's nine water districts and various capital projects proposed here. As NYAW points out, the two percent productivity adjustment

⁵⁹ Id., p. 9.

⁶⁰ Exh. 39, Simpson Rebuttal Testimony, p. 16.

⁶¹ Id., pp. 17-18.

⁶² NYAW Statement in Support, p. 8.

⁶³ Cases 16-G-0058 et al., KeySpan Gas East Corporation et al. - Rates, Order Adopting Terms of Joint Proposal and Establishing Gas Rate Plans (issued December 16, 2016), pp. 39-40; Case 08-E-0539, Consolidated Edison Company of New York - Rates, Order Setting Electric Rates (issued April 24, 2009), pp. 36-38; Case 93-E-1123, Long Island Lighting Company - Rates, Order Adopting Recommended Decision with Modifications (issued July 6, 1995), pp. 27-29.

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proposed in the JP benefits customers by reducing the Company's O&M expenses by approximately \$184,385 for SA1 and \$77,434 for SA2 in Rate Year 1, with further reductions to the Company's O&M expenses in the remaining rate years.⁶⁴ Accordingly, we adopt the two percent productivity adjustment.

Capital Structure, Return on Equity and Overall Rate of Return

Pursuant to Section III.C of the Joint Proposal, the revenue requirements for each of the four years of the proposed rate plan would be based on a hypothetical capital structure with a 46% common equity ratio and a 9.1% return on equity (ROE), with an overall rate of return (ROR) of 6.56%.

In pre-filed testimony, NYAW had proposed that its common equity ratio used for rate-setting be increased from the actual amount of 45.66% as of December 31, 2015 to 48% based upon its pro forma stand-alone capital structure for the rate year ending March 31, 2018.⁶⁵ Noting that NYAW was not adequately ring-fenced from its parent company AWW and other AWW affiliates, a necessary condition in order to allow for consideration of NYAW's stand-alone capital structure, Staff recommended a 45.1% common equity ratio based on AWW's consolidated capital structure.⁶⁶ Staff asserted that the recommended 45.1% common equity ratio was reasonable and that together with the other elements of Staff's recommendations would produce financial metrics consistent with an investment-grade bond rating.⁶⁷ In rebuttal, NYAW disagreed with Staff's

⁶⁴ Exh. 41, Joint Proposal, Appendix A, Schedules A-1.1, p. 2, A-1.2, p. 2, A-1.3, p. 2, A-1.4, p. 2, A-2.1, p. 2, A-2.2, p. 2, A-2.3, p. 2 and A-2.4, p. 2.

⁶⁵ Exh. 21, Simpson Direct Testimony, p. 24; Exh. 22, FXS-10, p. 1.

⁶⁶ Exh. 59, Duah Testimony, pp. 18-23.

⁶⁷ Id., p. 28.

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recommendation, maintaining that it was appropriate for it to rely on its stand-alone capital structure to arrive at a proposed common equity ratio of 48%.⁶⁸

Although the common equity level proposed in Section III.C is slightly higher than Staff's one-year litigated position, Staff maintains that the proposal is reasonable given that AWW may find it necessary to modestly strengthen its balance sheet as it embarks on substantial infrastructure investments over the next four years. Staff also supports the 46% level because it is identical to the 46% common equity ratio recently approved for Suez Water New York Inc., which is a similarly-situated water company in Staff's view.⁶⁹ NYAW points out that the proposed capital structure represents a fair compromise between the litigation positions taken by it and Staff in pre-filed testimony.

No party objects to the proposed 46% common equity ratio. As Staff notes, it is proper and consistent with the Commission's practice to focus the development of the equity ratio on the parent's capital structure given the lack of ring-fencing. In the context of this four year settlement, the 0.9% modest upward adjustment to the equity ratio is appropriate. The proposed common equity ratio is comparable to equity ratios approved by the Commission for similarly-situated water companies and would produce lower overall revenue requirements than the common equity level initially proposed by NYAW. We find the proposed capital structure containing the 46% equity ratio to be reasonable.

⁶⁸ Exh. 39, Simpson Rebuttal Testimony, pp. 21-27.

⁶⁹ Staff's Statement in Support, pp. 10-11, citing Case 16-W-0130, Suez Water New York Inc. - Rates, Order Establishing Rate Plan (issued January 24, 2017).

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The Joint Proposal's 9.1% ROE is significantly lower than NYAW's proposed ROE of 10.75%⁷⁰ and modestly higher than Staff's recommended ROE of 8.55%.⁷¹ NYAW states that the 9.1% ROE "reflects the current low interest rate environment, which may not continue in the future."⁷² It also asserts that it agreed to the 9.1% ROE in the interests of settlement and because such an ROE is "sufficiently high to attract necessary capital" and adequately compensate investors for the additional business and financial risks presented by a multi-year rate plan, while remaining sufficiently low enough to protect ratepayer interests. Staff similarly states that the proposed ROE includes an upward adjustment to Staff's litigated position to account for the higher risk to the utility inherent in a multi-year rate plan.⁷³

CAWS argues that NYAW does not deserve a "9.75% profit," asserting that shareholders are not subjected to any increased risk as a result of this multi-year rate plan.⁷⁴ However, the Commission has consistently recognized the increased risk to utilities inherent in multi-year rate plans and have endorsed appropriate adjustments to ROEs to reflect

⁷⁰ Exh. 12, Moul Direct Testimony, p. 1.

⁷¹ Exh. 57, Ahmed Testimony, p. 3.

⁷² NYAW Statement in Support, pp. 8-9.

⁷³ Staff Statement in Support, p. 10.

⁷⁴ CAWS Reply Statement in Opposition, p. 3. CAWS's reference to a "9.75 profit" appears to relate to the JP's proposed Earnings Sharing Mechanism discussed later in this order, rather than to the 9.1% ROE and 6.56% ROR discussed in the text above.

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such risks.⁷⁵ As Staff points out, "investors reasonably require higher returns for locking up their investment for an extended period of time," given the additional financial risk that economic and utility operating conditions may change during a four-year rate plan.⁷⁶

In this case, we determine that the proposed 9.1% ROE is appropriately adjusted to reflect the increased risk to NYAW as a result of the longer term rate plan that is proposed here. The ROE was derived by relying on our well-established methodology of employing two-third/one-third weighting of the discounted cash flow model and the capital asset pricing model applied to a surrogate group of companies. In light of the additional business risk and the need to compensate investors for additional financial risk when entering into a multi-year agreement, the agreed to 9.1% ROE is a reasonable outcome relative to Staff's initial proposal, and underscores NYAW's willingness to compromise in the context of a comprehensive settlement. Overall, the ROR is reasonable in light of the

⁷⁵ Case 16-W-0130, Suez Water New York Inc. - Rates, Order Establishing Rate Plan (issued January 24, 2017), pp. 81-83 (approving a 9.0% ROE in a three-year rate plan); Cases 16-G-0058, KeySpan Gas East Corporation et al. - Rates, Order Adopting Terms of Joint Proposal and Establishing Gas Rate Plans, p. 33 (approving a joint proposal that established rates reflecting a 9.0% ROE); Case 15-G-0382, St. Lawrence Gas Company, Inc. - Rates, Order Establishing Multi-Year Rate Plan (issued July 15, 2016) (adopting a 9.0% ROE in a three-year rate plan); Cases 15-E-0283, et al., New York State Electric & Gas Corp. - Rates, Order Approving Electric and Gas Rate Plans in Accord with Joint Proposal (issued June 15, 2016) (adopting 9.0% ROE in a three-year rate plan); 11-W-0200, Long Island Water Corporation - Rates, Order Determining Revenue Requirement and Rate Design (issued March 20, 2012), pp. 15-16 (approving a 9.65% ROE in a three-year rate plan).

⁷⁶ Staff Statement in Support, p. 10.

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risks faced by the Company, current investor requirements, and the need to keep rates as low as possible while ensuring that the Company can provide safe, adequate and reliable service.

Capital Expenditures

Capital improvements to utility plant are one of the major rate drivers in this proceeding. Over the course of the proposed four-year rate plan, there will be a net increase, taking into consideration plant retirements, of \$117,650,560 of utility plant in service with a net investment of \$75,802,709 in SA1 and \$41,847,853 in SA2.⁷⁷ Investments in capital expenditures and associated depreciation represent approximately 37 percent of the revenue increase in Rate Year 1, 62 percent in Rate Year 2, 59 percent in Rate Year 3 and 29 percent in Rate Year 4.

The Joint Proposal provides a list of utility plant additions that the Signatory Parties anticipate to be put into service over the course of the rate plan.⁷⁸ Such projects include investments in water production, treatment and delivery systems as well as investment in building improvements, vehicles, equipment and software systems. The Joint Proposal

⁷⁷ Exh. 41, Joint Proposal, Appendix D, pp. 1-3. This amount excludes projects associated with the proposed System Improvement Charge.

⁷⁸ Exh. 41, Joint Proposal, Appendix D.

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provides annual targets for UPIS. The UPIS targets for reconciliation are shown on the table, below.⁷⁹

Rate Year	SA1	SA2
1	\$313,230,941	\$136,840,850
2	\$335,318,842	\$147,327,545
3	\$354,073,674	\$159,522,319
4	\$371,682,831	\$169,359,594

If, at the end of the rate plan, NYAW has not met the cumulative UPIS targets identified, the revenue requirement impact of the Company's underspending would be deferred for the benefit of customers.⁸⁰ If NYAW spends in excess of these amounts, there would be no deferral; ratepayers would not be responsible for any capital investments above the cumulative target levels during the rate plan.

The terms of the Joint Proposal would also require NYAW to maintain an average annual level of investment in main replacements and associated infrastructure of \$14.287 million during the course of the rate plan. Like the UPIS reconciliation mechanism described above, if NYAW has not met its cumulative required spending level on main replacements at the end of the rate plan, the revenue requirement impact of the shortfall would be deferred for the benefit of customers.⁸¹ Should NYAW spend more than the target amounts on main replacements, there would be no deferral.

⁷⁹ Exh. 41, Joint Proposal, p. 6 and Tr. 297.

⁸⁰ Exh. 41, Joint Proposal, pp. 6-7 and Tr. 301. Projects associated with the proposed System Improvement Charge would not count toward target and actual UPIS.

⁸¹ Exh. 41, Joint Proposal, p. 7 and Tr. 303-304.

The proponents of the Joint Proposal anticipate NYAW will make further acquisitions of water systems during the proposed rate plan. Pursuant to the Joint Proposal terms, newly acquired systems, and any capital investments made to any newly acquired systems, would be excluded from the calculation of actual UPIS and the UPIS targets.⁸² The provisions of the Joint Proposal would authorize NYAW to request recovery of capital investments in an acquired system in the context of an acquisition petition. In that instance, NYAW would request to delay recording depreciation expense relating to the capital investments until the next base rate case proceeding. In the interim, carrying costs would be applied to the capital investment at the Other Customer Provided Capital Rate established by the Commission.⁸³ Thus, existing ratepayers would not pay for any capital investment in a newly acquired system over the course of the rate plan.⁸⁴

In support of the proposal, NYAW heralds the benefits of additional capital spending on infrastructure to improve its system, specifically noting benefits of the accelerated main replacement program. The Company opines that proactively replacing aging infrastructure will benefit ratepayers in improved water quality, reductions in leakage and avoided costs of repairing main breaks.⁸⁵ According to Staff, UPIS and the main replacement reconciliation mechanisms will protect ratepayers from paying for projected capital expenditure

⁸² Tr. 306.

⁸³ Exh. 41, Joint Proposal, p. 8.

⁸⁴ Tr. 306.

⁸⁵ NYAW Statement in Support, pp. 9-10.

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projects that are not realized by NYAW during the course of the rate plan.⁸⁶

For its part, CAWS contends that infrastructure improvements in the last base rate proceeding were not implemented, but that rates were not reduced as a result. It disputes that infrastructure improvements included in the Joint Proposal will be implemented.⁸⁷ CAWS opines that capital improvements are needed, but, pursuant to the terms of the Joint Proposal, there is no assurance to ratepayers that specific projects will be implemented.⁸⁸

Staff and NYAW argue that CAWS's concerns are ill-founded, because the UPIS reconciliation mechanism protects ratepayers from any underspending on capital projects.⁸⁹ The Signatory Parties state that the list of identified capital projects are those that are anticipated, not proscribed. Staff argues that NYAW must be afforded flexibility in prioritizing capital projects to address water supply or infrastructure issues as they arise.⁹⁰

We find that the capital expenditure plan included in the budget is reasonable and will allow NYAW continue to make strides in improving NYAW's system to the benefit of customers, both in the form of improved water quality and service. In the litigated case, with the exception of the geothermal project, there were no great disputes with regards to capital spending.

⁸⁶ Staff Statement in Support, p. 18.

⁸⁷ CAWS Statement in Opposition, pp. 2, 6-8, and 12-13.

⁸⁸ Ibid., p. 13. CAWS's assertions related to the DeMott Avenue water tank project are discussed in the SIC Section of this order.

⁸⁹ Staff Statement in Support, pp. 17-18; Staff Reply Statement p. 5; NYAW Statement Reply Statement, pp. 6-7.

⁹⁰ Staff Reply Statement, p. 5.

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With the exceptions of the increased spending for main replacement and the adjustment to exclude the geothermal project, Staff was supportive of the Company's proposed capital budget for the rate year and found the proposed projects necessary for the continued safety and reliability of NYAW's system.⁹¹ Based on this record, we find that the level of investment included in the Joint Proposal is sufficient to allow NYAW to continue to implement necessary improvements to its system.

The rate plan also includes sufficient protections to ensure that ratepayers will not be harmed if NYAW fails to make the level of improvements included in the proposed rate plan. While NYAW initially recommended reconciliation in both under- or over-spending,⁹² the UPIS reconciliation mechanism recommended by the Joint Proposal is consistent with Staff's litigation position that recommended a downward-only adjustment.⁹³ While CAWS raised concerns that ratepayers may be harmed by underspending, we find that the UPIS reconciliation will protect ratepayers from this situation. This mechanism ensures that NYAW is making the investment that it commits to in the Joint Proposal or, if it does not, that ratepayer funds are put aside, earning interest, for future disposition by the Commission. CAWS points out that needed projects may not be constructed, or may be delayed, over the course of the rate plan. However, NYAW should be afforded the ability to adjust to unforeseen circumstances over the course of the rate plan and use its judgment to triage projects to ensure the most needed projects

⁹¹ Exh. 63, Staff Infrastructure Panel Testimony, pp. 8-9.

⁹² Exh. 21, Simpson Direct Testimony, p. 9.

⁹³ Exh. 63, Staff Infrastructure Panel Testimony, pp. 4-5.

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are addressed, whether or not they are at the front of the planning queue.

We also find the target level of spending for main replacements contained in the Joint Proposal to be reasonable. Customers and parties to this proceeding have voiced concerns with aspects of NYAW's service,⁹⁴ including the inconvenience and costs related to main breaks and frustration with water pressure and quality. The capital improvement plan will make strides in addressing those concerns. The level of spending on main replacements is consistent with the recommendation of Staff in its testimony that was supported by NYAW.⁹⁵ A dedicated budget for mains within the capital program will ensure that NYAW is focused on addressing this component of its system that will have an impact on customers in the form of improved water service. Focus on mains and services will reduce levels of lost water from deteriorated pipes, lower costs associated with emergency repairs or replacement and should also improve water pressure.

The provisions of the Joint Proposal that exclude investment in newly acquired water systems from the UPIS balance is in the interest of ratepayers. The Commission's Statement of Policy on Acquisition Incentive Mechanisms for Small Water Companies (AIM Policy) encourages larger water utilities to acquire small, non-viable water systems.⁹⁶ We encourage large, more stable water companies to continue to procure troubled systems to ensure that ratepayers of those systems receive safe

⁹⁴ Exh. 91, Borecky Testimony, pp. 7-8.

⁹⁵ Exh. 63, Staff Infrastructure Panel Testimony, p. 12; Exh. 30, Kilpatrick Rebuttal Testimony, p. 2.

⁹⁶ Case 93-W-0962, Small Water Utilities - Acquisition and Merger, Statement of Policy on Acquisition Incentive Mechanisms for Small Water Companies (issued August 8, 1994).

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and adequate service at just and reasonable rates. The provisions of the Joint Proposal would foster NYAW's efforts to pursue such acquisitions, advancing our policy goals, while at the same time maintaining rate stability during the rate plan.⁹⁷ This ensures that existing customers will not face additional costs while they are adjusting to the new rate plan, which, for some customers, will represent significant bill impacts.

In sum, the proposed capital improvement plan balances the needs of ratepayers and NYAW, is reasonable and is in the public interest.

Revenue, Production Costs and Property Tax Reconciliation Mechanisms

Section III.E of the Joint Proposal includes provisions that would create a combined Revenue, Production Costs and Property Tax Reconciliation Mechanism.⁹⁸ NYAW currently has such mechanisms in its three largest water districts.⁹⁹ NYAW would continue the mechanisms, and implement them across its service areas, updated for new target levels, shown on the table, below.

⁹⁷ Tr. 306.

⁹⁸ The property tax reconciliation is discussed in detail in the Property Tax Section of this order.

⁹⁹ Tr. 310-311.

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Rate Year 1	Metered Revenues	\$55,223,985	SA 1
		30,455,665	SA 2
	Fuel, Power and Chemicals	4,645,605	SA 1
		2,029,824	SA 2
	Property Taxes	22,226,002	SA 1
		10,382,025	SA 2 - Merrick
3,298,216		SA 2 - Sea Cliff	
Rate Year 2	Metered Revenues	\$64,664,943	SA 1
		33,275,164	SA 2
	Fuel, Power and Chemicals	4,833,388	SA 1
		2,041,756	SA 2
	Property Taxes	23,115,042	SA 1
		10,797,306	SA 2 - Merrick
3,430,145		SA 2 - Sea Cliff	
Rate Year 3	Metered Revenues	\$69,560,986	SA 1
		36,089,101	SA 2
	Fuel, Power and Chemicals	4,865,415	SA 1
		2,053,753	SA 2
	Property Taxes	24,039,644	SA 1
		11,229,198	SA 2 - Merrick
3,567,351		SA 2 - Sea Cliff	
Rate Year 4	Metered Revenues	\$73,099,385	SA 1
		38,441,850	SA 2
	Fuel, Power and Chemicals	4,845,464	SA 1
		2,065,531	SA 2
	Property Taxes	25,001,230	SA 1
		11,678,366	SA 2 - Merrick
\$3,710,045		SA 2 - Sea Cliff	

The differences between the levels of actual revenues and production costs and property taxes and the forecasted target amounts, identified above, would be deferred and the difference recovered or refunded through the RPCRC on an annual basis. At the conclusion of each rate year, NYAW would file a reconciliation within 60 days, along with implementing tariff leaves. The net surcharge or credit would then go into effect 45 days following the submittal, unless Staff submits a letter

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to NYAW advising that the reconciliation amounts require adjustment.

The surcharge or surcredit would be applied to all metered customers' bills through a percentage surcharge or credit based on the projected revenues from metered water sales in the succeeding rate year. To calculate the surcharge or surcredit, NYAW would divide the net of the metered revenues and production costs for the prior year by the projected meter revenues for the following rate year and then the resulting percentage applied to metered bills.¹⁰⁰ The recovery or refund associated with a rate year target would be fully recovered or refunded in the succeeding rate year.

The provisions of the Joint Proposal would continue these mechanisms beyond the term of the proposed rate plan at the Rate Year 4 targets, until new levels are set by the Commission in its next rate proceeding. If NYAW does not seek rate relief to be effective by April 1, 2021, monthly target levels would be established for calculating the RPCRC for any period of time not equivalent to a 12-month rate year. In that instance, monthly target levels would be set using the monthly averages of metered revenue for the most recent five years applied to the Rate Year 4 target level.

In pre-filed testimony, NYAW and Staff had agreed that having adjustment mechanisms pertaining to revenues, production costs and property taxes in each of the service areas is appropriate.¹⁰¹ They also agreed that the return or recovery of any funds pursuant to a reconciliation be returned over the

¹⁰⁰ Tr. 313-314.

¹⁰¹ Exh. 6, DeStefano Direct Testimony, p. 19 and Exh. 77, Staff Rates Panel Testimony, pp. 39-40.

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course of one rate year.¹⁰² The main point of contention between the parties in their litigated cases, with regards to the mechanism, related to production costs and how they should be recovered if the actual production costs came in above the forecasted level. In that instance, Staff recommended that NYAW recover 95 percent of costs over the target from ratepayers, rather than full recovery. According to Staff, this would motivate the Company to keep costs down.¹⁰³ NYAW maintained that production costs are largely out of its control and that, if less than full recovery of costs were authorized, it should coincide with the implementation of a conservation plan, citing customer usage as the main driver of variations in production cost levels.¹⁰⁴ NYAW also suggested that it should be authorized to retain any demonstrated savings in production costs.¹⁰⁵

In its pre-filed case, Staff also recommended that, for purposes of the reconciliation filing, NYAW be directed to reduce its actual treatment costs for power and chemicals by the treatment costs associated with the volume of water lost due to the geothermal project's water usage. According to Staff, its recommendation would ensure that NYAW does not receive recovery of the incremental water treatment costs of the geothermal project from ratepayers.¹⁰⁶ While the parties took opposing positions regarding the geothermal pilot, as discussed in this order, this recommendation was not addressed by the Company in its rebuttal.

¹⁰² Exh. 6, DeStefano Direct Testimony, p. 19 and Exh. 77, Staff Rates Panel Testimony, p. 40.

¹⁰³ Exh. 77, Staff Rates Panel Testimony, pp. 40-41.

¹⁰⁴ Exh. 26, DeStefano Rebuttal Testimony, p. 15.

¹⁰⁵ Id.

¹⁰⁶ Exh. 75, Staff Policy Panel Testimony, pp. 8-10.

With regards to the targets themselves, the targets fall between the Signatory Parties' litigation positions for metered revenues and fuel, power and chemicals. In pre-filed testimony NYAW and Staff put forth competing methodologies for projecting customer usage.¹⁰⁷ This calculation would factor into both the forecast of metered revenues as well as production costs. Both parties agreed usage is declining. However, they disputed the rate of declining consumption.¹⁰⁸

In its initial testimony, NYAW projected the proposed rate year metered consumption revenue for SA1 as approximately \$69 million and SA2 as \$33.6 million.¹⁰⁹ These projections were based on present rate year sales forecasts totaling \$45.8 million in SA1 and \$27 million in SA2.¹¹⁰ Of those operating revenues, fuel, power and chemical costs were projected for the rate year at approximately \$4.7 million for SA1 and \$2 million for SA2.¹¹¹

Staff disputed those amounts in its testimony. With regard to metered consumption revenues, Staff agreed with the Company's forecasted customer count;¹¹² however, it argued that the Company erred in its calculation of projected usage.¹¹³ It faulted NYAW's declining usage methodology, which applied NYAW's

¹⁰⁷ Exh. 19, Roach Direct Testimony, pp. 5-27 and Exh. 77, Staff Rates Panel Testimony, pp. 7-23.

¹⁰⁸ Exh. 37, Roach Rebuttal Testimony, pp. 1-20 and Exh. 77, Staff Rates Panel Testimony, pp. 7-18.

¹⁰⁹ Exh. 6, DeStefano Direct Testimony, pp. 3-6; Exh. 22, FXS-9.1 and FXS-9.2.

¹¹⁰ Exh. 22, FXS-9.1 and FXS-9.2.

¹¹¹ Exh. 7, Hawn Direct Testimony, pp. 4-5 and Exh. 22, FXS-8.1, p. 2 and FXS-8.2, p. 2.

¹¹² Exh. 77, Staff Rates Panel Testimony, p. 6.

¹¹³ Ibid., pp. 7-18.

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analysis of the Lynbrook district to its entire service territory and argued that the analysis should be based on actual data.¹¹⁴ Staff presented an alternate methodology.¹¹⁵ As a result, Staff recommended adjustments to sales revenues that would decrease sales revenues in SA1 by approximately \$186,000 and increase sales revenues in SA2 by approximately \$963,000.¹¹⁶ For SA1, Staff argued present rate year sales should be forecast at \$45.6 million and, for SA2, \$30 million.¹¹⁷ With regards to production costs, Staff generally agreed with the Company's methodology but recommended several changes that resulted in a combined increase to the forecast power, fuel and chemical costs of approximately \$420,000.¹¹⁸

In its rebuttal testimony, NYAW argued that Staff's analysis on declining consumption was flawed on a variety of bases and maintained that NYAW's original position should be maintained.¹¹⁹ With regards to production costs, NYAW agreed with some aspects of Staff's adjustment, but disagreed with the application of a by-district non-revenue water percentage.¹²⁰ NYAW recommended applying a three-year average non-revenue water percentage by service area.¹²¹ The Company also disputed Staff's position regarding fuel costs.¹²²

¹¹⁴ Ibid., p. 9.

¹¹⁵ Exh. 77, Staff Rates Panel Testimony, pp. 18-20 and Exh. 78, SRP-2.

¹¹⁶ Exh. 78, SRP-5.

¹¹⁷ Exh. 78, SRP-6.

¹¹⁸ Exh. 77, Staff Rates Panel Testimony, pp. 26-30 and Exh. 78, SRP-3.

¹¹⁹ Exh. 37, Roach Rebuttal Testimony, p. 1-18.

¹²⁰ Exh. 28, Hawn Rebuttal Testimony, p. 3.

¹²¹ Id.

¹²² Ibid., pp. 4-5.

At the evidentiary hearing, the Signatory Parties indicated that the Joint Proposal represented a compromise of the Staff and Company position with regards to declining consumption and, therefore, the sales forecast and resulting revenue targets. While they characterized their analyses as using different methodologies, they recognized the Joint Proposal as reaching a mid-point between the parties' positions.¹²³ The Signatory Parties also reached compromise with regards to production, chemical and fuel costs.

The mechanism put forth in the Joint Proposal memorializes the agreements reflected in the Signatory Parties' litigated cases and reaches compromise on disputed aspects. With the exception of the property tax element, separately addressed in this order, the mechanism is unopposed by the parties. We find that the mechanism, as now proposed, balances both the needs of the Company and its ratepayers. Customers can be assured that, if revenues exceed what was expected, they receive a benefit. If production costs are less than forecasted, customers will be compensated the savings. For the Company, its financial health is protected over the course of the rate plan by ensuring that it is compensated for projected revenues and it can be sure that production costs, prudently incurred, are recovered.

A particular benefit of this mechanism is the expediency of prompt recovery of the under or over-collected amounts, avoiding a prolonged deferral on NYAW's books until rates are next set. We also find this mechanism to be equitable in that, by surcharging or crediting any amounts quickly, the mechanism fairly distributes amounts to customers, drastically reducing the likelihood of intergenerational inequities. For

¹²³ Tr. 277.

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the reasons stated, we find that the revenue and production cost reconciliation mechanism is reasonable and in the public interest.

System Improvement Charge

NYAW currently has a SIC mechanism in place with respect to certain of its water districts.¹²⁴ Section III.F of the Joint Proposal would allow NYAW to continue the use of the SIC mechanism and extend its application throughout NYAW's service territory. The mechanism would allow NYAW to use a surcharge to recover carrying costs (the return and depreciation expense) related to specific capital improvement projects that are identified and authorized by this order. Recovery of costs through the SIC mechanism would begin only after those projects are placed in service in Rate Years 2, 3, 4 and beyond, and after their costs have been reviewed and approved by Staff. The SIC surcharge would be assessed on customer bills and calculated pursuant to a formula set forth in the Joint Proposal, which includes a pre-tax rate of return of 8.81% applied to the net

¹²⁴ Case 11-W-0472, American Water Works Co., Inc., et al. - Acquisition of Aqua New York, Inc., Order Approving Stock Acquisition (issued April 20, 2012) (continuing SIC surcharge mechanism previously approved for the former Cambridge Water Company), pp. 11-12; Case 11-W-0200, Long Island Water Corporation - Rates, Order Determining Revenue Requirement and Rate Design (issued March 20, 2012) (continuing SIC in place for the Lynbrook district), pp. 19-20; Case 07-W-0177, Aqua New York, Inc., et al.-Acquisition of Aquarion Water Company of Sea Cliff, Order Instituting Surcharge to Recover Costs Associated with New Elevated Tank (issued December 22, 2009); see also, Case 14-W-0489, American Water Company, Inc. Petition for an Update to its System Improvement Charge, Order Adopting Terms of Joint Proposal (issued August 14, 2015) (extending the SIC in place for the Lynbrook district and updating it to include six additional capital projects); Case 02-W-1564, Sea Cliff Water Company - Water Rates, Order Establishing Rates and Authorizing Surcharge Mechanism, Name Change, and Other Tariff Revisions (issued October 22, 2003).

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rate base increase resulting from the projects plus annual depreciation expense.

The SIC mechanism would include the following nine projects, the first eight located in SA1 and the last in SA2:

PROJECT	COST (\$ millions)
Plant No. 20 - Portable Iron Removal Facility	\$1.5
Plant No. 22 - Portable Iron Removal Facility	\$1.9
Plant No. 4 - Iron Removal Facility	\$8.8
Plant No. 7 - Tank Roof Replacement	\$1.6
Plant No. 1 - Iron Removal Facility	\$9.0
Plant No. 6 - Iron Removal Facility	\$6.8
Submarine Crossing	\$2.0
Transmission Main - Baldwin Plant 12-13	\$4.0
Demott Tank and Booster Station	\$3.0
TOTAL	\$38.6

NYAW would have to make a compliance filing with the Secretary to the Commission regarding a project's in-service status within 30 days after the project has been placed in service. It also would conduct an annual reconciliation between authorized collections and actual collections related to the SIC surcharge, which would be filed with the Commission within 60 days after the end of each rate year. The filing will update the SIC surcharge rate to reflect adjustments to under-collections or over-collections. The submitted surcharge would go into effect 60 days after the submittal unless Staff submits a letter to the Company indicating that the surcharge should be adjusted. The SIC surcharge mechanism would remain in place until rates are reset, at which time all costs previously collected through the SIC would be fully accounted for and included in base rates, instead of being recovered in a SIC surcharge.

In pre-filed testimony, NYAW had requested that previously accrued revenues due under existing SIC provisions be "rolled into base rate recovery."¹²⁵ As updated on rebuttal, NYAW requested that accrued SIC revenues of approximately \$3.03 million for SA1 and \$159,000 for SA2 be included in base rates for Rate Year 1.¹²⁶ NYAW further requested that, going forward, the SIC mechanism be "reset" and expanded to apply to its other water districts to allow for increased construction of large capital projects needed throughout its service territory at a manageable cost to customers.¹²⁷ NYAW proposed that the carrying costs related to ten specific capital improvement projects be subject to the SIC.¹²⁸

Staff did not contest the amounts NYAW sought to include in base rates for accrued SIC revenues, which have been approved by Staff under the SIC mechanism approved in prior cases. Recognizing that the "SIC mechanism allows NYAW the financial flexibility to do necessary and substantial plant construction beyond the rate year without the need to file for a base rate increase," Staff agreed to the continued application of the SIC mechanism and to the Company's project construction cost estimates.¹²⁹

Staff, however, recommended that the Company's construction cost estimates be used to establish the maximum levels of capital costs allowed to be recovered under the SIC.¹³⁰ Staff also recommended that the Company be required to make

¹²⁵ Exh. 6, DeStefano Direct Testimony, p. 20.

¹²⁶ Exh. 40, FXS-2.1R and FXS-2.2R.

¹²⁷ Exh. 6, DeStefano Direct Testimony, p. 20.

¹²⁸ Exh. 10, Kirkpatrick Direct Testimony, p. 21.

¹²⁹ Exh. 63, Staff Infrastructure Panel Testimony, pp. 18-20.

¹³⁰ Ibid., p. 21.

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certain SIC compliance filings, and that various other provisions be added to the proposed SIC.¹³¹ Staff determined that the Newbridge Well Filter Plant project should not be subject to the SIC mechanism because a feasibility study was still being conducted on that project.¹³² Moreover, noting that each of the two service areas proposed by the Company has its own revenue requirement, rate base, capital budgets and forecasts, Staff disagreed with NYAW's proposal to have all of its service territory subject to a single SIC mechanism, recommending that each service area have its own designated SIC projects and surcharge.¹³³ On rebuttal, NYAW agreed with all of Staff's recommendations except for the recommendation that the Company use separate SIC mechanisms for each service area.¹³⁴

Although the Joint Proposal does not explicitly state so, NYAW and Staff now agree that each service area will be subject to separate surcharges based upon the projects that occur within the particular service area.¹³⁵ The Joint Proposal would include in base rates accrued SIC surcharge revenues of approximately \$3.03 million for SA1 and \$159,000 for SA2. The Joint Proposal also contains the compliance filing requirements and other provisions recommended by Staff, and includes the nine capital improvement projects on which NYAW and Staff agreed in pre-filed testimony.

CAWS and NMCA object to the inclusion of the Demott Tank and Booster Station Project on the ground that funding was

¹³¹ Ibid., pp. 21-23.

¹³² Ibid., pp. 19-20.

¹³³ Ibid., pp. 23-24.

¹³⁴ Exh. 30, Kilpatrick Rebuttal Testimony, p. 15.

¹³⁵ Tr. 325.

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provided in a prior case,¹³⁶ which, they maintain, should have been used to construct the booster pump station now proposed in this JP.¹³⁷ However, as the Company explained in pre-filed testimony and at the evidentiary hearing, the Demott Well and Elevated Storage Tank Project approved in Case 09-W-0237 and the Demott Tank and Booster Station proposed here are two different projects.¹³⁸ The Company constructed the Demott well but, due to community opposition, not the elevated tank, which was intended to address water pressure issues. The amounts allocated for the elevated storage tank were applied to other infrastructure improvements.¹³⁹ The project proposed in this JP involves the addition of a ground storage tank and booster station so that minimum pressure requirements can be satisfied during peak hour demands.¹⁴⁰

CAWS and NMCA also argue that the project amounts included in the SIC surcharge provision are really rate increases and should be identified as such. However, a good reason exists to include those project amounts under the SIC mechanism. SIC surcharges cannot be imposed until Staff verifies that all work on a project is completed. Accordingly, the SIC mechanism allows the Company to undertake capital projects needed to ensure safe and adequate service while protecting ratepayers against the possibility of slippage or

¹³⁶ Case 09-W-0237, New York Water Service Corp. - Water Rates, Order Establishing Three-Year Rate Plan (issued January 29, 2010).

¹³⁷ CAWS Statement in Opposition, p. 7.

¹³⁸ Exh. 30, Kilpatrick Rebuttal Testimony, pp. 12-13; Tr. 210-215, 220-221.

¹³⁹ Case 11-W-0472, American Water Works Co., Inc., et al. - Acquisition of Aqua New York, Order Approving Stock Acquisition (issued April 20, 2012), p. 13.

¹⁴⁰ Exh. 30, Kilpatrick Rebuttal Testimony, p. 13.

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delay in scheduled construction and by setting a cap on the cost of SIC projects.

The capital construction projects proposed in the SIC also will help to address customer concerns over discolored water associated with the presence of iron, improve water pressure, and make necessary infrastructure improvements. In addition, Staff testimony supports the view that the costs of the proposed construction projects are reasonable when compared to the historic costs of similar projects previously authorized by the Commission and recovered through past SICs.¹⁴¹ Accordingly, the SIC provisions are in the public interest and are adopted.

Revenue Allocation and Rate Design

Pursuant to Section III.G of the Joint Proposal, NYAW would consolidate its four existing PSC tariffs into one new tariff, PSC No. 5, which would establish uniform terms, conditions and fees over NYAW's service territory. Existing minimum usage allowances, which require Merrick and Sea Cliff customers to pay for a set volume of water regardless of usage, would be terminated and NYAW would move all metered customers to a monthly billing cycle.¹⁴² Public and Fire Service customers would be billed quarterly in arrears. The plan would eliminate the existing winter/summer rate structure and implement a year-round, inclining four-block, fixed-volume rate structure. The tariff would establish separate residential and non-residential rate structures within SA1 and SA2.

¹⁴¹ Exh. 63, Staff Infrastructure Panel Testimony, p. 20.

¹⁴² In Case 11-W-0472, the Commission directed NYAW, in its next rate filing, to consider and propose consolidated, uniform rates for customers of the same rate classification, conversion to monthly billing and elimination of the currently applicable minimum usage allowances. Acquisition Order, pp. 9-10.

The proponents of the Joint Proposal state that the rate increase is allocated using the distribution of revenues at current rates, by service classification, with two exceptions. The first exception is to private and public fire service customers. Those customers would experience a revenue increase that is half of the increase of the other service classes in each of the service areas. The second exception to the standard revenue allocation concerns Sea Cliff property taxes which are exceptionally high. The proponents of the Joint Proposal would apply a special formula to allocate, within SA2, a portion of Sea Cliff property tax responsibilities to customers in the Merrick district. NYAW would first calculate the per-customer property tax burden in each of the two districts. Comparing the two, NYAW would isolate the amount by which the per customer property tax burden of Sea Cliff exceeds that of Merrick. That total for all Sea Cliff customers would then be equally divided between the customers of the Sea Cliff and Merrick districts.¹⁴³ Because of the significantly larger number of customers in Merrick, the per-customer effect of that sharing would still fall disproportionately on Sea Cliff customers. Pursuant to the terms of the Joint Proposal, the Company would be required to include a Cost of Service Study in its next rate filing to assess the cost recovery in revenues across its customer classes.

In their pre-filed cases, NYAW and Staff agreed on many issues related to rate design and allocation. Both parties supported a new tariff that would be applicable to all

¹⁴³ Tr. 329-332.

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customers,¹⁴⁴ the consolidation of the service territory into the two service areas described in the Joint Proposal,¹⁴⁵ the use of an inclining four-usage block rate design,¹⁴⁶ the elimination of usage allowances¹⁴⁷ and the move to monthly billing.¹⁴⁸ While the Signatory Parties agreed on these aspects, they differed with respect to the appropriate level of meter charge and rate design and allocation methodology.

In its initial testimony, NYAW proposed establishing an equalized meter charge for all residential and non-residential customers across the districts.¹⁴⁹ It proposed a \$15 meter charge for residential and non-residential customers with a 5/8" meter.¹⁵⁰ While Staff agreed with the application of monthly meter charges across all districts, it disputed the amount of the meter charges, particularly for 5/8" meters, arguing the charge should be set the lower existing Lynbrook rate of \$10.44.¹⁵¹ Staff argued that the Lynbrook district has the largest customer base, its customers were accustomed to the charge, and moving the majority of costs to the volumetric

¹⁴⁴ Exh. 21, Simpson Direct Testimony, pp. 17-19, Exh. 6, DeStefano Direct Testimony, pp. 21-22 and Exh. 75, Staff Policy Panel Testimony, pp. 14-16.

¹⁴⁵ Exh. 21, Simpson Direct Testimony, pp. 17-19, Exh. 6, DeStefano Direct Testimony, pp. 16 and Exh. 75, Staff Policy Panel Testimony, pp. 14-16.

¹⁴⁶ Exh. 6, DeStefano Direct Testimony, pp. 14-15 and Exh. 77, Staff Rates Panel testimony, pp. 37-38.

¹⁴⁷ Exh. 6, DeStefano Direct Testimony, pp. 14-15 and Exh. 77, Staff Rates Panel Testimony, p. 35.

¹⁴⁸ Exh. 5, Claase Direct Testimony, pp. 3-4 and Exh. 77, Staff Rates Panel Testimony, p. 38.

¹⁴⁹ Exh. 6, DeStefano Direct Testimony, pp. 14-15.

¹⁵⁰ Exh. 22, FXS-12, Tab 3.

¹⁵¹ Exh. 77, Staff Rates Panel Testimony, p. 35 and Exh. 78, SRP-7.

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portion of the bill would send a strong price signal for conservation.¹⁵² NYAW rejected Staff's lower recommended meter charge, arguing that it would add volatility to the annual revenue adjustment clause which could lead to significant surcharges.¹⁵³

To allocate the revenue increase, NYAW recommended first allocating a portion of the revenue increase to private and public fire customers. NYAW allocated revenues equal to a 3.5 percent increase to public fire service for both SA1 and SA2. It allocated revenues equal to a 2.02 percent and 15 percent increase to private fire service in SA1 and SA2, respectively.¹⁵⁴ NYAW explained the comparatively modest increase in SA1 for private fire service was attributable to the significantly higher tariff rates for private fire service in Lynbrook compared to other districts. The Company then allocated the remaining revenue increase for each service area based on the proportion of pro forma present revenues for the year ending March 31, 2018 for the residential, non-residential and sprinkler classes. The resulting revenue increase allocation would be applied to the fixed and volumetric charges with the intent of balancing the bill impacts to customers and the desired movement towards full consolidation.¹⁵⁵ The lawn sprinkler service rate (SC No. 4) in the Lynbrook district was proposed at NYAW's proposed third block rate for residential customers in SA1.¹⁵⁶

¹⁵² Exh. 77, Staff Rates Panel Testimony, pp. 34-37.

¹⁵³ Exh. 26, DeStefano Rebuttal Testimony, p. 17.

¹⁵⁴ Exh. 6, DeStefano Direct Testimony, p. 16.

¹⁵⁵ Exh. 6, DeStefano Direct Testimony, pp. 16-17.

¹⁵⁶ Exh. 22, FXS-12, Tab 3, p. 10.

Staff took issue with NYAW's revenue allocation, contending that it arbitrarily allocated revenues between service classifications. Staff recommended revenue increases be evenly allocated across service classifications, including fire protection and sprinklers.¹⁵⁷ Staff avowed that any changes in allocation should be supported by a cost of service study.¹⁵⁸ It also recommended that the bill impacts be considered at different usage points to determine the timeline for changes in rate design; a design that, it said, would soften impacts to customers.¹⁵⁹ Staff further rejected a full consolidation of rates within SA2. It stated that the disparity in property taxes between the Sea Cliff and Merrick districts was too significant to integrate their rates. Staff recommended the Sea Cliff property tax expenses incremental to those of Merrick should be collected through a rate applicable only to customers in the Sea Cliff district, thereby keeping the property taxes with customers of Sea Cliff. Staff suggested those costs be recovered from Sea Cliff customers on a volumetric basis through the use of a Rate Adjustment Mechanism (RAM).¹⁶⁰

NYAW was generally supportive of Staff's proposed allocation method of incremental revenue requirement adjustments in its rebuttal testimony but disagreed with its allocation calculation, noting an error in the calculated late payment rate and Staff's failure to consider existing surcharge revenues being moved into base rates.¹⁶¹ NYAW opposed Staff's proposal to implement a RAM specific to Sea Cliff customers, arguing that

¹⁵⁷ Exh. 77, Staff Rates Panel Testimony, p. 31.

¹⁵⁸ Ibid., pp. 31-32.

¹⁵⁹ Ibid., pp. 38-39.

¹⁶⁰ Exh. 77, Staff Rates Panel Testimony, pp. 41-42.

¹⁶¹ Exh. 26, DeStefano Rebuttal Testimony, p. 16.

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the proposal would slow progress towards a consolidated rate and revenue design.¹⁶² The Company maintained it would undercut the goal of the rate consolidation. It claimed that the move towards consolidation should be made in the context of this proceeding, where considerable revenue requirement reductions are available to offset bill impacts to customers.¹⁶³ NYAW further contended delay could make consolidation more challenging at a later time, particularly if property taxes continue to climb. It argued that, in consideration of the RAM, Sea Cliff customers would experience significant bill impacts.¹⁶⁴

The rate design and revenue allocation espoused in the Joint Proposal incorporates the areas of agreement within the Signatory Parties' litigated cases and reflects a compromise of the areas in contention. The proposal put forth by the Signatory Parties also addresses previous Commission directives that required consideration of consolidation, conversion to monthly billing and elimination of the currently applicable minimum usage allowances for customers in the Merrick and Sea Cliff districts.¹⁶⁵

We find that most aspects of the recommended rate design and allocation will provide benefits both to ratepayers and the Company and will promote our policy goals. By moving all customers to one tariff and bringing all metered customers onto the same billing cycle, the Company will capture administrative efficiencies and, by virtue of a more streamlined approach, customers should experience improved service. Moreover, the rate design, with its four-block inclining

¹⁶² Ibid., p. 18.

¹⁶³ Ibid., pp. 18-19.

¹⁶⁴ Id.

¹⁶⁵ Acquisition Order, pp. 9-10.

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structure, will encourage conservation by its price signaling. A regular billing cycle will allow customers to better understand their usage and it may assist in identifying leaks on the customer's property.

The proposed allocation, on the other hand, raises some concern. In particular, the three areas where the allocation deviates from the existing allocation of revenues among the service classes warrant scrutiny, namely, with regard to lawn sprinklers, fire service and the treatment of Sea Cliff property taxes. After evaluating these areas, we remain concerned with the treatment of Sea Cliff property taxes.

First, it appears that the lawn sprinkler rate in Lynbrook reflects the rate applicable to the third block of the residential rate in SA1. Although this was not specifically identified by the parties, the sprinkler rate was a matter in dispute in the litigated case. Here, the proposed rate appears consistent with NYAW's litigation position that the sprinkler rate to be set at the third block level of the SA1 residential rate. As a consequence, the allocation of revenues to that classification is higher than it would otherwise be. We find that applying this rate to the lawn sprinkler tariff is reasonable to encourage conservation.

Second, as proposed in the Joint Proposal, public and private fire protection customers would experience half of the increase provided to the other services classes. This approach balances the concerns raised by NYAW and Staff in their litigated cases. NYAW indicated some concern in applying the same increase to public and private fire service customers, given the differences in their existing rates. We also note that during the pendency of this proceeding we heard from several individuals at public statement hearings who raised concerns regarding the affordability of rates relating to public

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and private fire service and NMCA and CAWS reiterated those concerns in their testimony.¹⁶⁶ Here, we find that the proposal strikes a balance between the parties' positions by allocating a portion of the increase to those customers pending a full cost of service study. Through the cost of service study, we will be provided with better guidance as to how costs should be allocated to this class of customers. Until that time, it is appropriate that these customers absorb some of the increase, to minimize the situation in which other customers pay more than they should.

Finally, we must reject the Joint Proposal's approach of sharing a portion of Sea Cliff's property tax burden with customers of the Merrick district. The property taxes associated with the Sea Cliff district are considerable, for several reasons identified by NYAW. First, the Company pointed out that a large energy supplier is decommissioning its plant in Sea Cliff.¹⁶⁷ NYAW is taxed in a special utility class. The taxing jurisdictions within Sea Cliff have been allocating lost revenues from the decommissioning energy supplier to other customers in that class to make up the lost revenue.¹⁶⁸ Second, NYAW identified Sea Cliff as a relatively high-valued property area with higher than average assessments compared to other parts of its system.¹⁶⁹ Finally, the Company explained that taxes are increasing due to capital improvements it is making to its system. As more capital improvements are added to its system, the value of assets and assessments increases.¹⁷⁰

¹⁶⁶ Exh. 91, Borecky Testimony, p. 6 and Exh. 107, Denenberg Testimony, pp. 5-7.

¹⁶⁷ The referenced energy supplier is the Glenwood Power Station.

¹⁶⁸ Tr. 332.

¹⁶⁹ Tr. 332-333.

¹⁷⁰ Tr. 332.

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NYAW, and the preceding owners of the Sea Cliff district, have experienced a significant increase in property taxes over the last ten years. Since 2006, actual property taxes have almost quadrupled, and since 2013, property taxes have more than doubled. The result of these increases has been significant surcharges to Sea Cliff customers through the existing Property Tax Reconciliation mechanism. For the first two years of the rate plan, Sea Cliff customers will continue to pay these surcharges which will result in significant bills.

The problem with the JP's proposal to share a portion of Sea Cliff's property tax burden with Merrick customers arises because of the system of taxation applicable in Nassau County. Unlike other parts of New York State, New York City and Nassau County have the authority to create a utility and special franchise class for taxing purposes. A result of this is that taxing jurisdictions can charge the utility and special franchise class a higher rate than all other real property owners. Thus, instead of spreading any revenue shortfalls over a broader class of real property owners, some taxing jurisdictions have charged the utility and franchise class magnitudes above the rate of that for other real property classes. Because these taxes are business expenses of regulated utilities, the taxes are passed along to the Company's ratepayers.

Specifically, our concern is that by allowing some sharing of Sea Cliff's property tax with the Merrick district, we may encourage taxing jurisdictions to continue to disproportionately target the utility and special franchise class to make up revenue shortfalls. That is an untenable outcome. We are mindful of the concerns raised by NYAW, that consolidation may be more difficult in the future. However, we can only authorize full rate consolidation where we believe it

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is in the best interest of ratepayers. Sea Cliff utility property taxes are roughly 55% of Sea Cliff's revenues. Merrick property taxes are roughly 37% of Merrick's revenues. Moreover, the Merrick and Sea Cliff districts are not interconnected and there are no discernable benefits flowing to Merrick customers from the properties generating the taxes. Under these unique circumstances, we cannot support the socialization of Sea Cliff's property taxes with Merrick. Instead, NYAW is directed to surcharge Sea Cliff customers, on a volumetric basis, for the incremental per customer property tax burden above that of the per customer property tax responsibility of Merrick customers.

Earnings Sharing Mechanism

Section III.H of the Joint Proposal would establish an ESM governing distribution between customers and shareholders of earnings above certain stated thresholds of the average of NYAW's achieved ROEs for the four rate years. The common equity ratio used in each year's calculation of the actual ROE would be the lesser of NYAW's actual rate year common equity ratio or 46%.¹⁷¹ Actual ROEs would be determined for each rate year and, at the end of the four-year rate plan, the average of the four ROEs would be compared against the earnings sharing threshold

¹⁷¹ At the evidentiary hearing, Staff explained that the 46% common equity ratio cap is provided in the calculation to protect ratepayers in case the Company's actual common equity ratio is higher than the 46% common equity ratio used in the JP to determine the Company's hypothetical capital structure for purposes of determining the Company's revenue requirements (Tr. 336-337).

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percentages discussed below. A sample ESM calculation for the rate plan is set forth in Appendix E of Joint Proposal.¹⁷²

Under the ESM, NYAW would retain 100% of earnings attributable to an average actual ROE up to and including 9.75%. Earnings attributable to an average actual ROE above 9.75% and up to 10.50% would be shared 50% to customers and 50% to shareholders. Earnings attributable to an average actual ROE above 10.5% would be shared 90% to customers and 10% to shareholders. Any earnings shared with customers would earn interest at the Commission-determined Other Customer Provided Capital Rate in effect on April 1, 2019 (the mid-point of the four-year rate plan). Interest would be earned on the net-of-tax balance that would exist until any over-earnings were fully passed back to customers. The customers' share of any excess earnings would be deferred for the benefit of customers in NYAW's next rate case or as otherwise directed by the Commission. The ESM would continue until rates are reset by the Commission.

NYAW and Staff maintain that the ESM is a critical part of this four-year rate plan that provides distinct benefits to both ratepayers and investors. They assert that the multi-tiered ESM thresholds allow the Company to earn a fair return, incent the Company to control costs and improve productivity, and allow ratepayers to share in the Company's financial benefits, while also ensuring that the Company does not receive

¹⁷² Under Section III.H, the ESM calculation would exclude any revenue adjustments resulting from the Customer Service Performance Incentive Mechanism, NYAW's share of property tax refunds, any other Commission-approved ratemaking incentives or adjustments in effect during the applicable rate year; revenues not generated from utility operations and related deductions and taxes; and changes in accounting not contemplated in setting the revenue requirements.

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a windfall through excessive overearnings due to unforeseen events or large errors in financial projections.¹⁷³ NYAW further states that the ESM thresholds are comparable to those in other Commission-approved rate plans.¹⁷⁴

PULP states that it is concerned with the proposed ESM based on its opposition to ESMs in general and to ESMs with generous "dead bands" in particular, although it does not advocate the use of a different dead band.¹⁷⁵ PULP maintains that, in its experience, dead bands have resulted only in over-earnings for the utility rather than a proper balance of benefits between the utility and ratepayers. As stated in the discussion on the JP's proposed ROE and ROR, CAWS argues that NYAW should not be entitled to a "9.75% profit."

The Commission has endorsed the use of ESMs in the multi-year rate plans of many utilities, including NYAW.¹⁷⁶ As the Commission recently explained, such "mechanisms encourage a

¹⁷³ NYAW Statement in Support, p. 14; Staff Statement in Support, p. 12.

¹⁷⁴ NYAW Statement in Support, p. 14, citing Cases 15-E-0283 et al., New York State Electric & Gas Corporation - Rates, Order Approving Electric and Gas Rate Plans in Accord with Joint Proposal (issued June 15, 2016); Cases 16-E-0060 et al., Consolidated Edison Company of New York, Inc. - Rates, Order Approving Electric and Gas Rate Plans (issued January 25, 2017), pp. 26-27, as corrected by erratum notice issued January 25, 2017.

¹⁷⁵ PULP Statement on the Joint Proposal, pp. 3-4.

¹⁷⁶ Case 14-W-0489, American Water Company, Inc. Petition for an Update to its System Improvement Charge, Order Adopting Terms of Joint Proposal (issued August 14, 2015), pp. 5, 8; Case 11-W-0200, Long Island Water Corporation - Rates, Order Determining Revenue Requirement and Rate Design (issued March 20, 2012), pp. 16-17, 26; Case 11-W-0472, American Water Works Co., Inc., et al. - Acquisition of Aqua New York, Inc., Order Approving Stock Acquisition (issued April 20, 2012), pp. 11-12.

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utility to cut its costs, while providing ratepayers protection if actual financial results are dramatically different than had been forecast.”¹⁷⁷ Indeed, the ESMs previously authorized for NYAW have been effective in making NYAW seek to achieve cost savings, as shown by the significant decreases in NYAW’s O&M expenses, which, as discussed earlier, benefit ratepayers as an offset to NYAW’s annual revenue requirement increases.

The 65 basis point dead band proposed here resulting from the difference between the 9.1% ROE reflected in rates and the actual ROE of 9.75% above which sharing begins is consistent with prior decisions of the Commission and fosters our interest in encouraging cost efficiencies.¹⁷⁸ The proposed ESM strikes a reasonable balance among the interests of ratepayers and shareholders, will provide critical protection to ratepayers over the term of the multi-year rate plan, and is adopted.

Property Taxes

Property Tax Reconciliation Provisions

Section III.I of the JP provides for the Company’s property taxes to be partially reconciled to specific target levels for each year of the rate plan, with separate target levels set for each service area. The proposed property tax reconciliation (PTR) provisions are discussed in this section. The proposed property tax target levels are discussed in the next section.

¹⁷⁷ Cases 16-E-0060 et al., Consolidated Edison Company of New York, Inc. – Rates, Order Approving Electric and Gas Rate Plans (issued January 25, 2017), p. 27, as corrected by erratum notice issued January 25, 2017.

¹⁷⁸ Case 16-W-0130, Suez Water New York Inc. – Rates, Order Establishing Rate Plan (issued January 24, 2017), pp. 83-84 (approving a 65 basis point dead band and noting that the Commission has approved numerous dead bands with sharing beginning anywhere “from 40 to 75 basis points above the ROE allowed in the case”).

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In Rate Years 1 and 2, ratepayers would be responsible for 85% of any property tax expense in excess of the target levels for those years and NYAW would be responsible for the remaining 15%. In Rate Years 3 and 4, ratepayers would be responsible for 90% of any property taxes in excess of the target levels for those years and NYAW would be responsible for the remaining 10%. Variances between actual and forecasted property tax amounts for which ratepayers are liable would be collected through the RPCPTR in the next rate year. If actual property taxes are below target levels, ratepayers would be entitled to collect 100% of the difference through the RPCPTR, unless NYAW demonstrates that the reduction in the property tax expense was a direct result of its intervention and action, in which case NYAW would be allowed to retain 15% of the difference in Rate Years 1 and 2 and 10% of the difference in Rate Years 3 and 4. The disposition of any property tax refunds NYAW might receive would be addressed in separate proceedings initiated pursuant to Public Service Law § 113 and 16 NYCRR § 89.3.

In pre-filed testimony, NYAW noted that it currently has PTR provisions for its Lynbrook, Merrick and Sea Cliff districts, under which ratepayers are responsible for either 85% (in Merrick and Sea Cliff) or 90% (in Lynbrook) of property taxes in excess of target levels and are credited 100% of property tax amounts falling below target levels.¹⁷⁹ NYAW maintained that such asymmetrical PTR provisions were unwarranted, "given the Company's record and aggressiveness on tax challenges and the extent of the Commission's active oversight of the Company's tax challenge activities and status."¹⁸⁰ NYAW proposed that the PTR mechanism be extended to

¹⁷⁹ Exh. 6, DeStefano Direct Testimony, p. 27.

¹⁸⁰ Id., p. 28.

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all of its districts, but modified to make ratepayers responsible for 100% of property tax costs in excess of forecasted target amounts.¹⁸¹

Staff recognized that a PTR provision was needed to protect both the Company and ratepayers from incorrect property tax forecasts.¹⁸² In Staff's view, ratepayers should be responsible for 85% and the Company for 15% of property tax amounts in excess of forecasted levels, with the Company allowed to retain 15% of property tax amounts below target levels only where it demonstrates that the property tax reduction was a direct result of its intervention and efforts.¹⁸³ Staff rejected the Company's proposal to hold ratepayers 100% responsible for property taxes because, in its view, that would remove the Company's incentive to aggressively challenge property tax assessments.¹⁸⁴ In rebuttal, NYAW disagreed with Staff's recommendation and adhered to its original proposal.¹⁸⁵

NYAW now asserts that the PTR provisions recommended in the JP represent "a reasonable compromise that is in line with the treatment of property taxes in other recent rate cases and is within the range of likely outcomes had this case been fully litigated."¹⁸⁶ Staff states that the proposed PTR mechanism provides NYAW with an appropriate incentive to pursue property tax reductions while protecting it from the financial impact that increasing property taxes present to "an enterprise for which approximately 31 percent of total revenues for SA1 and

¹⁸¹ Id.

¹⁸² Exh. 65, Jagadish Testimony, pp. 5-6.

¹⁸³ Ibid., p. 7.

¹⁸⁴ Ibid., pp. 7-8.

¹⁸⁵ Exh. 27, DeStefano Rebuttal Testimony, p. 3.

¹⁸⁶ NYAW Statement in Support, p. 15.

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nearly 40 percent of total revenues for SA2 [are] paid to the taxing authorities for property and school taxes.”¹⁸⁷ Staff further posits that the proposed PTR mechanism will benefit customers because they would avoid paying all of the property taxes above forecasted levels and recover all or a major share of the funds resulting where actual property taxes are below forecasted levels.¹⁸⁸

Noting that NYAW recovers from customers through rates 100% of forecasted property tax levels, CAWS and NMCA argue that ratepayers should likewise recover 100% of the funds resulting when actual property taxes paid are below forecasted levels. They maintain that allowing the Company to retain a portion of those funds improperly allows the Company to earn a higher “profit” than allowed under the rate plan and provides the Company with an incentive to improperly inflate its forecasted property tax levels.

We disagree. The record contains no evidence showing that NYAW has improperly inflated its property tax forecasts. To the contrary, the record shows that NYAW used its past actual property tax liability to establish the forecasted tax levels. Moreover, those forecasts are independently reviewed by Staff as part of the rate-setting process. In addition, the ROE applicable to the Company is not set in isolation but as part of a complete rate plan, which includes reconciliation provisions to account for variations between forecasted and actual expenses to ensure the continued financial viability of the utility while protecting customers. Therefore, contrary to the assertions by CAWS and NMCA, application of such reconciliation provisions do not result in earnings higher than allowed by the rate plan and

¹⁸⁷ Staff Statement in Support, p. 14.

¹⁸⁸ Id.

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do not encourage inflated forecasts. Indeed, the Company's property tax forecasts historically have been low as compared to its actual property tax liability. As Staff points out, the adjustments to property tax forecast levels in this JP are designed to more appropriately align the forecasted levels with the Company's actual property tax liability.

Furthermore, if actual property taxes are below forecasted levels, the proposed PTR provisions provide that ratepayers are entitled to recover 100% of the difference through the RPCPTR. The only circumstance under which the Company can receive any portion of that amount is where the Company establishes that it took action that directly resulted in the reduction of property tax expense. As Staff points out, allowing the Company to share in a certain percentage of savings in that circumstance provides the Company with an incentive to pursue property tax reductions. If 100% of the property tax reductions were to be returned to ratepayers, that incentive would be diminished. The proposed sharing of the variance between property tax expenses and property tax targets therefore benefits ratepayers because they are entitled to recover the major portion of such property tax savings. We have approved PTR provisions in other cases for those very reasons, as well as because PTR provisions also benefit ratepayers when actual property tax expenses are greater than forecasted because the Company is responsible for paying a portion of the difference.¹⁸⁹

¹⁸⁹ See, e.g., Cases 16-E-0060 et al., Consolidated Edison Company of New York, Inc. - Rates, Order Approving Electric and Gas Rate Plans, as corrected by Erratum Notice issued January 25, 2017; Cases 13-W-0539 et al., United Water New Rochelle, Inc. - Rates, Order Approving Merger and Adopting Multi-Year Rate Plan (issued November 14, 2014), pp. 31-33; Case 11-W-0472, American Water Works Co., Inc., et al. - Acquisition of Aqua New York, Inc., Order Approving Stock Acquisition (issued April 20, 2012), pp. 10-11.

CAWS also argues that the JP provides NYAW with an incentive to challenge property taxes judicially, rather than administratively before an Assessment Review Committee or the Nassau County Assessor before assessments are finalized, and to delay resolution of the judicial tax challenges in an effort to increase the amount recovered against which it could seek to retain the 15% or 10% provided for in the JP. While CAWS points out that specific tax challenges have been pending for a number of years, it offers only unsupported allegations that NYAW somehow was responsible for delaying resolution of the tax challenges in order to increase the amount it could recover under a PTR provision. In addition, NYAW explains that the consolidation of several years of property tax challenges into a single litigation is a reasonable strategy that allows for its efficient use of legal and other expert resources and results in maximum refunds, with interest, for the benefit of ratepayers.¹⁹⁰ Moreover, although the witnesses at the evidentiary hearing stated that they were unaware of an "Assessment Review Commission" or of any meetings between NYAW and the Nassau County Assessor regarding property tax assessments, those witnesses also repeatedly informed CAWS that they did not have that information because such matters would be "handled by the legal team, internal and external legal consultants."¹⁹¹ NYAW has since pointed out that, pursuant to Real Property Tax Law §706,¹⁹² it has filed protests every year with the Nassau County Assessment Review Commission.¹⁹³

¹⁹⁰ NYAW Reply Post-Hearing Brief, p. 7.

¹⁹¹ Tr. 139.

¹⁹² RPTL 706(2) requires a petition challenging a property tax assessment to show that a "complaint was made in due time to the proper officers to correct such assessment."

¹⁹³ NYAW Reply Post-Hearing Brief, p. 6.

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Accordingly, we conclude that the PTR provisions proposed here are in the public interest, strike an appropriate balance between the interests of the Company and ratepayers, and they are adopted.

Forecasted Property Tax Levels

Section III.I of the Joint Proposal sets forth the following forecasted property tax levels for each of the four rate years:

Forecasted Property Tax Levels (\$ millions)					
Rate Year	SA1 Total	SA2 Merrick	SA2 Sea Cliff	SA2 Total	Combined Total
1	\$22.2	\$10.4	\$3.3	\$13.7	\$35.9
2	\$23.1	\$10.8	\$3.4	\$14.2	\$37.3
3	\$24.0	\$11.2	\$3.6	\$14.8	\$38.8
4	\$25.0	\$11.7	\$3.7	\$15.4	\$40.4

In pre-filed testimony, NYAW initially forecasted its total property tax liability for Rate Year 1 to be in the amount of \$36.09 million,¹⁹⁴ an increase of \$7.12 million or 24.58% over the historic test year.¹⁹⁵ NYAW's actual tax liability increased by eight percent from 2013 to 2014 (from \$25.112 million to \$27.125 million) and by 6.8 percent from 2014 to 2015 (from \$27.125 million to \$28.969 million).¹⁹⁶ NYAW asserted that its property tax expense increased substantially in recent years and that it expected the variance between its actual property tax liability and the property tax targets established in current rate plans to continue to grow.¹⁹⁷ As later adjusted to reflect

¹⁹⁴ Exh. 22, FXS-12, Tab 24, p. 1; Exh. 65, p. 4.

¹⁹⁵ The historic test year covers the twelve months ending December 31, 2015.

¹⁹⁶ Exh. 22, FXS-4.

¹⁹⁷ Exh. 6, DeStefano Direct Testimony, pp. 27, 29.

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certain updated actual tax liability, Staff agreed with NYAW's forecasted property tax liability in the amount of \$35.9 million, based upon an "evaluation of the Company's actual historical property taxes."¹⁹⁸

The Joint Proposal adopts the \$35.9 million property tax level for Rate Year 1, an increase of approximately \$9.69 million or 77% for SA1 and \$4.37 million or 47% for SA2 over property tax levels allowed under the Company's existing rate plans.¹⁹⁹ In addition, property taxes are forecasted to increase by 4% in both service areas for each of the succeeding three rate years. The increases in the forecasted property tax levels are largely due to significant increases to net utility plant, which is projected to increase in Rate Year 1 by \$89.6 million, or 36 percent, as compared to the historic test period.²⁰⁰ The JP includes separate forecasted property tax levels for the Merrick and Sea Cliff Water Districts for setting rates within SA2.

CAWS and NMCA apparently argue that the forecasted property tax levels are too high given NYAW's success in past

¹⁹⁸ Exh. 65, Jagadish Testimony, pp. 4-5.

¹⁹⁹ Exh. 42, Responses to ALJ Questions, pp. 3-4.

²⁰⁰ Tr. 281-282; Exh. 22, FSX-12, Tab 24, pp. 3-5; Exh. 41, Joint Proposal, Appendix A, Schedule A-1.1, p. 5 and Schedule A-2.1, p. 5.

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property tax challenges²⁰¹ and New York State's Property Tax Cap Law (Chapter 97 of the Law of 2011). That law, effective January 1, 2012, generally limits the annual growth of the total property taxes levied by local governments and school districts to two percent or the rate of inflation, whichever is less, subject to certain exceptions. CAWS and NMCA maintain that those factors should have reduced the Company's property tax liability going forward but are not accounted for in the JP.²⁰²

That argument lacks merit. The Company explained in pre-filed testimony that, for the former Aqua New York five upstate service districts (Cambridge, Kingsvale, Dykeer, Waccabuc and Wild Oaks), it used a three-year (2015, 2016 and 2017) average percentage change increase/decrease for town/general taxes, school taxes and village property taxes in projecting its property tax expense for those areas.²⁰³ For Mt. Ebo, the Company used "the increase between the 2014 and 2015 tax year bills as the projected year-over-year increase for each tax class."²⁰⁴ For the Lynbrook, Merrick and Sea Cliff districts, NYAW relied on utility plant in service, construction

²⁰¹ The Company discussed past and pending property tax challenges in its pre-filed testimony and noted that it has refunded approximately \$20.5 million to ratepayers as a result of successful property tax challenges (Exh. 6, DeStefano Direct Testimony, pp. 23-27). In addition, a Joint Proposal filed January 9, 2017 is currently before the Commission concerning the distribution of a tax refund in the approximate amount of \$984,000, resulting from NYAW's successful challenges to *ad valorem* taxes for garbage collection and disposal services charged to special franchise and utility property imposed in the Town of Oyster Bay, Syosset Sanitation District and Glenwood Garbage District, in Case 16-W-0384.

²⁰² CAWS Statement in Opposition, p. 5.

²⁰³ Exh. 6, DeStefano Direct Testimony, p. 22.

²⁰⁴ Id.

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work in progress, and franchise tax assessments to calculate its property tax forecasts for those areas.²⁰⁵ The reduced property tax burden resulting from past property tax challenges and any property tax cap effects necessarily would have been reflected in the Company's tax bills used in those calculations. To the extent those factors may further affect the Company's actual tax liability during this rate plan, they would be captured in the PTR mechanism.

CAWS makes much of the fact that the Company and Staff testified at the evidentiary hearing that they did not specifically consider the State tax cap in determining the Company's forecasted tax levels.²⁰⁶ In making that argument, CAWS ignores the fact that the State's property tax cap effects necessarily would have been reflected in the tax bills used to make those forecasts, as discussed above. Moreover, Staff specifically explained that the property tax forecasts were not otherwise based on any potential future changes to tax rates, but were instead based on historic tax rates and bills as applied to forecasted increases to utility plant.²⁰⁷ That the percentage increase to NYAW's forecasted tax liability exceeds the two percent property tax cap is not surprising given the large increases in current and projected utility plant. It also makes sense in light of NYAW's historical tax liability, which, as stated, increased by eight percent from 2013 to 2014 and by 6.8 percent from 2014 to 2015, despite the existence of the property tax cap during those years.

Investor-owned utilities like NYAW are required to pay property taxes to school districts, villages and towns on the

²⁰⁵ Ibid., pp. 22-23.

²⁰⁶ CAWS Post-Hearing Brief, pp. 2-3.

²⁰⁷ Tr. 71.

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buildings and plant used to provide water service. In this case, although the Company forecasts large increases to its property tax levels, which is designed to lessen the disparity that has existed between the Company's forecasted and actual property tax liability, we find that the proposed property tax levels are reasonable. Accordingly, they are adopted.

Other Property Tax Issues

CAWS and NMCA argue that allowing NYAW to recover property tax expenses from ratepayers is unconstitutional under the Due Process and Equal Protection Clauses of the Federal Constitution because nearby municipal water systems do not recover property taxes from their customers. They maintain that, although property tax expenses are included in NYAW rates, the ratepayers are not paying a fee for water usage but are actually paying property taxes that those Nassau County residents served by municipal water systems do not have to pay. In making that argument, CAWS and NMCA misunderstand the differences between municipal and privately owned water systems, the costs that privately owned water systems are entitled to recover in providing water service, and the role the Commission plays in the rate setting process.

In establishing a three-year rate plan for NYWS in Case 09-W-0237, the Commission rejected arguments urging the Commission to facilitate municipalization of a privately owned water system by denying it the revenues needed to match the reasonable costs of providing its water service.²⁰⁸ In doing so, the Commission recognized certain fundamental differences between municipal and privately owned water systems. As stated in that case, the chief advantages of municipal systems is that

²⁰⁸ Case 09-W-0237, New York Water Service Corporation - Rates, Order Establishing Three-Year Rate Plan (issued January 29, 2010), p. 22.

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they "can usually avoid paying property taxes, income taxes, and other taxes, and obtain needed capital at a lower cost." By contrast, privately-owned water companies are subject to property and income taxes, which are a legitimate part of their cost to provide water service and, thus, properly recoverable from customers.

Despite the differences between the two systems, which necessarily involve different costs and different rates, current laws and policies allow water service to be provided by either municipal or privately owned water companies.²⁰⁹ The Commission did not establish that dual system, has no jurisdiction over taxing authorities or municipal water systems, cannot force municipalization of privately-owned water companies, and lacks jurisdiction to determine whether the existence of municipal and privately-owned water systems within the same tax district creates any constitutional problems. In rate cases, our jurisdiction extends to whether a privately-owned water company provides safe and adequate service at just and reasonable rates.²¹⁰ In doing so, we cannot prohibit such water companies from recovering property tax expenses in rates, as that would be "unlawful under the Public Service Law and contrary to our responsibility to set just and reasonable rates that would ensure the Company can provide safe, reliable and adequate water service."²¹¹

Next, we reject CAWS's contentions that NYAW and Staff failed to provide sufficient information explaining the effect

²⁰⁹ Ibid., p. 21.

²¹⁰ Public Service Law §§ 2(26)(27), 4(1), 5(1)(f) and 89-c(1).

²¹¹ Case 09-W-0237, New York Water Service Corporation - Rates, Order Establishing Three-Year Rate Plan (issued January 29, 2010), p. 23.

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of certain property tax payments on the proposed rate plan.²¹² In response to one of CAWS's discovery requests, NYAW stated upon information and belief, and subject to certain objections, that Aqua NY paid taxes to school districts outside of its operating territory. NYAW further explained that it discontinued paying those taxes when it acquired Aqua NY in 2012 and that any resulting savings would have been passed under the applicable existing PTR mechanism.²¹³ Because NYAW no longer pays those taxes, they would not be included in the property tax forecasts contained in this JP. Moreover, to the extent CAWS wishes to know whether NYAW brought any challenges seeking a refund for Aqua NY's property tax payments, NYAW discussed all of its property tax challenges in pre-filed testimony and its property tax witness stated at the evidentiary hearing that he was unaware of any pending property tax case regarding those school districts.²¹⁴ Finally, contrary to CAWS's position, the reason why NYAW stopped paying property taxes to school districts outside its service territory is clear from the record: NYAW stopped paying those taxes because the school districts were outside of its service territory.²¹⁵

²¹² CAWS Statement in Opposition to the Joint Proposal, pp. 2, 4 and 11.

²¹³ Exh. 114, CAWS-4, pp. 1-2.

²¹⁴ Exh. 6, DeStefano Direct Testimony, pp. 24-27; Tr. 161.

²¹⁵ To the extent that CAWS complains that NYAW or Staff did not respond to CAWS's third set of interrogatories, the ALJ denied CAWS's motion to compel responses to those interrogatories. Ruling on Schedule and Discovery Motion (issued January 24, 2017). To the extent that CAWS is dissatisfied with NYAW's or Staff's responses to other interrogatories, CAWS never moved to compel further responses.

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Finally, CAWS takes issue with the percentage of tax refunds that NYAW is allowed to retain in proceedings brought pursuant to Public Service Law §113-2 and 16 NYCRR 89.3, and requests that the portion of past tax refunds allocated to the Company be turned over to ratepayers. However, past Commission orders allocating tax refunds to the Company and ratepayers are not subject to challenge in this separate rate case. To the extent that CAWS wishes to contest the future allocation of tax refund awards, the challenge should be asserted in the context of a specific tax refund proceeding, as CAWS has done in connection with the tax refund at issue in Case 16-W-0384.²¹⁶

New York Qualified Manufacturer Credit

Section III.J of the Joint Proposal states that NYAW and its outside accounting firm have determined that NYAW is a Qualified New York Manufacturer, which results in a regulatory liability for the benefit of NYAW's customers and a current 0% state income tax rate for NYAW.²¹⁷ The JP provides that the target amount of the regulatory liability to be used for ratemaking purposes will be approximately \$3 million for SA1 and \$2.1 million for SA2, or a total of \$5.1 million, and that NYAW will amortize those amounts over the first three years of the proposed rate plan. If NYAW loses its QNYM status during this rate plan or beyond for any reason, NYAW will defer the revenue requirement impact associated with such a change for future recovery from ratepayers.

NYAW originally estimated the QNYM credit to be in the amount of \$5.8 million.²¹⁸ Although Staff initially agreed with

²¹⁶ See CAWS Statement in Opposition to Sanitation Refund Proposal, filed February 6, 2017.

²¹⁷ See Tax Law §210(1)(a)(vi).

²¹⁸ Exh. 22, FXS-12, Tab 26.

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that amount,²¹⁹ NYAW updated the amount in rebuttal testimony to reflect the actual QNYM credit balance through July 2016 of \$5.1 million.²²⁰ Staff agrees that section III.J of the Joint Proposal "reflects the correct amounts to be amortized and passed back to customers,"²²¹ with the \$5.1 million QNYM credit to be amortized over three years. Although CAWS maintains that NYAW has failed to show how the QNYM credit "was realized" by ratepayers,²²² the Commission previously approved NYAW's use of a portion of the regulatory liability as an offset to reduce amounts owing under the Company's Revenue, Production Costs and Property Tax Reconciliation mechanisms for the rate year ending March 31, 2015.²²³ Moreover, the Joint Proposal establishes that NYAW would refund the remaining regulatory liability to ratepayers in the amount of \$723,835 per year for SA1 and \$988,260 per year for SA2 in Rate Years 1, 2 and 3.²²⁴ The QNYM credit provision of the Joint Proposal appears both reasonable and in the public interest. It benefits customers by crediting to them the savings resulting from the 0% state income tax rate.

We note that the budget bill signed by the Governor on April 10, 2017 amends certain provisions of the tax law,²²⁵ which

²¹⁹ Exh. 71, Luthringer Testimony, pp. 11-12.

²²⁰ Exh. 39, Simpson Rebuttal Testimony, p. 9; Exh. 40, FXS-13R.

²²¹ Staff Statement in Support, p. 19.

²²² CAWS Statement in Opposition, p. 7.

²²³ Cases 15-W-0437 et al., Petition of NYAW for Approval to Offset the RAC/PTR Surcharge, PSC 1, Order Authorizing Use of Funds (issued October 21, 2015).

²²⁴ Exh. 41, Joint Proposal, Appendix A-1.1, p. 2; A-1.2, p. 2 and A-1.3, p. 2; Appendix A-2.1, p. 2, A-2.2, p. 2, and A-2.3, p. 2.

²²⁵ Senate Bill No. 2009-C, Part P, amending Tax Law §210-B(1)(b)(i), which, pursuant to Tax Law §210(1)(a)(iv), describes the property that qualifies a manufacturer as a QNYM.

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appears to make water companies ineligible to be considered as QNYMs and, therefore, ineligible for a 0% state income tax rate. Under the JP, the revenue requirement impact associated with such a change in the law would be deferred for future recovery. However, because this issue would also affect other water utilities in New York, and to mitigate the rate impacts that a deferral would otherwise cause, we direct the Secretary to issue a notice instituting a proceeding, for NYAW and any other affected water company, that quantifies the ratemaking impacts of this change in law, and proposes a recovery mechanism to avoid the rate pressure a deferral would cause in the Company's next rate filing.

Pension and OPEBs

Section III.K of the Joint Proposal states that NYAW remains subject to the Commission's policy statement regarding accounting and ratemaking treatment for pensions and OPEBs.²²⁶ NYAW would continue to reconcile its actual pension and OPEB expenses to the levels allowed in rates and defer the difference. For each of the four rate years, after deducting the portion allocated to capital, NYAW's net pension rate allowances would be \$852,199 for SA1 and \$531,417 for SA2, or a total of \$1,383,616; and its net OPEB rate allowances would be \$388,688 for SA1 and \$(321,642) for SA2, or a total of 67,046.

The JP mirrors the numbers presented by NYAW in its pre-filed testimony, to which Staff had agreed.²²⁷ In addition, NYAW requested that it be allowed to earn interest on its

²²⁶ Case 91-M-0890, Statement of Policy Concerning the Accounting and Ratemaking Treatment for Pensions and Postretirement Benefits Other Than Pensions (issued September 7, 1993) (Pension and OPEB Policy Statement).

²²⁷ Exh. 22, FXS-8.1, p. 2 and 8.2, p. 2; Exh. 71, Luthringer Testimony, p. 6.

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projected debit balance of its pension and OPEB internal reserves and to reduce the interest rate applied against its internal reserve credit balance to the Other Customer Provided Capital Rate.²²⁸ As to the latter request, NYAW maintained that the lower interest rate provided by the customer capital rate was consistent with the interest rate used on other deferrals, such as the Revenue Adjustment Clause and Property Tax Reconciliation Clause, and with the rate used to calculate interest on its property tax refund cases.

Noting that NYAW's request to earn interest on the projected debit balance of its pension and OPEB internal reserves was the subject of a pending proceeding in Case 15-W-0325,²²⁹ Staff stated that the issue would be addressed in that proceeding.²³⁰ Staff disagreed with NYAW's request to have the Other Customer Provided Capital Rate, which was then 2.6%, applied against its internal reserve credit balance. Staff pointed out that the Pension and OPEB Policy Statement requires "that the interest rate applied on an internal reserve balance be the pretax rate of return that the utility is currently allowed in its base rates," which was above 9% for the Lynbrook and Sea Cliff districts.²³¹ Staff explained that because NYAW did not invest the rate allowance funds in an external fund, but retained the funds within the Company, it "has the use of these ratepayer provided funds, and ratepayers should be compensated for the use of these funds at the same rate of return the

²²⁸ Exh. 21, Simpson Direct Testimony, pp. 28-29.

²²⁹ Petition of New York American Water Company, Inc. Requesting Authority to Accrue interest on the Debit Balances of its Internal Reserves (Petition filed June 16, 2015).

²³⁰ Exh. 71, Luthringer Testimony, p. 7.

²³¹ Id.

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Company in authorized to earn on capital invested in the utility."²³²

The JP does not adopt NYAW's proposals to which Staff disagreed, but adopts the agreed-upon amounts for pension and OPEB rate allowances, which are not opposed and appear reasonable.

Customer Service Performance Incentive Mechanism

The Commission adopted the first Customer Service Performance Incentive (CSPI) mechanism for a New York water utility, for NYWS, one of NYAW's predecessor companies, in 2010.²³³ Section III.L of the JP continues that mechanism and makes it applicable to the Company's entire service territory, with certain modifications to make the mechanism more stringent. As set forth in the chart below, the proposed CSPI mechanism would subject the Company to certain negative revenue adjustments (NRAs) based upon its annual "escalated complaint" rate per 100,000 customers, with any NRAs to be deferred and returned to ratepayers as determined by the Commission.

Annual Escalated Complaint Rate Per 100,000 Customers	Negative Revenue Adjustment²³⁴
Less than 3	\$0
Greater than or equal to 3	\$194,946
Greater than or equal to 3.4	\$292,420
Greater than or equal to 4	\$389,893

Any customer of a regulated utility may contact the Department of Public Service, Office of Consumer Services (OCS),

²³² Id., p. 8 (citing Pension and OPEB Policy Statement, pp. 19-20 and Appendix A thereto, p. 6).

²³³ Case 09-W-0237, New York Water Service Corporation - Rates (issued January 29, 2010), pp. 44-46.

²³⁴ The JP notes that these NRAs are roughly equivalent to 10, 15, and 20 basis points, respectively.

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with a complaint about the utility.²³⁵ OCS closely monitors the number and types of all such complaints, which are referred in the first instance to the utility for resolution directly with the customer. If the utility does not resolve that initial complaint to the customer's satisfaction, the customer may again contact OCS, which then considers the matter an "escalated complaint." OCS investigates all escalated complaints and provides a written determination to the customer. As stated, the CSPI mechanism tracks only escalated complaints.

Escalated complaints under the CSPI mechanism would include "those that Staff determines involve situations where the Company has not provided a reasonable level of customer service and/or its actions are deemed to be not in compliance with the Commission's regulations or the Company's tariff."²³⁶ Examples of complaints that would not be counted in the CSPI mechanism as an escalated complaint include complaints about "water quality where the water supplied is in compliance with water quality standards" and "complaints involving a minor disruption to a customer's water service due to necessary system maintenance."²³⁷ In addition, the Company may request that the Commission waive or amend the escalated complaint thresholds and NRAs.

The number of escalated complaints would be calculated on a 12-month rolling average starting on January 1, 2018.²³⁸ The JP explains that the delayed implementation of the CSPI mechanism "will allow the monthly billing program to go into effect while supporting administrative ease and reporting

²³⁵ 16 NYCRR Part 12.

²³⁶ Exh. 41, Joint Proposal, p. 20.

²³⁷ Id.

²³⁸ Id., p. 19; see also Tr. 354.

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consistency by establishing a calendar year start date.”²³⁹ The potential revenue adjustments would be determined during the succeeding rate years after the Company files its annual performance report, which shall include the Company’s escalated complaint rate, any revenue adjustments, complaints the Company asserts should be excluded from the CSPI mechanism, and the reasons supporting such exclusions. The Company is required to file its annual performance report within 60 days after the end of each Rate Year, beginning with Rate Year 2. Accordingly, the first time the Company would be subject to potential NRAs under the CSPI mechanism would be for the 12-month period from January 1, 2018 to December 31, 2019, which would be determined based upon the Company’s annual performance report to be filed no later than May 30, 2019. The proposed CSPI mechanism would remain in place until changed by the Commission.

Staff had proposed in pre-filed testimony that the CSPI mechanism established for NYWS in Case 09-W-0273 be applied to the Company’s entire service territory, with lowered escalated complaint thresholds and higher potential NRAs.²⁴⁰ Specifically, Staff recommended that the Company be subject to an NRA of approximately \$374,000, or 20 basis points, for an escalated complaint rate greater than or equal to 2.1 complaints per 100,000 customers; an NRA of approximately \$468,000, or 25 basis points, for an escalated complaint rate greater than or equal to 2.5 complaints per 100,000 customers; and an NRA of approximately \$561,000, or 30 basis points, for an escalated complaint rate greater than or equal to 2.9 complaints per 100,000 customers.²⁴¹ Staff recommended making the CSPI

²³⁹ Id., p. 19.

²⁴⁰ Exh. 73, O’Dell-Keller Testimony, pp. 4-8.

²⁴¹ Exh. 74, EOK-3, p. 1.

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mechanism more stringent due to the significant growth in the Company's customer base and revenues, as well as to address the increase in the Company's 12-month rolling average escalated complaint rates from 0.7 in 2013 to 1.6 in April 2016. Staff also recommended that the Company be required to file annual reports with the Commission regarding its performance on the CSPI mechanism.

In rebuttal testimony, NYAW maintained that Staff lacked support for recommending NRAs of 20, 25 and 30 basis points.²⁴² It stated that it had satisfied the CSPI mechanism thresholds previously set for NYWS and that a more appropriate mechanism should be designed to create proper incentives and avoid disincentives for the Company. NYAW therefore offered to work with Staff to craft a CSPI mechanism "that properly balances Company incentives and customer benefits."²⁴³

The CSPI mechanism proposed in the JP is more stringent than the one currently applicable to NYWS but not as rigorous as that originally proposed by Staff. NYAW asserts that this CSPI mechanism is consistent with other Commission-approved rate plans and provides the Company with an appropriate added incentive to continue to provide high-quality water service and respond promptly and effectively to consumer complaints.²⁴⁴ Staff similarly maintains that the proposed CSPI mechanism "is an appropriate and reasonable means to incent NYAW to provide a high-level of customer service to ratepayers, by

²⁴² Exh. 26, DeStefano Rebuttal Testimony, p. 9.

²⁴³ Ibid., p. 10.

²⁴⁴ NYAW Statement in Support of JP, p. 18, citing Cases 13-W-0539 et al., United Water New Rochelle Inc. - Rates (issued November 14, 2014), pp. 43-44.

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proper response to customer complaints about their service."²⁴⁵ PULP asserts that the JP's retention of the CSPI is in the public interest and underscores the importance to NYAW "of quality service and attention to maintaining and growing the partnership between the Company and its ratepayers."²⁴⁶

CAWS opposes the CSPI mechanism as ineffective because it does not include complaints made to the Company, initial complaints made to OCS, and complaints made about the Company to elected officials. CAWS also asserts that NYAW intentionally deceives the public as to the real reasons for water quality issues and does not prominently display the Commission's contact information on customer bills.

CAWS's arguments lack merit, and suggest misunderstandings of both how Commission complaints are handled, and the principles of customer service measurement. When a customer initially complains to the Commission, the utility has a final opportunity to satisfy the customer's concerns. If it is able to do so, the matter is considered resolved and such a complaint is not counted for the purpose of the CSPI mechanism. By contrast, where the customer indicates that the utility's response is not satisfactory, the complaint is then "escalated." Regardless of how the matter is resolved thereafter, such an escalated complaint is counted against the utility for purposes of measuring customer performance, because it is clear that the Company has failed to satisfy the customer. Such counting of escalated complaints is routinely used for measuring utilities' customer service performance for purposes of imposing NRAs. The accumulation of escalated complaints beyond the target level is evidence that the quality of the Company's service has

²⁴⁵ Staff Statement in Support of JP, p. 20.

²⁴⁶ PULP Statement on the Joint Proposal, p. 3.

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deteriorated, and it is appropriate to subject the utility to potential negative financial impacts in such cases.

Moreover, we reject CAWS's position that customers are not adequately notified about their right to make an initial or escalated complaint to the Commission. Indeed, whenever a utility resolves a customer complaint "wholly or partially in the utility's favor, the utility must inform the customer of the commission's complaint handling procedures, including the commission's address and phone number."²⁴⁷ In addition, NYAW is required to provide customers annually with a brochure that describes the rights and responsibilities of residential customers.²⁴⁸ NYAW's customer bills also clearly inform customers of their right to contact the Commission and provide a toll-free number for that purpose.²⁴⁹ Furthermore, when OCS initially refers a customer complaint back to a utility, it informs the customer by letter that the customer may contact OCS at a toll-free number contained in the letter if dissatisfied with the company's response, at which point OCS would initiate an investigation and then report its findings to the customer.

CAWS also takes issue with the CSPI mechanism's exclusion from consideration as an escalated complaint water quality complaints where the water involved complies with "water quality standards." The same provision was contained in the CSPI mechanism adopted for NYWS in Case 09-W-0273. As Staff correctly points out, water quality standards do not fall within

²⁴⁷ 16 NYCRR 14.19(a)(4).

²⁴⁸ 16 NYCRR 14.16(a)(1).

²⁴⁹ The Commission's contact information and a copy of the rights and responsibilities brochure mentioned in the text also are available on NYAW's website at <https://amwater.com/nyaw/customer-service-billing/rights-responsibilities>.

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our jurisdiction.²⁵⁰ Accordingly, we agree with NYAW and Staff that the proposed CSPI mechanism appropriately does not subject the Company to NRAs for water quality complaints regarding water that satisfies applicable water quality standards. Of course, we recognize that discolored, unpalatable and/or odiferous water is undesirable for drinking, bathing or washing even when it passes testing by the State and/or County Departments of Health. However, we also note that the Company has taken and will be taking various steps to address water quality issues, including construction of portable and permanent iron removal treatment plants to address discoloration due to the iron that naturally occurs in Long Island groundwater.²⁵¹

We find the proposed CSPI mechanism to be reasonable and in the public interest. Accordingly, the CSPI mechanism is adopted.

Low-Income Program

Section III.M of the Joint Proposal would establish a low-income program for residential customers within 60 days of the effective date of new rates. Customers who receive Medicaid or Home Energy Assistance benefits would be eligible to enroll in the program, once their status is verified with a third-party program administrator. Approved customers would then receive a monthly bill credit equal to their meter charge (up to the 1" price) on 12 monthly bills. Those customers would be required to re-certify their eligibility status annually to continue to receive benefits.

²⁵⁰ Although OCS does not investigate water quality complaints, it does track the number of consumers who raise concerns about water quality and maintains a written file of those concerns for review by engineering staff assigned to the utility.

²⁵¹ Exh. 8, Kern Direct Testimony, pp. 13-14; Exh. 11, Kilpatrick Direct Testimony, pp. 3-19.

The budget for the low-income program is proposed to be capped at \$80,000 annually and recovered in base rates. Any program funds not expended during any rate year would be carried over for use in the following rate year. The low-income program, and the budget associated with it, is proposed to continue beyond the term of the rate plan.

Initially, NYAW had proposed a low-income program similar to the program described above.²⁵² However, as initially proposed, the administration and customer communication costs associated with its initial program were estimated at \$55,000 annually, while the program was estimated to serve approximately 98 customers and provide approximately \$17,574 in direct benefits to customers in Rate Year 1.²⁵³ Staff opposed NYAW's proposed program, contending that it was not cost-effective.²⁵⁴ Both parties indicated their willingness to discuss modifications to the program.²⁵⁵

The low-income program offered in the Joint Proposal addresses the concerns raised by Staff in its testimony. The program also has the support of PULP as the first low-income rate reduction program for a regulated water company in New York.²⁵⁶ While PULP opines that it would have preferred a larger budget for the low-income program, it maintains the program is a reliable financial assistance program that will aid low-income customers.²⁵⁷

²⁵² Exh. 6, DeStefano Direct Testimony, p. 21.

²⁵³ Exh. 22, FXS-12, Tab 16 and FXS-12, Tab 1, p. 29.

²⁵⁴ Exh. 73, O'Dell-Keller Testimony, p. 13.

²⁵⁵ Exh. 73, O'Dell-Keller Testimony, pp. 14-15; Exh. 26, DeStefano Rebuttal Testimony, p. 8.

²⁵⁶ PULP Statement on Joint Proposal, pp. 2-3.

²⁵⁷ Ibid., p. 2.

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While we recognize that the bill impact of the rate changes for some customers will be significant, we do not find that incurring the costs associated with the proposed low-income program are advisable at this time. We recently directed Suez Water New York Inc. to work with Staff and interested stakeholders to design a program to deliver low-income discounts to income-eligible customers.²⁵⁸ A collaborative process began on May 15, 2017. Because that process has not been completed, and the results have not yet been presented to or considered by us, the Commission does not support instituting a low-income discount program for NYAW as proposed. However, and as we previously discussed, a recent change in law may render NYAW no longer qualified for a State income tax exemption. The result of the change in law will be additional charges to ratepayers. We find that the \$80,000 program budget, proposed to be allowed in rates, will better serve customers to offset those costs. Therefore, we disapprove the low-income program and direct NYAW to defer, for the benefit of ratepayers, the amount allowed in rates for the low-income program. The net deferral will accrue interest at the Other Customer Provided Capital Rate established by the Commission.

Lead Pipe Removal Program

Section III.N of the Joint Proposal would establish a lead pipe removal pilot program. Pursuant to the terms of the Joint Proposal, shareholders would fund the pilot program in Rate Year 1 only, up to an amount of \$75,000. Through the pilot program, NYAW would gather information regarding the accuracy of available data on the extent and location of lead pipe on its system and on customer premises connecting with its system, collect additional aggregate data on lead pipe locations, and

²⁵⁸ Case 16-W-0130, Suez Water New York Inc. - Rates, Order Establishing Rate Plan (issued January 24, 2017), pp. 93-94.

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replace, at NYAW's incremental cost, a customer's lead service line where NYAW is replacing mains and services that connect to the customer's lead service line. NYAW also committed to participate in a collaborative, should one be convened by Staff, to discuss lead pipe replacement issues and concerns. The proponents of the Joint Proposal argue that the pilot program will facilitate the Commission's policy of main and service replacements, support public health and welfare, and assist customers in addressing customer-owned lead service line replacement in coordination with NYAW's replacement of its facilities.²⁵⁹

As further clarified by the Signatory Parties, the budget associated with this program is dedicated to cover the incremental cost of replacing customer lead service lines. Program funds will not be applied to any costs associated with research.²⁶⁰ NYAW estimates that the program will cover the replacement of between 15 and 30 service lines during its one-year term, anticipating that the incremental cost of replacing a customer's lead service line is between \$2,500 and \$5,000.²⁶¹ According to the Company, this is within the range of customer-owned lead services that it would encounter while replacing mains over the course of one year.²⁶²

As further explained at the evidentiary hearing, replacement of a customer's lead service pipe interconnected to a NYAW main is desirable where the Company is replacing its main to avoid a potentially unhealthy condition referred to as

²⁵⁹ Exh. 41, Joint Proposal, pp. 22-23; NYAW Statement in Support, pp. 18-19.

²⁶⁰ Tr. 371.

²⁶¹ Tr. 368.

²⁶² Tr. 368-369.

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partial lead service line replacement.²⁶³ According to the Company, if it cuts into a customer's lead service line during construction, and the service line is not subsequently thoroughly flushed, the result may be an increase in lead concentrations, according to research it reviewed.²⁶⁴ NYAW reported that its field staff is qualified to identify lead service mains where it is conducting work,²⁶⁵ and to avoid a cut into a customer's lead service line, NYAW's preference, through the pilot program, is to replace customers' service lines in lieu of a partial lead service line replacement.²⁶⁶ NYAW also advised that it is developing a targeted notice to customers with lead service lines.²⁶⁷

To implement this program, NYAW would first select mains for replacement, based on its analysis of several factors, including main age, leaks and breaks, availability of coordination with local municipalities, and concentrations of lead service lines.²⁶⁸ Once NYAW has identified the mains it intends to replace, the Company would review its records to determine whether interconnected customers may have lead service lines. In order to be certain of the composition of a customer's service line, NYAW would make an appointment with the customer.²⁶⁹ After determining a customer's service line is lead, NYAW would then enter into a legal agreement with a

²⁶³ Tr. 372.

²⁶⁴ Tr. 372-373.

²⁶⁵ Tr. 382.

²⁶⁶ Tr. 373.

²⁶⁷ Tr. 383-384.

²⁶⁸ Tr. 377-378.

²⁶⁹ Tr. 378-379.

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customer, install the new NYAW main, and replace the customer's lead service line.²⁷⁰

According to NYAW, data and experience learned through the course of the pilot program would inform discussions in a collaborative.²⁷¹ The collaborative, envisioned to be convened by Staff, is anticipated to consider the legality, availability, costs, benefits and feasibility of on-bill financing for replacement of customer-owned lead services, among other topics.²⁷²

The presence of lead in the water system was raised over the course of this proceeding by the Company, parties and members of the public. In its initial testimony, the Company acknowledged that it had no proposal to establish a customer assistance program related to lead service lines, but it would further pursue the issue with Staff during the proceeding.²⁷³ It later proposed an expansive program to Staff, to be paid for in base rates, which, it argued, would proactively address lead service lines.²⁷⁴ Staff and NYAW agreed to continue discussing such a program.²⁷⁵

Both NMCA and CAWS raised concerns during the course of the proceeding about the potential for lead in the water distribution system and in customers' homes.²⁷⁶ They argued that

²⁷⁰ Id.

²⁷¹ Tr. 370.

²⁷² Exh. 41, Joint Proposal, p. 23.

²⁷³ Exh. 4, Bruce Direct Testimony, p. 32.

²⁷⁴ Exh. 64, SIP-1 (DPS-290).

²⁷⁵ Exh. 63, Staff Infrastructure Panel Testimony, p. 30 and Exh. 30, Kilpatrick Rebuttal Testimony, pp. 11-12.

²⁷⁶ Exh. 91, Borecky Testimony, p. 10; Exh. 107, Denenberg Testimony, p. 10.

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health risks associated with lead may be significant, and that NYAW should take more aggressive steps to address both company-owned and customer-owned lead pipes.²⁷⁷

NYAW responded to these concerns by stating that it is in compliance with the Environmental Protection Agency's Lead and Copper Rule requirements, it does not produce water containing lead, and it takes protective measures, such as adding corrosion inhibitors to its water, to reduce any potential for lead to leach from pipes into its drinking water.²⁷⁸ NYAW stressed that it does not own, operate or control services or facilities such as indoor plumbing or service lines in private residences, commercial buildings or public facilities and that these services and facilities are the responsibilities of the owners.²⁷⁹ NYAW identified the program it proposed to Staff as its effort to accelerate removal of both Company-owned and customer-owned service lines and to address affordability of making such improvements by a customer.²⁸⁰

PULP is supportive of the Joint Proposal's pilot program, calling it "groundbreaking."²⁸¹ It states that municipal water systems have access to financial assistance for removal of lead pipes, but private systems, like NYAW's, have not had such assistance.²⁸² Until such time that assistance is available, PULP asserts that the proposed lead pipe removal

²⁷⁷ Id.

²⁷⁸ Exh. 31, Kilpatrick Rebuttal Testimony, pp. 10-11.

²⁷⁹ Id.

²⁸⁰ Ibid., pp. 11-12.

²⁸¹ PULP Statement on the Joint Proposal, p. 3.

²⁸² Id.

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program will help to address a serious public health issue immediately.²⁸³

The lead pipe replacement program recommended in the Joint Proposal makes strides to address an issue that is important to the health and well-being of NYAW's customers. We are supportive of NYAW's efforts to engage customers where the Company is conducting work and to be proactive to inform customers about customer-side lead service lines. We appreciate NYAW's pursuit of this issue throughout the proceeding and its willingness to utilize shareholder funds to assist in the replacement of a customer's lead service line, although it is ordinarily the responsibility of the customer to do so.

The New York State Legislature has recognized the issue of customer-owned lead service lines. The capital projects bill earmarked \$2.5 billion dollars for spending on clean water infrastructure projects.²⁸⁴ Of those funds, \$20 million are dedicated to addressing lead service lines. The process established by the Legislature envisions municipalities requesting monies from the Department of Health.²⁸⁵ The Department of Health will administer a Lead Service Line Replacement Grant Program that will allocate funds, giving priority to municipalities that have a high percentage of elevated childhood blood lead levels and considering whether the community is low income and the number of lead service lines in need of replacement.²⁸⁶

We are hopeful that the stakeholder collaborative envisioned by the Signatory Parties will include municipalities,

²⁸³ Id.

²⁸⁴ Laws of 2017, Chapter 54.

²⁸⁵ Laws of 2017, Chapters 54 and 57. See Public Health Law (PHL) §1114.

²⁸⁶ PHL §1114.

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so that NYAW and Staff may make those municipalities aware of the availability of these funds and familiarize them with the application process, for the benefit of municipal constituents and NYAW ratepayers. This collaborative will lay the groundwork for finding a long-term solution for addressing customer-owned lead service lines within NYAW's service territory. We hereby direct our Staff to establish the collaborative within 60 days of the issuance of this order.

As noted above, at the evidentiary hearing, NYAW identified partial lead service line replacements as posing a potential risk to customers. In order to protect customers from any potential risk, we direct NYAW to advise a customer, where the Company discovers a customer has a lead service line, that the customer's line is lead. In addition, NYAW should provide customers with sufficient notice whereby the customer might mitigate any potential health risks where the Company is conducting work on an interconnected main or service. The notice should include, at a minimum, the customer's option to replace its service line and the Company's recommended flushing protocols where it encounters a partial lead service line replacement.

Geothermal Pilot Project

The Joint Proposal contains several provisions relating to the geothermal pilot heating/cooling system in the William S. Buck Elementary School located in Valley Stream. NYAW installed this system, at its cost, in 2014. It utilizes the constant temperature geothermal energy available from water delivered by NYAW's water distribution mains as the ground loop in the system.

Pursuant to the terms of the Joint Proposal, no recovery of or on the geothermal pilot program would be

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authorized.²⁸⁷ However, NYAW would retain its right to petition the Commission for recovery of the pilot program in the future.²⁸⁸ No non-revenue water production costs associated with the geothermal project would be permitted recovery from ratepayers and those costs would be adjusted out of the production cost reconciliation mechanism that was previously discussed.²⁸⁹ Finally, the Joint Proposal would allow \$130,608 associated with the geothermal pilot as a research and development cost, to be recovered in Rate Year 1.²⁹⁰

In its testimony, NYAW sought recovery for the full cost of the \$4.55 million dollar pilot project.²⁹¹ NYAW contended that it should be allowed recovery of the costs associated with the geothermal pilot, asserting the project is compatible with the Commission's Reforming the Energy Vision (REV) proceeding²⁹² as a "water for REV" project.²⁹³

NMCA and CAWS opposed recovery of these costs. They argued that customers outside the school district would not realize any social, economic or environmental benefits from the pilot.²⁹⁴ Moreover, they asserted that customers should not

²⁸⁷ Exh. 41, Joint Proposal, p. 8.

²⁸⁸ Id.

²⁸⁹ Exh. 41, Joint Proposal, p. 11.

²⁹⁰ Exh. 41, Joint Proposal, Appendix A, Schedule A-1.1, p. 2 and Schedule A-2.1, p. 2.

²⁹¹ Exh. 4, Bruce Direct Testimony, p. 30; Exh. 11, Kilpatrick Direct Testimony, pp. 24-28.

²⁹² Case 14-M-0101, Reforming the Energy Vision.

²⁹³ Exh. 4, Bruce Direct Testimony, pp. 29-30.

²⁹⁴ Exh. 91, Borecky Testimony, p. 8 and Exh. 113, Poretsky Testimony, p. 1-2.

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shoulder any research and development costs associated with the program.²⁹⁵

For its part, Staff maintained that the geothermal project was not appropriate for traditional rate base recovery.²⁹⁶ Staff claimed project costs should be excluded from rate year plant additions and that no depreciation expense associated with the project should be authorized,²⁹⁷ with the exception of the Horton Avenue Main, a segment of the project that Staff supported as necessary for system reliability and water quality, regardless of the geothermal pilot project.²⁹⁸ Staff regarded the pilot as having uncertain benefits and suggested the pilot be classified as a research and development project.²⁹⁹ Staff opined that the project's research and development value would benefit NYAW's parent company, American Water Works Company, Inc., and suggested that costs of the project should be shared with the parent. It posited that research and development costs associated with the project should be limited to NYAW's share of total revenues of its parent, three percent, and recommended the Commission allocate three percent of the total net geothermal pilot project costs, or \$130,608, to NYAW.³⁰⁰ It further recommended that non-revenue water associated with the geothermal project and any treatment costs associated with the volume of water lost due to the

²⁹⁵ Exh. 91, Borecky Testimony, p. 8.

²⁹⁶ Exh. 75, Staff Policy Panel Testimony, p. 4.

²⁹⁷ Exh. 75, Staff Policy Panel Testimony, pp. 6-7; Exh. 63, Infrastructure Panel Testimony, p. 16; Exh. 64, SIP-3 and SIP-4.

²⁹⁸ Exh. 75, Staff Policy Panel Testimony, p. 6-7.

²⁹⁹ Ibid., p. 4.

³⁰⁰ Ibid., pp. 7-8.

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project's water usage be excluded from rates.³⁰¹ Staff noted that the pilot is unique and its effectiveness is yet unproven, but that NYAW could consider a variety of business models that may benefit ratepayers and shareholders.³⁰²

NYAW disputed Staff's position, arguing that Staff failed to consider the project's benefits as a result of its contribution toward REV goals.³⁰³ NYAW asserted that full recovery should be authorized,³⁰⁴ that the Commission should support research and development costs of water utilities, and that such costs should not be allocated to its parent.³⁰⁵

Staff maintains that the treatment of the geothermal pilot project in the Joint Proposal is reasonable and should be adopted.³⁰⁶ It asserts that the treatment of the geothermal pilot is consistent with its litigation position.³⁰⁷

We find that the recovery of \$130,607 as research and development costs strikes the right balance between ratepayers and shareholders. We are tasked with carefully scrutinizing any proposal that would seek recovery of ratepayer funds to ensure it provides demonstrable and sufficient benefits to water customers. Pursuant to the proposal, ratepayers will not pay for project costs whose benefits have not yet been quantified. At the same time, NYAW is provided some recovery of its investment as a research and development cost. If the Company's project is a success and it develops a viable business model as

³⁰¹ Ibid., pp. 8-9.

³⁰² Ibid., pp. 10-14.

³⁰³ Exh. 30, Kilpatrick Rebuttal Testimony, p. 8.

³⁰⁴ Id., p. 8.

³⁰⁵ Ibid., p. 9.

³⁰⁶ Staff Statement in Support, p. 22-23.

³⁰⁷ Ibid., p. 23.

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a result of its efforts, both ratepayers and shareholders may benefit. Given the costs associated with this project, and the uncertain benefits, we find that allocating research and development costs between NYAW and its parent is appropriate, particularly in that, if successful, NYAW's parent may replicate the program nationwide amongst its subsidiaries to its benefit.

Agreements Between Parties

The Joint Proposal contains several provisions implementing agreements between the parties, which do not require our adoption. Those provisions, enumerated in the ordering clauses below, are not disapproved, but their terms are not adopted as part of this order.

CONCLUSION

The record compiled in this case is complete and supports our decision to adopt the terms of the Joint Proposal as proposed by the signatory parties, with one modification. Notwithstanding the opposition discussed in this order, we conclude that the Joint Proposal provides a fair balancing of the interests of ratepayers and the Company and its investors. It provides sufficient funding for NYAW to maintain safe and reliable service and attract necessary capital to ensure the long-term viability of the Company, while mitigating the ratepayer impact through levelization of the revenue increases. The Joint Proposal provides reasonable resolutions for the issues raised in this case and recommends funding levels and programs that are within the reasonable range of outcomes that might be expected as a result of the case being fully litigated. Finally, the terms of the JP also evidence its consistency with our environmental, social and economic policies and those of the State.

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Accordingly, we find that the rate plan established herein will provide just and reasonable rates and is in the public interest.

The Commission orders:

1. The rates, terms, conditions, and provisions of the Joint Proposal dated January 9, 2017, filed in this proceeding and attached hereto as Attachment 1, with the exception of the implementing provisions set forth in Section III, Paragraphs S, U, V, W and X, are adopted and incorporated herein to the extent consistent with the discussion herein. An officer of New York American Water Company, Inc. is directed to file with the Commission a letter confirming its unconditional acceptance of the Multi-Year Rate Plan established in this Order by noon on May 23, 2017.

2. New York American Water Company, Inc. is directed to file a cancellation supplement, effective on not less than one day's notice, on or before May 23, 2017, cancelling the tariff amendments and supplements listed in Attachment 2.

3. New York American Water Company, Inc. is authorized to file, on not less than one day's notice, to become effective on June 1, 2017, on a temporary basis, such tariff changes in PSC No. 5 as are necessary to effectuate the terms of this Order for the rates in the rate year ending March 31, 2018.

4. New York American Water Company, Inc. shall serve copies of its filings on all active parties to these proceedings. Any party wishing to comment on the tariff amendments may do so by filing its comments with the Secretary to the Commission and serving its comments upon all active parties within ten days of service of the tariff amendments. The amendments specified in the compliance filings shall not become effective on a permanent basis until approved by the

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Commission and will be subject to refund if any showing is made that the revisions are not in compliance with this Order.

5. New York American Water Company, Inc. is directed to file such further tariff changes as are necessary to effectuate the rates for Rate Year 2 ending March 31, 2019, Rate Year 3 ending March 31, 2020, and Rate Year 4 ending March 31, 2021. Such changes shall be filed on not less than 30 days' notice to be effective on a temporary basis.

6. New York American Water Company, Inc. is directed to file cancellation supplements on not less than one day's notice, effective June 1, 2017, cancelling its tariff schedules, PSC Nos. 1 through 4, and the supplements and statements contained in those schedules.

7. The requirement of the Public Service Law §89-c(10) and 16 NYCRR 720-8.1 that newspaper publication be completed prior to the effective date of the amendments for Rate Year 1 are waived and New York American Water Company, Inc. is directed to file with the Secretary to the Commission, no later than six weeks following the effective date of the amendments, proof that a notice to the public of the changes set forth in the amendments and their effective date had been published once a week for four consecutive weeks in one or more newspapers having general circulation in the service territory. The requirements of Public Service Law §89-c(10) and 16 NYCRR 720-8.1 are not waived with respect to Rate Year 2, Rate Year 3, and Rate Year 4.

8. In the Secretary's sole discretion, the deadlines set forth in this Order may be extended. Any request for an extension must be in writing, include a justification for the extension, and be filed at least one day prior to the affected deadline.

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9. This proceeding is continued.

By the Commission:

(SIGNED)

KATHLEEN H. BURGESS
Secretary



PENNSYLVANIA PUBLIC UTILITY COMMISSION
COMMONWEALTH KEYSTONE BUILDING
400 NORTH STREET
HARRISBURG, PA 17120
December 19, 2018

IN REPLY PLEASE
REFER TO OUR FILE

MR JOHN COX
DIRECTOR OF RATES AND REGULATIONS
PENNSYLVANIA AMERICAN WATER COMPANY
800 WEST HERSHEY PARK DRIVE
HERSHEY PA 17033

**RE: Distribution System Improvement Charge
Effective January 1, 2019
M-2018-3006616**

Dear Mr. Cox:

The Bureau of Audits has reviewed Pennsylvania America Water Company's quarterly Distribution System Improvement Charge (DSIC) filing submitted on December 18, 2018. In the filing, the Company is not proposing to revise its current effective DSIC rate of 0.00%.

Based upon staff review, it appears that the DSIC rate is consistent with the tariff and, accordingly, the rate is permitted to remain in effect as proposed.

The DSIC is subject to continuous Commission review and audit as well as reconciliation reports in accordance with Section 1307(e) of the Public Utility Code, 66 Pa.C.S. § 1307(e).

Any subsequent submissions to the Commission related to this docketed case should reference Docket No. M-2018-3006616.

Sincerely,

A handwritten signature in black ink that reads "Rosemary Chiavetta".

Rosemary Chiavetta
Secretary

Contact Person: Larry Treaster
717-772-0310

STATE CORPORATION COMMISSION

AT RICHMOND, MARCH 13, 2018

SCC-CLERK'S OFFICE
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2018 MAR 13 P 1:52

APPLICATION OF

VIRGINIA-AMERICAN WATER COMPANY

CASE NO. PUR-2017-00149

For approval to implement a Water and
Wastewater Infrastructure Service Charge
Plan and Rider

ORDER APPROVING WWISC PLAN AND RIDER

On October 31, 2017, Virginia-American Water Company ("VAWC" or "Company") filed with the State Corporation Commission ("Commission") an application ("Application") for approval to implement a pilot Water and Wastewater Infrastructure Service Charge ("WWISC") plan ("WWISC Plan") for VAWC's Alexandria operating district, which is located in and around the City of Alexandria, Virginia, and for approval to recover costs incurred in replacing WWISC-eligible water infrastructure through a WWISC rider ("WWISC Rider").¹

According to VAWC, the infrastructure projects undertaken by the Company in the WWISC Plan would enhance system reliability by accelerating water infrastructure replacement aimed at reducing system integrity risks associated with customer outages, distribution main failures, underperforming mains and services, and unaccounted-for water.²

VAWC states that, as approved by the Commission in Case No. PUE-2015-00097,³ its WWISC Plan is a three-year pilot program that is designed to facilitate the accelerated

¹ Ex. 2 (Application) at 1.

² *Id.*

³ *Application of Virginia-American Water Company, For a general increase in rates*, Case No. PUE-2015-00097, Doc. Con. Cen. No. 170550163, Final Order (May 24, 2017).

replacement of WWISC-eligible water infrastructure between 2017 and 2020.⁴ In the present proceeding, the Company is requesting approval to recover the costs associated with approximately \$11.5 million of incremental WWISC-eligible infrastructure investment that the Company has incurred or projects to incur between April 1, 2017, and December 31, 2018.⁵

VAWC is also seeking Commission approval of a WWISC Rider. The WWISC Rider would be comprised of two components, a WWISC Current Service Charge ("Projected Factor") and a WWISC Reconciliation Credit/Charge ("True-Up Factor").⁶ The Company requests authority to implement its initial WWISC Rider for the period March 1, 2018, through February 28, 2019. In this initial WWISC Rider, the Company would recover the approximately \$11.5 million of WWISC-eligible costs that the Company has incurred or projects to incur between April 1, 2017, and December 31, 2018.⁷ In its Application, VAWC requested that the service charge for the initial WWISC Rider be set at \$0.020 per 100 gallons of usage.⁸

On November 17, 2017, the Commission issued an Order for Notice and Hearing in this case that, among other things, docketed the Application; scheduled a public hearing on the Application; required VAWC to publish notice of its Application; gave interested persons the opportunity to comment on, or participate in, the proceeding; and directed the Commission's

⁴ Ex. 2 (Application at 1, 5). In total, VAWC proposes to spend approximately \$18 million on WWISC-eligible infrastructure between 2017 and 2020. The Company states in its Application that while it anticipates spending approximately \$6 million per year for each of the three years of the WWISC Plan, it is seeking Commission approval to spend up to 5% above or below this amount in any specific year. *Id.* at 5.

⁵ *Id.* at 6; Ex. 3 (McGee Direct) at KEM-1; Ex. 4 (Akmentins Direct) at GLA-2, p.3.

⁶ Ex. 2 (Application) at 6; Ex. 4 (Akmentins Direct) at 9.

⁷ Ex. 2 (Application) at 1-2, 6.

⁸ Ex. 4 (Akmentins Direct) at GLA-2.

Staff ("Staff") to investigate the Application and file testimony and exhibits containing its findings and recommendations thereon.

Notices of participation were filed by the City of Alexandria, Virginia ("Alexandria") and the Office of the Attorney General's Division of Consumer Counsel ("Consumer Counsel").

Alexandria filed the testimony of Carl W. Eger III on January 19, 2018. Mr. Eger opposes the Company's proposed Application, stating that many of the infrastructure replacement and rehabilitation projects the Company proposes to complete are not eligible to be included in the WWISC Plan.⁹ First, Mr. Eger states that a significant number of the 32 proposed projects improperly increases the size of pipes, often seeking to replace existing 2-inch diameter pipes to pipes with diameters between 6 inches and 8 inches.¹⁰ VAWC's proposed tariff states in part that WWISC-eligible property will consist of transmission and distribution system mains installed as in-kind replacements.¹¹ Mr. Eger contends that the replacement of these smaller pipes with larger ones does not reflect the commonly understood definition of "in-kind replacement," and instead represents betterments that will increase capacity and revenue and therefore should be considered in a rate case.¹² Second, Mr. Eger claims that several of the proposed projects do not appear to meet the definition of eligible infrastructure or the Company's stated goals for the WWISC and should be excluded from the WWISC Plan because the Company failed to provide support for its inclusion of those projects.¹³

⁹ Ex. 5 (Eger Direct) at 7-8.

¹⁰ *Id.* at 8; Ex. 3 (McGee Direct) at KEM-1.

¹¹ *See* Ex. 4 (Akmentins Direct) at GLA-1, p. 2.

¹² Ex. 5 (Eger Direct) at 7-9.

¹³ *Id.* at 7-11.

On January 26, 2018, Staff filed testimony. In Staff's testimony, Staff witness Scott C. Armstrong: (i) analyzes the Company's proposed jurisdictional revenue requirement of \$971,330; (ii) develops a revised revenue requirement of \$875,388; (iii) describes the four primary differences between Staff's and the Company's revenue requirement; (iv) recommends that the Company file an earnings test with next year's WWISC application based on a test year ended June 30, 2018; (v) recommends that the Company defer costs it intends to recover through a WWISC Rider as the costs are incurred; and (vi) recommends that the Commission direct the Company to provide testimony and quantification of certain potential impacts related to the recent enactment of the federal Tax Cuts and Jobs Act of 2017.¹⁴ Marc A. Tufaro also filed testimony, in which he reviews VAWC's proposed tariff and WWISC service charge. Mr. Tufaro recommends that the term "wastewater utility" be removed from Section 1 of the proposed tariff, but otherwise finds that the tariff complies with the directives set forth in the Commission's Final Order in Case No. PUE-2015-00097. Mr. Tufaro further recommends, based on Mr. Armstrong's recommended revenue requirement, that the service charge for the initial WWISC Rider be set at \$0.018 per 100 gallons of usage.¹⁵

On February 8, 2018, the Company filed rebuttal testimony. Company witness Gary L. Akmentins opposes one of Staff's four primary adjustments to the revenue requirement, related to Staff's exclusion of \$579,928 of projected 2018 expenditures. As a result, Mr. Akmentins recommends a revised jurisdictional revenue requirement of \$906,725, with a service charge for the initial WWISC Rider of \$0.0186 per 100 gallons of usage.¹⁶ Company witness Kristina

¹⁴ Ex. 6 (Armstrong Direct) at 7-22.

¹⁵ Ex. 8 (Tufaro Direct) at 1-5. Staff did not take issue with any of the Company's proposed projects. *See id.*

¹⁶ Ex. 10 (Akmentins Rebuttal) at 2-5, GLA-3, p. 1.

McGee states in rebuttal testimony that the proposed WWISC tariff defines "in-kind replacement" as the "replacement with new materials and or equipment designed, constructed, and sized to meet current industry standards, and federal, state or local regulation."¹⁷

Ms. McGee notes that the Company generally has not installed mains with diameters that are less than 4 inches for several decades, and further notes that Rule 22 of VAWC's Rules and Regulations does not permit water main pipes smaller than 6 inches in diameter to be installed except where public fire protection service is not involved.¹⁸ As such, Ms. McGee contends the replacement of undersized pipes with larger ones represents WWISC-eligible investment and is appropriate for inclusion in the WWISC Plan and for recovery in the WWISC Rider.¹⁹

Ms. McGee also provides further descriptions of certain projects proposed by the Company and details why certain projects, such as projects that eliminate dead-end mains, are deemed eligible for inclusion in the WWISC Plan.²⁰ Ms. McGee cites to the proposed WWISC tariff, which defines WWISC-eligible property to include "main extensions installed to eliminate dead ends..." and asserts that the elimination of dead-end mains in the proposed projects would improve service reliability and fire hydrant flow capacity.²¹

¹⁷ Ex. 9 (McGee Rebuttal) at 2; Ex. 4 (Akmentins Direct) at GLA-1, p. 2.

¹⁸ Ex. 9 (McGee Rebuttal) at 2-3, KEM-2.

¹⁹ *Id.* at 2-4.

²⁰ *Id.* at 4-5. Descriptions of several of the proposed projects were also included in Ms. McGee's direct prefiled testimony. *See* Ex. 3 (McGee Direct) at 9-11. *See also* Tr. 57, 64-66.

²¹ *See* Ex. 4 (Akmentins Direct) at GLA-1, p. 2; Ex. 9 (McGee Rebuttal) at 4-5.

An evidentiary hearing was conducted as scheduled on February 21, 2018. No public witnesses appeared to testify at the hearing.²² Counsel for the Company, Staff, Alexandria, and Consumer Counsel participated at the hearing.

NOW THE COMMISSION, upon consideration of this matter, is of the opinion and finds that, as modified in accordance with the findings made herein and subject to the requirements of this Order and the Final Order in Case No. PUE-2015-00097, the Company is authorized to implement its WWISC Plan. The Commission further finds that, as discussed herein, the WWISC Rider is approved.

Infrastructure Replacement Projects

We approve the infrastructure replacement projects proposed by VAWC and listed in Company witness McGee's direct prefiled testimony.²³ We find that the proposed projects, including VAWC's replacement of undersized pipes with larger ones and the elimination of certain dead-end mains, are supported by the record, meet the criteria of WWISC-eligible investment, and comply with the purpose and plain language of the WWISC tariff, as well as with the relevant provisions of the Company's Rules and Regulations.²⁴ Moreover, the infrastructure projects covered under the WWISC Plan, and approved by the Commission, should be implemented in a manner that complies with industry standards and other applicable requirements. This applies to matters such as pipe sizes and configurations, as well as construction practices. That is why the instant Order approves, for example, infrastructure

²² Tr. 8.

²³ Ex. 3 (McGee Direct) at KEM-1.

²⁴ See, e.g., Ex. 3 (McGee Direct) at 9-11, KEM-1; Ex. 4 (Akmentins Direct) at GLA-1; Ex. 9 (McGee Rebuttal) at 2-5, KEM-2; Tr. 57, 60-62, 64-66. Our determinations herein are based solely on the proposed projects included in this proceeding. We make no finding in this case as to whether any future projects that the Company may propose meet the criteria for WWISC-eligible investment.

projects that reflect today's standards (as opposed to when the original pipes were installed) for pipe diameters and for the looping of pipes to avoid dead-end mains.²⁵

WWISC Tariff

We find that the Company's proposed WWISC tariff, as modified by Staff witness Tufaro, should be approved.²⁶

WWISC Rider

There is no disagreement between Staff and VAWC with regard to any proposed project at this time. As noted above, the primary difference between Staff's and the Company's revenue requirement concerns whether the return of, and return on, \$579,928 of projected 2018 expenditures should be included in the Projected Factor revenue requirement. As Staff noted at the hearing, despite spending above projected levels in 2017, VAWC confirmed that its projection to spend a total of approximately \$11.5 million on incremental WWISC-eligible infrastructure investment between April 1, 2017, and December 31, 2018, had not changed.²⁷ As such, Staff removed \$579,928 of projected 2018 expenditures in order to limit the Company's investment to a total of \$11.5 million.²⁸ We find that Staff's exclusion of \$579,928 of projected 2018 expenditures, and the corresponding reduction of the Projected Factor, is reasonable. We note that if the Company incurs additional costs for approved projects not incorporated in the Projected Factor, such expenditures will be considered in the appropriate True-Up Factor.²⁹

²⁵ See, e.g., Ex. 9 (McGee Rebuttal) at 2-5, KEM-2; Tr. 66.

²⁶ Ex. 8 (Tufaro Direct) at 4.

²⁷ Tr. 45-46; Ex. 7.

²⁸ See Tr. 46.

²⁹ See Tr. 47.

Thus, for the period April 1, 2017, through December 31, 2018, the WWISC Projected Factor revenue requirement is \$875,388, the True-Up Factor revenue requirement is \$0.00, and the total revenue requirement is \$875,388.³⁰

Finally, we find that the booking and procedural recommendations set forth in the direct prefiled testimony of Staff witness Armstrong, which were not contested by the Company, are hereby adopted.³¹

Accordingly, IT IS ORDERED THAT:

- (1) The Company is authorized to implement its WWISC Plan as set forth in this Order.
- (2) A WWISC Rider is approved as set forth in this Order and shall become effective for service rendered on and after March 1, 2018.
- (3) Within thirty (30) days of the date of this Order, VAWC shall file revised tariffs for the WWISC Rider with the Clerk of the Commission and the Commission's Divisions of Public Utility Regulation and Utility Accounting and Finance, as is necessary to comply with the directives set forth in this Order. The Clerk of the Commission shall retain such filings for public inspection in person and on the Commission's website: <http://www.scc.virginia.gov/case>.
- (4) This case is dismissed.

AN ATTESTED COPY hereof shall be sent by the Clerk of the Commission to all persons on the official Service List in this matter. The Service List is available from the Clerk of the State Corporation Commission, c/o Document Control Center, 1300 East Main Street, First Floor, Tyler Building, Richmond, Virginia 23219. A copy shall also be sent to the Commission's

³⁰ Ex. 6 (Armstrong Direct) at Statement 1.

³¹ *Id.* at 7-22.

Office of General Counsel and Divisions of Public Utility Regulation and Utility Accounting and Finance.

1320101

**PUBLIC SERVICE COMMISSION
OF WEST VIRGINIA
CHARLESTON**

At a session of the PUBLIC SERVICE COMMISSION OF WEST VIRGINIA in the City of Charleston on the 28th day of December 2017.

CASE NO. 17-0466-W-CN

WEST VIRGINIA-AMERICAN WATER COMPANY

Application for a certificate of public convenience and necessity to construct certain additions and improvements to its Weston and Webster Springs systems in Lewis and Webster Counties, West Virginia.

CASE NO. 17-0787-W-DSIC

WEST VIRGINIA-AMERICAN WATER COMPANY

Application for approval of the 2018 Distribution System Improvement Charge.

COMMISSION ORDER

The Commission approves a Joint Stipulation and Agreement for Settlement that recommends that the Commission (i) grant a certificate of public convenience and necessity to construct certain additions and improvements to West Virginia-American Water Company's Weston and Webster Springs systems and (ii) approve a 2018 Distribution System Improvement Charge.

BACKGROUND

Certificate Application, 17-0466-W-CN

On April 14, 2017, West Virginia-American Water Company (WVAWC) filed an application for a certificate of public convenience and necessity (Certificate Application), pursuant to W. Va. Code § 24-2-11, to (i) decommission the Webster Springs Treatment Plant (WSTP) and construct an interconnection so that customers who are now served by the WSTP can be served by the Weston Treatment Plant (Interconnection) and (ii) upgrade the Weston Treatment Plant (Weston Plant Upgrade, together with the Interconnection, the Weston-Webster Springs Project). The total estimated cost is \$20.8 million, comprised of \$6.1 million for the Weston Plant Upgrade and \$14.7 million for the Interconnection. WVAWC stated that it does not believe that

the Interconnection requires a certificate, but agreed in the settlement of Case Number 16-0550-W-DSIC to seek a certificate before including rate recovery for the Interconnection in a Distribution System Improvement Charge (DSIC) filing. WVAWC also pre-filed the direct testimonies of Brian K. Bruce and Shelley W. Porter to support the Weston-Webster Springs Project Certificate Application.

On April 17, 2017, the Commission ordered WVAWC to publish a Notice of Filing in each of the counties in which WVAWC provides service.

On May 18, 2017, WVAWC filed Affidavits of Publication evidencing publication of the Notice of Filing.

On May 19, 2017, Commission Staff filed its Initial Joint Staff Memorandum, asserting that the Notice of Filing was deficient and WVAWC should provide additional information to support the Certificate Application. On May 30, 2017, WVAWC filed a Response to the Initial Joint Staff Memorandum.

On July 7, 2017, the Commission granted a Petition to Intervene filed by the Commission Consumer Advocate Division (CAD) and required WVAWC to publish a revised Notice of Filing in each of the counties in which it provides service.

On October 12, 2017, WVAWC filed Affidavits of Publication evidencing publication of the revised Notice of Filing.

2018 DSIC Application, 17-0787-W-DSIC

On June 15, 2017, WVAWC filed for approval of its second Distribution System Improvement Charge Application (2018 DSIC Application), with revised rates to become effective January 1, 2018. WVAWC proposed to invest \$29.9 million in calendar year 2018. Simultaneously with the 2018 DSIC Application, WVAWC pre-filed the direct testimonies of Brian K. Bruce, Brett W. Morgan and John S. Tomac.

WVAWC computed the 2018 DSIC rate with the same method that was used in last year's case. As proposed, a typical residential customer bill would reflect investments made in both 2017 and 2018 and the monthly DSIC charge would increase to \$1.56 per month in 2018, or 3.28 percent over current base rates. The 2017 DSIC monthly rate is \$0.52 for the average residential customer.

On June 26, 2017, CAD filed a Petition to Intervene in the 2018 DSIC Application.

On July 20, 2017, Staff filed its Initial Joint Staff Memorandum, advising that WVAWC needed to provide additional information and recommending that the Commission require WVAWC to provide notice of the 2018 DSIC Application. On July 31, 2017, WVAWC filed a Response to the Initial Joint Staff Memorandum.

Certificate and 2018 DSIC Cases

On July 28, 2017, WVAWC, Staff and CAD jointly proposed a procedural schedule to process the Certificate Application and the 2018 DSIC Application at the same time, with the evidentiary hearing to be conducted October 11-13, 2017.

On August 10, 2017, the Commission granted the CAD Petition to Intervene in the DSIC proceeding, adopted a procedural schedule to process both cases, and required WVAWC to publish a Notice of Filing and Hearing that addressed the filing of the 2018 DSIC Application and the combined evidentiary hearing.

On September 15, 2017, Staff pre-filed the direct testimonies of David L. Pauley and Jonathan M. Fowler and CAD pre-filed the direct testimony of Ralph C. Smith.

On October 2, 2017, WVAWC pre-filed the rebuttal testimonies of John S. Tomac and Shelley W. Porter.

On October 10, 2017, the Commission scheduled a public comment hearing to be conducted in Webster Springs on October 25, 2017, and required notice of the public comment hearing to be published.

On October 11, 2017, Staff filed a Joint Stipulation and Agreement for Settlement (Joint Stipulation) between WVAWC, Staff, and CAD (Stipulating Parties) to resolve both the Certificate Application and the 2018 DSIC Application.

During the evidentiary hearing on October 11, 2017, WVAWC witness Brian Bruce testified in support of the Joint Stipulation and answered questions from counsel and the Commission. Tr. at 15-49 & Joint Ex. 1 (Oct. 11, 2017). All parties urged the Commission to approve and adopt the Joint Stipulation. *Id.* at 45-49. The Commission noted that a considerable number of protests had been filed in opposition to the Weston-Webster Springs Project by the citizens of Webster Springs and stated that the Commission would receive public comment in Webster Springs before deciding these cases. *Id.* at 6, 9-10 and 48.

On October 12, 2017, WVAWC filed Affidavits of Publication evidencing publication of the Notice of Filing and Hearing in each of the counties in which WVAWC provides service.

On October 23, 2017, the Executive Secretary of the Commission filed the Affidavit of Publication to evidence compliance with the Commission requirement to publish notice of the public comment hearing in Webster Springs.

On October 25, 2017, the Commission conducted a public comment hearing in Webster Springs and indicated that the Commission would consider the public comments before making its final decision. Tr. at 10-11, 33 (Oct. 25, 2017). State Senator Robert Karnes, George Clutter, Scott Clutter, Tom Clark, Webster Springs Mayor Don McCourt, Chuck Armentrout, Jim Casey, Nettie Russel, Shannon Cochran and Scott Cochran expressed concern about the proposal to close the WSTP and provide service to the Webster Springs area through the Interconnection with water from the Weston Treatment Plant. The majority of the concerns related to water quality and source of supply (*id.* at 8, 15, 24, 36 and 37), receiving water from a plant further away (*id.* at 8, 17, 19-20 and 27), potential job loss in the Webster Springs area (*id.* at 15 and 38), WVAWC acquiring new customers at the expense of Webster Springs residents (*id.* at 26 and 31), and the cost of the project (*id.* at 17, 24 and 27-38).

WVAWC President Brian Bruce also spoke during the public comment hearing. He stated that the Elk River flow recently was very low at the plant intake and the water level frequently was quite low. *Id.* at 37-45. Mr. Bruce stated that constructing the Interconnection, instead of simply replacing the WSTP, would allow WVAWC to continue to provide service to Webster Springs and extend service into unserved areas. Mr. Bruce also commented that WVAWC would construct new storage tanks as part of the Interconnection and these new tanks would increase the amount of stored water available to serve Webster Springs to 4.5 days from 3.8 days. He also said that the Interconnection would improve pressure and reliability to customers in the Webster Springs area.

On November 30, 2017, WVAWC filed a proposed Order and stated that all of the Stipulating Parties assented to the proposed Order.

In reviewing this matter, the Commission considered the Certificate Application and 2018 DSIC Application, the Joint Stipulation, the direct and rebuttal testimonies of all witnesses, the testimony at the evidentiary hearing, comments at the public comment hearing, and the comment letters. The transcripts from the evidentiary and public comment hearings totaled 103 pages, and there were 898 pages of exhibits. The Commission received 438 letters in opposition to, and two letters in support of, the certificate project and three letters in opposition to the DSIC Application.

DISCUSSION

The Commission established a schedule to process these cases at the same time because WVAWC initially proposed recovery of the costs associated with the Weston-Webster Springs Certificate Project through the 2018 DSIC rate component. *Id.* at Ex. 3. After engaging in discovery, reviewing public comment letters and pre-filed

testimony and conducting settlement negotiations, WVAWC, Staff and CAD recommended that the Commission grant a certificate for the Interconnection and approve a DSIC rate increment for 2018 that does not include any revenue recovery for the certificate project.

WVAWC asserted a dual need for the Weston-Webster Springs Certificate Project: to address the aging WSTP and to expand capacity at the Weston Treatment Plant. Weston-Webster Springs Project Certificate Application at 2. WVAWC explained that there were several deficiencies stemming from the age, design and location of the WSTP, and the WSTP had reached the end of its useful life. Id. at 2-4. WVAWC also asserted that its Weston Treatment Plant soon would not be able to meet projected demand. Id. at 6-7. After analyzing alternatives, WVAWC decided to pursue the Weston-Webster Springs Project. Id. at 6.

Throughout these proceedings, the residents of Webster Springs voiced considerable opposition to granting the certificate, regardless of whether its costs would be recovered via the DSIC rate component, because construction of the Interconnection would result in the closure of the WSTP.

Although public comment is not evidence presented under oath, local residents presented a unified and substantial number of voices in opposition to the Interconnection. WVAWC provides service to about 915 customers in the Webster Springs area, and the Commission received more than 430 letters against the proposed certificate project. Ten people presented their comments at the hearing in Webster Springs. We explain in this Order how we reached our decision to approve construction of the Interconnection.

The residents of Webster Springs are proud of their water source, the WSTP, and the quality of the water they presently receive. They are concerned that the Weston-Webster Springs Project could result in lower water quality, job losses and service issues related to the length of the Interconnection. Tr. at 14-39 (Oct. 25, 2017).

At the hearing in Webster Springs, WVAWC's president, Brian Bruce, stated that both water treatment plants now meet all standards. Id. at 42. The WSTP went online in the late 1930s, and after evaluating several options WVAWC concluded that it was not feasible to make additional capital investments in the WSTP. Id. at 44; Certificate Application at 2. WVAWC faces periods of both extremely low flow in, and flooding of, the upper Elk River at the WSTP. Tr. at 41 (Oct. 25, 2017); Tr. at 38 (Oct. 11, 2017). This autumn, the water level was so low that WVAWC had to place a pump in the river and run a hose to the wet well in order to obtain sufficient supplies of raw water. When there is heavy flooding on the Elk, floodwater enters the treatment plant. Hard rains stir up sediments in the shallow river, and the increased amount of sediment makes water treatment more difficult. Id.

Mr. Bruce stated WVAWC does not have similar concerns regarding the Weston Treatment Plant that recently earned a Directors Award from the United States

Environmental Protection Agency Partnership for Safe Water. Tr. at 40-41 (Oct. 25, 2017). The WSTP has not and cannot, despite skilled operators, receive this distinction. Id.

Regarding the length of the Interconnection and its impact on water service both for fire protection and when leaks occur in Webster Springs, Mr. Bruce stated that the certificate project will include elements to increase storage capacity to approximately 4.5 days. That added storage will enhance service reliability, including for main breaks and fire protection. Tr. at 43, 45-47 (Oct. 25, 2015).

Staff recommended that the Interconnection incorporate additional water storage and permanent backup power, and WVAWC adopted Staff's approach in the design of the Interconnection. Tr. WVAWC Ex. SWP-R at 1-2 (Oct. 11, 2017). WVAWC will install permanent backup generators between the Weston Treatment Plant and Webster Springs to enhance reliability. Tr. at 45 (Oct. 25, 2017). WVAWC also will add re-chlorination stations and otherwise address chlorine levels as needed throughout the Interconnection to ensure water quality is maintained. Id. at 45, 51-52.

In response to concerns about job losses, WVAWC stated that it has been difficult to find certified operators to work at the WSTP, but committed to continue employing local staff to maintain the water system's day-to-day needs in the Webster Springs area, including field service work, meter reading, and system maintenance. Id. at 48-50.

Webster Springs residents presented heartfelt concerns. We appreciate that local economies, particularly in rural areas of the state, are suffering and applaud the Webster Springs residents for their thoughtful and detailed participation in these cases.

We cannot consider the concerns of local residents, though, separate from the deficiencies associated with the WSTP and the existing need to expand the Weston Treatment Plant. In addition to the operational difficulties that Mr. Bruce described at the hearing in Webster Springs, several deficiencies were identified in a 2007 Sanitary Survey conducted by the West Virginia Bureau for Public Health and a 2011 Webster Springs Service Area analysis conducted by WVAWC, and updated in 2016, including the following:

(i) *Intake.* The WSTP intake piping is not adequately submerged during low river stage conditions. The rock dam that allows water to pool over the intake is unreliable and can wash out during storm events;

(ii) *Sedimentation basin.* There is no mechanical solids removal, and detention time is reduced when solids have accumulated. The WSTP has to be taken out of service three to four times a year for manual cleaning because there is not a redundant sedimentation basin;

(iii) *Chemical feed systems.* Duplicate feed capability is not available at the WSTP. The only access to the chlorine room (which is not airtight) is from inside the plant. Cylinder storage is inadequate, and a chlorine scrubber is not available;

(iv) *Filters.* The rapid sand filters are designed to filter 2.00 gpm/ft² and can be operated at peak flows of 2.50 gpm/ft², but in June 2009 the average loading was 2.10 gpm/ft², which exceeds the design criteria. Additional filtration capacity is needed to provide redundancy during backwashing, repairs and maintenance. The steel filter tanks have signs of corrosion;

(v) *Clearwell.* The Bureau for Public Health requires all new or upgraded water treatment plants to meet the disinfection standards in the clearwell, without pre-chlorination, but the size of the clearwell at the WSTP is not sufficient to do so; and

(vi) *Backwash.* The Public Water Systems Design Standards require a minimum backwash rate of 15 gpm/ft², but the backwash rate is 10-11 gpm/ft² at the WSTP. The plant cannot filter-to-waste¹ and there is no backwash meter. The 7,000-gallon capacity of the holding tank is not large enough to receive the wastewater that results from the backwash of one of the filters at the recommended rates. A significant amount of settled solids return to the sedimentation basin.

Certificate Application at 2-5 & Ex. 2.

We recognize that the Bureau for Public Health characterized all of the deficiencies at the WSTP as moderate or minor and did not note any significant deficiencies. We must balance this relatively positive assessment, though, with the reality that the WSTP is located in a flood plain and the Webster Springs area is projected to continue to lose population, a trend that began in 1990. Because of its age and location, refurbishing the WSTP is not an economically viable option. B. Bruce Direct Testimony at 4, 5 (Tr. WVAWC Ex. BKB-D Oct. 11, 2017).

The Weston Treatment Plant, in contrast, needs to be expanded to 3 million gallons a day, from its current rated capacity of 2 million gallons per day, to meet future demand that is projected just for the Weston area. When it is upgraded, the Weston Treatment Plant will have sufficient capacity to provide service to customers in the Webster Springs area. WVAWC can bring water to the Webster Springs area by constructing 22 miles of new line. Tr. at 50 (Oct. 25, 2017). Furthermore, public water service may be extended to more than 300 new customers in areas near the Interconnection. B. Bruce Direct Testimony at 4 (Tr. WVAWC Ex. BKB-D Oct. 11, 2017).

¹ When the filter returns to water treatment operations after the backwash process, there is a temporary spike in turbidity. Filter-to-waste sends the first volumes of water after the backwash to the sanitary sewer or backwash basin so that there is less turbidity in the clearwell.

WVAWC projects that it will cost \$6.1 million to upgrade the Weston Treatment Plant and \$14.7 to construct the Interconnection. *Id.* WVAWC estimates that it would cost \$12.1 million to construct a new treatment plant at Webster Springs, Certificate Application at 5-6 & Ex. 4, whereas it will cost \$14.7 million to construct the Interconnection. Certificate Application at 6. WVAWC will have to upgrade the Weston Treatment Plant regardless of which approach is selected to improve service to Webster Springs.

WVAWC asserts that serving Webster Springs via the Interconnection is more cost effective on a life cycle basis than separate projects to upgrade the Weston Treatment Plant and relocate and build a new WSTP. *Id.* at 4-5; S. Porter Direct Testimony at 10 (WVAWC Ex. SKP-D Oct. 11, 2017). The estimated life cycle cost of a new WSTP is \$11.9 million, and the estimated life cycle cost of serving Webster Springs via the Interconnection is \$11.4 million. Certificate Application at 6.

The Interconnection will extend the Weston service area southward along West Virginia Route 20 to the Hacker Valley area in northern Webster County, then connect to the existing Webster Springs Diana Extension. An eight-inch transmission main will connect the southern end of the Hacker Valley Extension to the northern end of the Diana Extension. Certificate Application at 9; S. Porter Direct Testimony at 6-7 (Tr. WVAWC Ex. SKP-D Oct. 11, 2017).

Having listened to the concerns of the residents and the response of WVAWC, and after evaluating the evidence presented in these cases, including WVAWC's engineering analysis and the supporting recommendations of Staff and CAD, the Commission must conclude serving the Webster Springs area through the Interconnection is a better long-term solution than constructing a new WSTP. Furthermore, the Interconnection project has the added benefit of bringing public water service to residents of Lewis and Webster Counties that would otherwise not have access to public water. The Commission will grant the Weston-Webster Springs Project Certificate Application, pursuant to W. Va. Code § 24-2-11.

Turning now to the DSIC case, WVAWC proposed non-revenue producing, non-expense reducing investments in utility plant, as well as potential system expansion projects. 2018 DSIC Application at 3. WVAWC asked to recover costs associated with facilities that would be placed into service during calendar year 2018, including the incremental rate of return, related income taxes,² depreciation expense and state property taxes on the DSIC investment, uncollectibles expense, as well as the West Virginia business and occupation tax. *Id.* at 8.

² The Commission notes that the income tax component used in this case reflects federal income taxes before consideration of the impacts of the recent Federal Income Tax Law revisions signed into law on December 22, 2017. WVAWC should expect some true-up or other treatment of income taxes based on the change in the tax law.

In the Joint Stipulation, the Stipulating Parties recommended that the Commission authorize a 2018 revenue increase of \$2,797,997³ for the DSIC rate component, as shown in Joint Stipulation Attachment A. Joint Stipulation at ¶ 8(h) & Att. A; Tr. at 31 (Oct. 11, 2017) (B. Bruce). This revenue increase, using the amounts and calculation methods shown in Joint Stipulation Attachment A, is fair, reasonable and in the public interest.

The Stipulating Parties agreed that no costs associated with the Weston-Webster Springs Project should be recovered in the 2018 DSIC or in any subsequent DSIC application. Joint Stipulation at ¶ 8(d); Tr. at 25. WVAWC should be permitted, instead, to accrue an Allowance for Funds Used During Construction (AFUDC) on the investment in the Interconnection during the construction period. Joint Stipulation at ¶ 8(e); Tr. at 25-26.

The Stipulating Parties recommended that the Commission approve the projected 2018 infrastructure investments that are set forth in Attachments B and C to the Joint Stipulation for DSIC rate recovery. WVAWC initially had proposed DSIC rate recovery on infrastructure investment of \$5,000,000 for the Weston to Webster Springs Interconnection. Attachments B and C to the Joint Stipulation, however, exclude all of the \$5,000,000 in 2018 investment that was proposed as the Weston to Webster Springs Interconnection and dedicate \$3,000,000 to additional main replacement projects. Joint Application at ¶ 8(f); Tr. at 28.

The changes to the investment levels reduce the revenue requirement for the 2018 DSIC rate component to \$4,308,888 from the \$4,480,685 that WVAWC initially proposed. Joint Stipulation at ¶ 8(h); Tr. at 31. The revised revenue requirement will result in an increase of 3.15 percent over current base rates, as compared with the 3.28 percent increase that WVAWC proposed. *Id.* For an average residential customer, the monthly increase as proposed by the Joint Stipulation will be \$0.98, whereas WVAWC requested \$1.04 in the 2018 DSIC Application. *Id.* For settlement purposes only, the Stipulating Parties agreed that the calculation of the 2018 DSIC Component would not include a provision for uncollectibles expense. Joint Stipulation at ¶ 8(g); Tr. at 30.

WVAWC will file future applications for DSIC rate recovery and true-up no later than July 1. *Id.* at ¶ 8(i).

The Stipulating Parties agreed that the Commission should not at this time establish any distinct categories of utility investment as being eligible for DSIC rate

³ This increase represents the difference between the \$4,308,888 revenue requirement in Joint Stipulation Paragraph 8(c) and the 2017 revenue requirement of \$1,510,891 that was authorized by the Commission on December 2, 2016, in Case Number 16-0550-W-DSIC.

Attachment A (page 1, line 16) of the Joint Stipulation depicts the 2017 revenue requirement as \$1,501,772, however, because after the final Commission Order was entered in last year's DSIC case an error was discovered in the calculation of the Accumulated Deferred Income Tax (ADIT) amount for the stipulated 2017 DSIC component.

recovery. In future DSIC cases, the parties may take whatever positions they choose on whether certain investments or categories of investment should be established as being eligible for DSIC rate recovery. Joint Stipulation at ¶ 8(k); Tr. at 33-34.

The Stipulating Parties recommended that the Commission approve the first revision of Tariff Sheet No. 27 and the other tariff sheets that incorporate revised Tariff Sheet No. 27 by reference, as they appeared in Attachment D to the Joint Stipulation, to be effective for service rendered on and after January 1, 2018. Joint Stipulation at ¶ 9; Tr. at 36.

WVAWC agreed to keep in place several consumer protections that were part of the settlement of the 2017 DSIC case. Joint Stipulation at ¶ 8(m); Tr. at 34-35. The protections address the DSIC program's relationship to base rate cases, provide for annual and cumulative caps, and establish an earnings test. Id.

The Stipulating Parties also agreed that the Commission should not waive the requirements of Rule 26 of the Commission Rules of Practice and Procedure, 150 C.S.R. Series 1, for WVAWC to file certain information with a certificate application, but should extend the time periods to file that information: WVAWC will file engineering plans and specifications at the 80 percent completion stage, engineering plans and specs will be filed at least 60 days prior to the beginning of construction, and items other than engineering plans and specifications will be filed as they are finalized or become available. Joint Stipulation at ¶ 8(l); Tr. at 34. Id.

A joint stipulation is a recommendation by the stipulating parties as to what they recommend as a reasonable settlement of the issues for consideration by the Commission. Appalachian Power Co. & Wheeling Power Co., Case No. 14-0546-E-PC, Comm'n Order at 15, Conclusion of Law ¶ 1 (Dec. 30, 2014). The Commission appreciates the efforts of the parties to reach a just and reasonable settlement in these cases.

Each of the Stipulating Parties recommended that the Commission adopt the Joint Stipulation as being in the public interest. Joint Stipulation at ¶ 13. Mr. Bruce testified at the evidentiary hearing that the settlement was fair, reasonable, and in the public interest, and asked the Commission to accept it. Tr. at 36 (Oct. 11, 2017). Staff and CAD also recommended at the hearing that the Commission adopt the Joint Stipulation, indicating that it was in the public interest and a result of compromise. Id. at 46-48.

The full record in this case establishes that the terms and conditions of the Joint Stipulation, including the proposed expenditures and the associated rate requirements that are set forth in the revised First Revision of Sheet No. 27 and related tariff sheets attached to the Joint Stipulation as Attachment D, are just, reasonable, and in the public interest. Accordingly, the Commission will adopt the Joint Stipulation attached to this Order in resolution of the issues presented in these cases.

FINDINGS OF FACT

1. On April 14, 2017, WVAWC filed for a certificate of public convenience and necessity to construct certain additions and improvements to West Virginia-American Water Company's Weston and Webster Springs systems. Weston-Webster Springs Project Application at 1-14 & attachments.
2. On June 15, 2017, WVAWC filed for approval of a revised DSIC rate component to take effect on January 1, 2018. 2018 DSIC Application at 1-15 & attachments.
3. WVAWC published proper notice in each of the counties where it provides service and provided evidence of proper notice to the Commission. May 18, 2017 and October 12, 2017 Affidavits of Publication Filings.
4. The Stipulating Parties recommended that the Commission grant a certificate of public convenience and necessity under W. Va. Code § 24-2-11 for the Weston-Webster Springs Project. Joint Stipulation at ¶ 8(a).
5. The Stipulating Parties recommended that the Commission authorize WVAWC's 2018 DSIC revenue requirement in the amount of \$4,308,888. Joint Stipulation at ¶ 8(c).
6. The Stipulating Parties supported the Joint Stipulation as a reasonable resolution of this case. Joint Stipulation at ¶ 8.

CONCLUSIONS OF LAW

1. The terms and conditions of the Joint Stipulation are just, reasonable and in the public interest.
2. The Weston-Webster Springs Project Certificate Application should be granted pursuant to W. Va. Code § 24-2-11.
3. The 2018 DSIC revenue increase of \$2,797,997, calculated using the amounts and methods shown in Attachment A to the Joint Stipulation, is fair, reasonable and in the public interest considering that the federal income tax costs included therein will be trued-up in the future to reflect income taxes pursuant to the laws in effect at that time.
4. The Joint Stipulation properly balances the interests of WVAWC, its customers, and the State.
5. The Commission should adopt the Joint Stipulation to resolve all of the issues presented in these cases.

ORDER

IT IS THEREFORE ORDERED that the Joint Stipulation attached to this Order as Appendix A is approved and adopted in full resolution of these cases.

IT IS FURTHER ORDERED that WVAWC is granted a certificate of public convenience and necessity, pursuant to W. Va. Code § 24-2-11, to construct and operate the Interconnection, as is more fully described in the Certificate Application and testimony in this proceeding.

IT IS FURTHER ORDERED that WVAWC shall prepare and file, within fifteen days of the date of this Order, an original and six copies of its DSIC tariff sheet, to be effective for all services rendered on and after January 1, 2018, reflecting the approved DSIC rate component of each tariff schedule.

IT IS FURTHER ORDERED that these proceedings be removed from the Commission docket of active cases on entry of this Order.

IT IS FURTHER ORDERED that the Executive Secretary of the Commission serve a copy of this Order by electronic service on all parties of record who have filed an e-service agreement, and by United States First Class Mail on all parties of record who have not filed an e-service agreement, and on Commission Staff by hand delivery.

A True Copy, Teste,



Ingrid Ferrell
Executive Secretary

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APPENDIX APUBLIC SERVICE COMMISSION
OF WEST VIRGINIA
CHARLESTON

CASE NO. 17-0466-W-CN

WEST VIRGINIA-AMERICAN WATER COMPANY

Application for Certificates of Convenience and
Necessity for the Construction of Certain Facilities

Case No. 17-0787-W-DSIC

09:45 AM OCT 11 2017 PSC EXEC SEC DIV

WEST VIRGINIA-AMERICAN WATER COMPANY

Application for approval of the 2018 Distribution System
Improvement Charge**JOINT STIPULATION AND AGREEMENT FOR SETTLEMENT**

Pursuant to W. Va. Code § 24-1-9(f) and Procedural Rule 13(d), West Virginia-American Water Company ("Company"), the Staff of the Public Service Commission of West Virginia ("Staff"), and the Consumer Advocate Division of the Commission ("CAD") (collectively, the "Parties") join in this Joint Stipulation and Agreement for Settlement ("Joint Stipulation").

In this Joint Stipulation, the Parties propose a comprehensive settlement of the Company's pending applications for approval of (1) certificates of convenience and necessity to construct certain additions and improvements to its Weston and Webster Springs systems ("W-WS Project"), docketed as Case No. 17-0466-W-CN; and (2) a 2018 Distribution System Improvement Charge ("2018 DSIC"), docketed as Case No. 17-0787-W-DSIC. The Parties

recommend that the Commission approve the Joint Stipulation without modification to approve the W-WS Project and authorize the 2018 DSIC.

09:45 AM OCT 11 2017 PSC EXEC SEC DIV

Introduction and Procedural History

1. On April 14, 2017, the Company filed an Application for Certificates of Convenience and Necessity to construct the W-WS Project ("W-WS Project Application"). The Company specifically sought approval to (1) decommission its antiquated Webster Springs Plant by connecting the customers that it currently serves to the Company's Weston Plant (the "Interconnection") and (2) make necessary upgrades to expand its Weston Plant. The Company supported the W-WS Project Application with prefiled direct testimony and exhibits.

2. On June 15, 2017, the Company filed an Application for approval of its 2018 DSIC ("DSIC Application"), supported by prefiled direct testimony and exhibits.

3. CAD filed Petitions to Intervene in Case Nos. 17-0466-W-CN and 17-0787-W-DSIC on June 9, 2017 and June 26, 2017, respectively.

4. In its July 7, 2017 Order, the Commission approved CAD's Petition to Intervene in Case No. 17-0466-W-CN.

5. In its August 10, 2017 Order, the Commission approved CAD's Petition to Intervene in Case No. 17-0787-W-DSIC, adopted a procedural schedule to process both cases, and directed the Company to publish a notice of filing in each of the counties in which it provides service.

6. The Parties filed the testimony of these witnesses:

Company: Brian K. Bruce, Brett W. Morgan, John S. Tomac, and Shelley R. Porter

Staff: Jonathan M. Fowler and David L. Pauley

CAD: Ralph C. Smith

7. The Parties undertook an investigation of both Applications and their various attachments, and the Staff filed data requests to clarify aspects of the filing. Based on their respective analyses of these materials, and after settlement discussions, the Parties now recommend approval of the W-WS Project, the 2018 DSIC, and implementation of the 2018 DSIC Rate Component, subject to the terms and conditions set forth in this Joint Stipulation.

Settlement Terms

8. The Parties agree and recommend that the Commission adopt the Joint Stipulation as a basis for its resolution of these cases. The terms and conditions of the Joint Stipulation, each of which is an essential and integral element of a fair and reasonable resolution of this case in the public interest, are set forth below:

- a. The Commission should grant a certificate of public convenience and necessity under W. Va. Code §24-2-11 for the Weston Plant Upgrade (as defined in the W-WS Project Application) and the Interconnection.
- b. The 2018 DSIC should be established to become effective January 1, 2018.
- c. The 2018 DSIC Rate Component revenue requirement calculation should be \$4,308,888, as set forth in as Attachment A to this Joint Stipulation, which includes revised versions of Schedules A through G of Exhibit 7 to the DSIC Application.

- d. No costs associated with the W-WS Project will be recovered in the 2018 DSIC. The Company will not seek recovery of costs associated with W-WS Project in any subsequent DSIC application.
- e. The purpose of the Interconnection is to provide water service to current Webster Springs customers when the existing Webster Springs treatment plant is taken out of service. Construction of the Interconnection is expected to take place over a three- to four-year period. In lieu of its inclusion as a DSIC project, the Company will be permitted to accrue AFUDC on its investment in the Interconnection during the Interconnection construction period. The Interconnection will not be deemed to be in service, and its construction period will not be deemed to have ended, until current Webster Springs customers first receive water service from it and the Webster Springs treatment plant is taken out of service. The deemed construction period and the deemed in-service date for the Interconnection will not be affected by the potential connection of new customers to portions of the Interconnection during the construction period; however, Company investment in any such customer's tap will be closed to utility plant and will not be considered to be part of the Interconnection investment for the purpose of computing AFUDC.
- f. The Commission should approve the Company's revised projections of 2018 DSIC investment as set forth in revised versions of Exhibit 4 and Exhibit 7 (2018 SCEP) to the DSIC Application, attached to this Joint Stipulation as Attachment B and Attachment C, respectively. As compared with the Company's projected 2018 investment as initially proposed, Attachments B and C to this Joint

Stipulation exclude the \$5,000,000 in 2018 investment identified as “Weston to Webster Springs Interconnect” on Exhibit 2 the DSIC Application and rededicate \$3,000,000 to additional 2018 main replacement projects. As compared with the 2018 DSIC rate base of \$36,099,928 in the DSIC Application, the revised 2018 DSIC rate base is \$35,066,170, a reduction of \$1,033,758.

- g. For purposes of settlement in these proceedings only, calculation of the 2018 DSIC Component does not include a provision for uncollectibles expense. The Parties are free to take whatever position they choose on the question of recoverability of uncollectibles expense in future DSIC proceedings.
- h. The changes identified in paragraphs 8.f and 8.g above reduce the 2018 DSIC Rate Component revenue requirement by \$171,797, to \$4,308,888 from \$4,480,685. This represents an increase of 3.15% over current base rates, as compared with the 3.28% increase proposed in the DSIC Application. For an average residential customer, the monthly increase is reduced to \$0.98 from the \$1.04 increase proposed in the DSIC Application.
- i. The Company will file future applications for DSIC recovery and true-up no later than July 1st and include schedules in the format and substance of Attachments B and C, showing the level and detail of the proposed DSIC investment.
- j. The Company recognizes that distribution system renewal and replacement is a significant priority and in the public interest. The Company will continue to employ a process to identify and prioritize distribution system main replacement through the DSIC.

- k. At paragraph 5 of the DSIC Application, the Company proposed that a definition of “DSIC Facilities” be established. The Parties agree and recommend that at this time, the Commission should not establish distinct categories of utility investment eligible for DSIC rate recovery (or by omission, not eligible for it). In future DSIC cases, the Parties may take whatever positions they choose on whether a proposed investment should be eligible for DSIC rate recovery or whether one or more distinct categories of utility investment eligible for DSIC rate recovery should be established.
- l. The Commission should not grant the Company’s request to waive the requirement to file information required by Rule 26 of the Commission’s Rules of Practice and Procedure including those required by Rule 26.6 (certain maps); Rule 26.8 (permits and approvals); Rule 26.12.b (user agreements); Rule 26.13 (project plan drawings); Rule 26.14 (specifications); Rule 26.15 (maximum service elevation); and Rule 26.20 (SHPO clearance). The Commission should allow the Company an extension of time for filing these items, as follows: (1) engineering plans and specifications should be filed when they are at the “80% completion stage”, (2) engineering plans and specifications should be filed a minimum of 60 days prior to the beginning of construction, and (3) items other than engineering plans and specifications should be filed as they are finalized and/or become available.
- m. The DSIC will continue to be subject to the following consumer protections agreed to in the Joint Stipulation and Agreement for Settlement approved in the Company’s 2017 DSIC filing:

1. Relationship to Base Rate Cases. At no point will there be (i) utility plant assets that are simultaneously included in base rates and a DSIC Rate Component or (ii) a base rate that provides or will provide the Company with recovery of revenues associated with the revenue requirement on investments for which an DSIC Rate Component provides or will provide simultaneous recovery (and vice versa). Calculations of utility plant in service and revenue requirements in each base rate case and annual DSIC filing will include appropriate adjustments to ensure these outcomes do not occur. Notwithstanding these requirements, the Company may have a base rate case and a DSIC filing simultaneously pending before the Commission, and the pendency of one such case will not preclude or delay the Company's filing of the other or the Commission's adjudication of it.
2. Annual Cap of 3.75%. In each annual DSIC filing or amendment to an DSIC filing, the DSIC Rate Component proposed to be collected in the succeeding annual period (inclusive of the impact of any reconciliation scheduled for implementation during that period) will be limited to an amount that does not exceed three and three-quarters percent (3.75%) of the revenue requirement authorized in the most recent base rate case.
3. Cumulative Cap of 7.5%. In each annual DSIC filing or amendment to an DSIC filing, the DSIC Rate Component proposed to be collected in the succeeding annual period (inclusive of the impact of any reconciliation scheduled for implementation during that period) will be limited to an amount that, when combined with the percentage increase(s) implemented through previous DSIC filings since the most recent rate case, does not exceed seven and one-half

percent (7.5%) of the revenue requirement authorized in the most recent base rate case.

4. Earnings Test. The Company will not be permitted to implement a DSIC Rate Component after an DSIC investment base reset following a base rate case order or, if an annual DSIC Rate Component is already in place, to increase the existing DSIC Rate Component with a subsequent calendar year's incremental projected investment in DSIC Facilities, if the Company's achieved return on average equity investment, as reflected in its audited financial statements for the preceding calendar year prepared using generally accepted accounting principles and measured on a calendar year basis, exceeds the authorized return on common equity set in the Company's most recent base rate case. If one of these situations occurs, then the Company will still make its DSIC filing for purposes of maintaining the existing DSIC Rate Component (if any) and addressing any needed reconciliations of costs and revenues from previous years. The Parties are free to take whatever position they choose on the question of the appropriate calculation of earnings to be considered in the earnings test for consumer protections.

9. The Parties agree and recommend that the Commission approve a revised form of Original Sheet No. 26 attached as Attachment D to this Joint Stipulation and the various other tariff sheets that incorporate by reference Original Sheet No. 26, all to be effective for service rendered on and after January 1, 2018.

General Provisions

10. The Parties support this Joint Stipulation and represent that each of its provisions acceptably resolves all issues raised in these cases. Based on the record, the Parties recommend that the Commission accept this Joint Stipulation in resolution of these cases.

11. The Parties represent that the Parties' pre-filed evidence and exhibits, as well as the testimony to be offered in sponsorship of this Joint Stipulation, is adequate to support the Joint Stipulation. The Parties ask that the pre-filed testimony and exhibits be admitted into the evidentiary record without the necessity of each witness's sponsorship or attendance at hearing.

12. This Joint Stipulation results from a review of all evidence and filings in this case, the Parties' analyses of the Applications, exhibits, and testimony, and good faith negotiation. The Joint Stipulation is proposed to expedite and simplify the resolution of this case in the context of an overall settlement.

13. The Parties recommend that the Commission adopt this Joint Stipulation as being in the public interest, without adopting or recommending the adoption of any of the compromise positions set forth herein as ratemaking principles applicable to future regulatory proceedings, except as may otherwise be provided herein. The terms of this Joint Stipulation reflect a negotiated compromise among the Parties and do not establish a precedent on any matter other than as provided herein. Each component of the Joint Stipulation (including this paragraph) is integral to and inseparable from the others, and no Party advocates the Commission's resolution of any issue proposed in this Joint Stipulation other than in the context of its support for the Joint Stipulation as a whole. The Parties to the Joint Stipulation are free to

take whatever positions they deem appropriate in any future DSIC proceedings, and do not waive any questions of fact or law that were presented in this cases.

14. This Joint Stipulation is subject to the Commission's acceptance and approval. It will be ineffective until and unless approved by the Commission in all of its material terms and without modification. If the Commission does not grant that approval, then the Parties reserve their rights to fully advocate their positions, unlimited by the terms of the Joint Stipulation.

Attachment A (1 of 13)

WEST VIRGINIA AMERICAN WATER COMPANY CALCULATION OF PROPOSED DSIC COMPONENT
--

Exhibit No. 7
Schedule A

<u>Line No.</u>	<u>Description</u>	<u>Schedule</u>	<u>2017 Amount</u>	<u>2018 Amount</u>
1	Capital Additions	B	\$14,497,118	\$42,983,387
2	Accumulated Depreciation	D	(252,514)	(961,551)
3	Net Plant		14,244,603	42,021,836
4	ADIT	E	(44,239)	(322,261)
5	Depreciation Offset	D	(2,034,265)	(6,633,405)
6	Total Investment Base for the DSIC		\$12,166,100	\$35,066,170
7				
8	Rate of Return on Investment Base	C	7.310%	7.310%
9	Cost of Investments		\$889,342	\$2,563,337
10	Depreciation Expense	D	252,514	709,036
11	Property Tax		0	0
12	State Tax	F	0	0
13	FIT	F	293,838	846,924
14	Revenue Requirement before B&O Tax		\$1,435,694	\$4,119,297
15	Gross-up for B&O Tax (100% - 4.4%)		95.60%	95.60%
16	Revenue Requirement		\$1,501,772	\$4,308,888
17				
18				
19	Allowed Revenues - Order:			
20	Metered Water Sales	G	\$136,393,303	\$136,393,303
21	Less: Sales for Resale	G	1,948,900	1,948,900
22	Add: Metered Sales for Resale	G	653,121	653,121
23	Add: Private Fire Service	G	1,526,017	1,526,017
24	Base Revenues for DSIC Component		<u>\$136,623,541</u>	<u>\$136,623,541</u>
25				
26	DSIC Components		1.10%	3.15%

Attachment A (2 of 13)

ESTIMATED ANNUAL INVESTMENT FOR USE IN THE DSIC COMPONENT
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Exhibit No. 7

Schedule B

Line No.	Item	Capital Expenditures		
		Annual <u>2017</u>	Annual <u>2018</u>	Cumulative <u>2018</u>
1	T & D MAINS	\$18,060,975	\$21,521,554	\$28,821,752
2	HYDRANTS	799,679	818,440	\$1,208,899
3	STANDPIPES	7,000,000	2,400,000	\$8,200,000
4	SERVICES	3,133,581	3,238,310	\$4,752,736
		<u>\$28,994,235</u>	<u>\$27,978,304</u>	<u>\$42,983,387</u>

		Average <u>2017</u>	Average <u>2018</u>
1	T & D MAINS	\$9,030,488	\$10,760,777
2	HYDRANTS	399,840	409,220
3	STANDPIPES	3,500,000	1,200,000
4	SERVICES	1,566,791	1,619,155
		<u>\$14,497,118</u>	<u>\$13,989,152</u>

* Please see 2017 SCEP tabs for details

Attachment A (3 of 13)

COST OF CAPITALExhibit No. 7
Schedule C

Line No.	<u>Rate Order Capital Structure and Cost of Capital</u>				
		<u>Weight</u>	<u>Rate</u>	<u>Weighted Rate</u>	<u>With Tax Gross-up 1/</u>
1	ST Debt	6.470%	0.560%	0.036%	0.036%
2	LT Debt	47.502%	5.870%	2.788%	2.788%
3	Preferred Stock	0.190%	8.930%	0.017%	0.028%
4	Common Equity	<u>45.838%</u>	9.750%	<u>4.469%</u>	<u>7.354%</u>
		100.000%			
5	ROR			7.31%	10.206%
6	_1/				
7	State Tax Rate (STR)		0.065		
8	Federal Tax Rate (FTR)		0.35		
9	Gross up factor = $1 / \{(1-STR) - [(1-STR) \times FTR]\}$			1.6454	

Attachment A (4 of 13)

Exhibit No. 7
Schedule D**DEPRECIATION EXPENSE - 2017**

Line No.		T&D Mains	Hydrants	Services	Standpipes	Total
1	Total Projected Capital Expenditure	\$18,060,975	\$799,679	\$3,133,581	\$7,000,000	\$28,994,235
2	Average Investment	\$9,030,488	\$399,840	\$1,566,791	\$3,500,000	\$14,497,118
3	Annual Depreciation Rates	1.230%	1.830%	1.680%	3.080%	
4		\$111,075	\$7,317	\$26,322	\$107,800	\$252,514
5	Cumulative Depreciation Expense 2017					<u>\$252,514</u>

Depreciation Expense Included in Case No. 15-0676-W-42T**Calculation of Offset - 2017**

6	Depr. Case Order Expense - 2017 (Sched. H)	\$2,493,529	\$117,524	\$695,276	\$762,200	\$4,068,529
7	Offset Year One - (1/2 yr. for 2017 above)					<u>\$2,034,265</u>

DEPRECIATION EXPENSE - 2018

Line No.		T&D Mains	Hydrants	Services	Standpipes	Total
8	Total Projected Capital Expenditure	\$21,521,554	\$818,440	\$3,238,310	\$2,400,000	\$27,978,304
9	Average Investment	\$10,760,777	\$409,220	\$1,619,155	\$1,200,000	\$13,989,152
10	Annual Depreciation Rates	1.230%	1.830%	1.680%	3.080%	
11		\$132,358	\$7,489	\$27,202	\$36,960	\$204,008
12	Cumulative Depreciation Expense 2018 (2017 1/2 year +2017 full year +2018 half year) for offset					<u>\$961,551</u>
13	Cumulative Depreciation Expense 2018 (2017 full year +2018 half year) for Expense					<u>\$709,036</u>

Depreciation Expense Included in Case No. 15-0676-W-42T

14	Depr. Case Order Expense - 2018 (Sched. H)	\$2,542,505	\$117,491	\$697,499	\$762,200	\$4,119,695
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Calculation of Offset - 2018

15	Offset Year Two - (1/2 yr. for 2018 above)					2,059,848
16	Add: Offset 2017 Annual	\$2,493,529	\$117,524	\$695,276	\$762,200	4,068,529
17	Add: Incremental Depr. Exp. 2017 (annual)	222,150	14,634	52,644	215,600	505,028
18	Offset Year 2 - 2018					<u>\$6,633,405</u>

Attachment A (6 of 13)

Exhibit No. 7
Schedule F**CALCULATION OF FEDERAL AND STATE INCOME TAXES**

FEDERAL INCOME TAX

Line No.	Description	2017	2018
1	Investment Base for DSIC	\$12,166,100	\$35,066,170
2	Rate of Return	7.310%	7.310%
3	Return on Rate Base	\$889,342	\$2,563,337
4	Adjustments		
5	Interest Expense	(343,644)	(990,479)
6	Temporary Deductions	(12,078,415)	(9,386,946)
7	Federal Taxable Income	(\$11,532,717)	(\$7,814,088)
8	Federal Tax Rate	35%	35%
9	Current Federal Tax	(\$4,036,451)	(\$2,734,931)
10	Add Deferred Federal Tax @ 35%	4,227,445	3,285,431
11	Total Federal Tax	\$190,994	\$550,500
12	Gross-up Federal Income Tax (Line 11/65%)	\$293,838	\$846,924
13	Interest Expense		
14	Investment Base for DSIC	\$12,166,100	\$35,066,170
15	Weighted Cost of Debt	2.82%	2.82%
		\$343,644	\$990,479

STATE INCOME TAX

16	Federal Taxable Income	(\$11,532,717)	(\$7,814,088)
17	Gross-up Federal Tax	293,838	846,924
18	State Taxable Income	(\$11,238,879)	(\$6,967,164)
19	Tax Gross-up Rate (100.0 - 6.50)	0.935	0.935
20	Gross-up Taxable	(\$12,020,192)	(\$7,451,512)
21	State Tax Amount (Line 19 less Line 17)	(\$781,312)	(\$484,348)
22	Negative State Tax - Use zero	\$0	\$0
23	Deferred Tax Asset - NDL	\$4,036,451	\$2,734,931
24	Cumulative Balance	\$4,036,451	\$6,771,382

* Note - Line 9 Current Federal Tax is a negative number and as a result a deferred tax asset will be charged for this amount.

Attachment A (7 of 13)

WEST VIRGINIA AMERICAN WATER COMPANY
WATER BILL ANALYSIS
SUMMARY of all REVENUES
For the Twelve Months Ended December 31, 2014

Exhibit No. 7
 Schedule G
 Page 1 of 2

Line
 No.

	CONSUMPTION - 100 GALLONS			REVENUES			ORDER		
	PER BOOKS	GOING-LEVEL	ORDER	PER BOOKS	GOING-LEVEL	ORDER	INCREASE	PERCENTAGE	
1									
2									
3									
4									
5	RESIDENTIAL	62,825,255	61,833,121	61,833,121	\$82,729,246	\$81,809,153	\$94,162,335	\$12,353,182	15.10%
6	COMMERCIAL	21,707,592	21,707,592	21,707,592	23,000,964	23,024,612	26,501,328	3,476,716	15.10%
7	INDUSTRIAL	11,432,117	11,432,117	11,432,117	6,618,921	6,364,589	7,325,642	961,053	15.10%
8	OTHER PUBLIC AUTHORITY	5,830,859	5,830,859	5,830,859	5,633,767	5,608,251	6,455,097	846,846	15.10%
9	OTHER WATER UTILITY	6,425,486	6,812,779	6,812,779	1,807,611	1,863,212	1,948,901	85,689	4.60%
10	MISCELLANEOUS	0	0	0	-	-	0	0	0.00%
11									
12	METERED WATER SALES	108,221,309	107,616,468	107,616,468	\$119,790,509	\$118,669,817	\$136,393,303	\$17,723,486	14.94%
13									
14	PRIVATE FIRE SERVICE				\$1,421,905	\$1,325,818	\$1,526,017	\$200,199	15.10%
15	PUBLIC FIRE SERVICE				394,179	352,284	352,284	0	0.00%
16									
17	TOTAL WATER SALES	108,221,309.4	107,616,468	107,616,467.6	\$121,606,593	\$120,347,919	\$138,271,604	\$17,923,685	14.89%
18									
19	FORFEITED DISCOUNTS				\$2,233,640	\$2,215,070	\$2,461,322	\$246,252	11.12%
20	OTHER WATER REVENUE				189,073	924,821	924,821	0	0.00%
21	RENTS FROM WATER PROPERTY				767,167	690,518	690,518	0	0.00%
22	MISC AND OTHER - INCLUDES LOCAL B & O TAXES				2,739,503	2,797,884	2,797,884	0	0.00%
23									
24	TOTAL OPERATIONS	108,221,309.4	107,616,468	107,616,467.6	\$127,535,976	\$126,976,212	\$145,146,149	\$18,169,937	14.31%

Proof of Revenues in Order:

Order Amount	\$143,955,276
State B & O Tax	836,071
Uncollectibles	354,802
	<u>\$145,146,149</u>

Attachment A (8 of 13)

OTHER WATER UTILITY BILL CLASS

JST Exhibit -1
Schedule G
Page 2 of 2

Line No.

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5/8 -inch meter
3/4-inch meter
1 -inch meter
1 1/2 -inch meter
2 -inch meter
3 -inch meter
4 -inch meter
6 -inch meter
8 -inch meter

First 1,500 gallons
Next 28,500 gallons
Next 870,000 gallons
Next 8,100,000 gallons
All over 9,000,000 gallons

Subtotal

Add Aqua Water

Add Humicane
Add Lavalette
Add Jane Lew
Add Lincoln

Less: Corrections and Allowances
Total Per Bill Analysis
Correction Factor
Per Books

Per Books		
Rates		
Billing	Effective	Revenues
Determinants	October 11, 2013	
13	\$23	\$302
	23.20	0
	56.86	0
	112.94	0
38	180.29	6,851
	337.38	0
	561.79	0
12	1,122.83	13,474
	1,796.10	0
623		
11,090	1.02911	11,413
323,053	0.67159	216,959
707,870	0.51578	365,105
	0.36353	
1,042,636		\$614,104
2,441,300	\$0.2490	\$607,884
67,616	0.2000	13,523
2,223,270	0.1640	364,616
571,265	Various	190,834
79,399	0.2130	16,912
6,425,486		\$1,807,873
		0.9998550
		\$1,807,611

Going Level		
Rates		
Billing	Effective	Revenues
Determinants	October 11, 2013	
12	\$23.20	\$278.00
	23.20	0
	56.86	0
	112.94	0
36	180.29	6,490
	337.38	0
0	561.79	0
12	1,122.83	13,474
	1,796.10	0
584		
10,285	1.02911	10,584
298,503	0.67159	200,472
651,700	0.51578	336,134
	0.36353	
961,072		\$567,432
2,441,300	\$0.2490	\$607,884
120,000	0.2000	24,000
2,223,270	0.1640	364,616
571,265	0.3390	193,659
495,871	0.2130	105,621
6,812,779		\$1,863,211
		1.0000003
		\$1,863,212

Order		
Rates		
Billing	Effective	Revenues
Determinants	February 25, 2016	
12	\$27	\$321
	26.72	0
	65.46	0
	129.99	0
36	207.51	7,470
	388.32	0
0	646.62	0
12	1,292.38	15,509
	2,067.31	0
584.4		
10,285.0	1.18526	12,190
298,503.0	0.77300	230,743
651,700.0	0.59366	386,888
	0.04184	
961,072.4		\$653,121
2,441,300	\$0.2490	\$607,884
120,000	0.2000	24,000
2,223,270	0.1640	364,616
571,265	0.3390	193,659
495,871	0.2130	105,621
6,812,779		\$1,948,900
		1.0000003
		\$1,948,901

Attachment A (9 of 13)

Exhibit No. 7
 Schedule H
 Page 1 of 2

Depreciation Offset 2017

Line No.	Item	Year	Investment Type	Amount	DSIC%
1	T & D MAINS				
2		2017	DSIC	\$18,060,975	
3		2017	Non-DSIC	5,583,509	
4				<u>\$23,644,484</u>	76.39%
5					
6	Order Depreciation Expense - 15-0674-WS-D				\$3,264,398
7	Offset Amount				2,493,529
8					
9					
10					
11	HYDRANTS				
12		2017	DSIC	\$799,679	
13		2017	Non-DSIC	121,500	
14				<u>\$921,179</u>	86.81%
15					
16	Order Depreciation Expense - 15-0674-WS-D				\$135,380
17	Offset Amount				117,524
18					
19					
20					
21	SERVICES				
22		2017	DSIC	\$3,133,581	
23		2017	Non-DSIC	1,520,240	
24				<u>\$4,653,821</u>	67.33%
25					
26	Order Depreciation Expense - 15-0674-WS-D				\$1,032,586
27	Offset Amount				695,276
28					
29					
30	STANDPIPES				
31		2017	DSIC	\$7,000,000	
32		2017	Non-DSIC	0	
33				<u>\$7,000,000</u>	100.00%
34					
35	Order Depreciation Expense - 15-0674-WS-D				\$762,200
36	Offset Amount				762,200

Attachment A (10 of 13)

Exhibit No. 7
 Schedule H
 Page 1 of 2

Depreciation Offset 2017

Line No.	Item	Year	Investment Type	Amount	DSIC%
1	T & D MAINS				
2		2017	DSIC	\$18,060,975	
3		2017	Non-DSIC	5,583,509	
4				\$23,644,484	76.39%
5					
6	Order Depreciation Expense - 15-0674-WS-D				\$3,264,398
7	Offset Amount				2,493,529
8					
9					
10					
11	HYDRANTS				
12		2017	DSIC	\$799,679	
13		2017	Non-DSIC	121,500	
14				\$921,179	86.81%
15					
16	Order Depreciation Expense - 15-0674-WS-D				\$135,380
17	Offset Amount				117,524
18					
19					
20					
21	SERVICES				
22		2017	DSIC	\$3,133,581	
23		2017	Non-DSIC	1,520,240	
24				\$4,653,821	67.33%
25					
26	Order Depreciation Expense - 15-0674-WS-D				\$1,032,586
27	Offset Amount				695,276
28					
29					
30	STANDPIPES				
31		2017	DSIC	\$7,000,000	
32		2017	Non-DSIC	0	
33				\$7,000,000	100.00%
34					
35	Order Depreciation Expense - 15-0674-WS-D				\$762,200
36	Offset Amount				762,200

Attachment A (11 of 13)

American Water
Calculation of Tax Basis and Tax Depreciation

Exhibit No. 7
Schedule I

		2017										
		A	B	A x C = D	E	A - B - E = F	A-B-D-E = G	G x 50% = H	F - H = I	I * Rate	I * Rate	
		In-Srv CapEx	Non Taxable Advances & Contributions	In-Srv CapEx Net of Advances & Contributions	Bldgs, Land, & Intangibles	Repairs	Adds Net of Repairs	Eligible for Bonus	Bonus @ 50%	Remaining Adds Basis after Bonus Deduct	Regular Deprc YR 1	Regular Deprc YR 2
WV-American Water	1028	28,994,235		28,994,235		4,815,942	24,178,293	24,178,293	12,089,146	12,089,146	241,783	483,566

Note that the repairs % is based on an 8 year average including the 2015 tax return adjustment.

		2018										
		A	B	A x C = D	E	A - B - E = F	A-B-D-E = G	G x 40% = H	F - H = I	I * Rate	I * Rate	
		In-Srv CapEx	Non Taxable Advances & Contributions	In-Srv CapEx Net of Advances & Contributions	Bldgs, Land, & Intangibles	Repairs	Adds Net of Repairs	Eligible for Bonus	Bonus @ 40%	Remaining Adds Basis after Bonus Deduct	Regular Deprc YR 1	Regular Deprc YR 2
WV-American Water	1028	27,978,304		27,978,304		4,647,196	23,331,108	23,331,108	9,332,443	13,998,665	279,973	559,947

Attachment A (12 of 13)

STRATEGIC CAPITAL EXPENDITURE PLAN Program
West Virginia

EXHIBIT NO. 7
2017 SCEP

2017 DSIC Component

Business Unit No.	Project Title	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	Total 2017 CAPEX Budget
RECURRING PROJECTS														
B	Mains - Replaced / Restored	\$227,500	\$169,000	\$342,500	\$856,500	\$1,206,000	\$1,257,581	\$1,325,812	\$1,197,623	\$1,041,252	\$576,232	\$332,500	\$227,500	\$8,760,000
B	Mains - Replaced / Restored - Additional Spend	\$234,000	\$173,700	\$351,900	\$980,200	\$1,238,499	\$1,292,400	\$1,361,700	\$1,230,300	\$1,070,100	\$592,200	\$342,000	\$234,000	\$9,001,000
D	Mains - Relocated	0	0	97,500	52,000	138,775	5,850	5,850	0	0	0	0	0	299,975
F	Hydrants, Valves, and Manholes - Replaced	46,920	59,840	83,640	86,769	67,012	86,534	51,200	72,080	64,600	70,444	50,320	50,320	799,679
H	Services and Laterals - Replaced	201,630	232,018	234,520	247,390	269,841	305,941	306,735	306,020	315,315	301,015	218,676	194,480	3,133,581
Total Recurring Projects		\$710,050	\$634,558	\$1,110,060	\$2,122,859	\$2,920,127	\$2,948,306	\$3,061,297	\$2,806,023	\$2,491,267	\$1,539,891	\$943,496	\$706,300	\$21,994,235
INVESTMENT PROJECTS														
	Storage Tanks (Standpipes)				1,166,667	1,166,667	1,166,667	1,166,667	1,166,667	1,166,667				7,000,000
Total Investment Projects		\$0	\$0	\$0	\$1,166,667	\$1,166,667	\$1,166,667	\$1,166,667	\$1,166,667	\$1,166,667	\$0	\$0	\$0	\$7,000,000
Total DSIC CAPEX		\$710,050	\$634,558	\$1,110,060	\$3,289,526	\$4,086,794	\$4,114,973	\$4,227,964	\$3,972,690	\$3,657,934	\$1,539,891	\$943,496	\$706,300	\$28,994,235
Investments included in DSIC														
	Mains - Replaced / Restored / Relocated / Investment Projects	\$461,500	\$342,700	\$791,900	\$1,788,700	\$2,583,274	\$2,555,831	\$2,693,362	\$2,427,923	\$2,111,352	\$1,168,432	\$674,500	\$461,500	\$18,060,975
	Hydrants	46,920	59,840	83,640	86,769	67,012	86,534	61,200	72,080	64,600	70,444	50,320	50,320	799,679
	Standpipe	0	0	0	1,166,667	1,166,667	1,166,667	1,166,667	1,166,667	1,166,667	0	0	0	7,000,000
	Services	201,630	232,018	234,520	247,390	269,841	305,941	306,735	306,020	315,315	301,015	218,676	194,480	3,133,581
Total DSIC CAPEX		\$710,050	\$634,558	\$1,110,060	\$3,289,526	\$4,086,794	\$4,114,973	\$4,227,964	\$3,972,690	\$3,657,934	\$1,539,891	\$943,496	\$706,300	\$28,994,235

Attachment A (13 of 13)

STRATEGIC CAPITAL EXPENDITURE PLAN PROGRAM
West Virginia

EXHIBIT NO. 7
2018 SCEP

2018 DSIC Component

Business Unit No.	Project Title	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	Total 2018 CAPEX Budget
RECURRING PROJECTS														
B	Mains - Replaced / Restored	\$880,000	\$985,000	\$1,015,000	\$1,642,500	\$1,999,180	\$2,072,385	\$2,174,000	\$2,459,000	\$2,422,123	\$1,483,048	\$697,148	\$392,200	\$18,221,584
B	Mains - Replaced / Restored - Additional Spend				\$400,000	\$400,000	\$400,000	\$500,000	\$500,000	\$300,000	\$200,000	\$200,000	\$100,000	\$3,000,000
D	Mains - Relocated	0	0	97,500	52,000	138,770	5,850	5,850	0	0	0	0	0	299,970
F	Hydrants, Valves, and Manholes - Replaced	53,652	60,817	77,942	90,528	71,006	80,988	59,418	81,245	63,961	64,553	59,442	54,888	818,440
H	Services and Laterals - Replaced	222,833	250,627	254,394	264,306	277,014	319,200	306,332	300,137	287,385	313,450	228,987	213,645	3,238,310
	Total Recurring Projects	\$1,156,485	\$1,296,444	\$1,444,836	\$2,449,334	\$2,885,970	\$2,878,423	\$3,045,600	\$3,340,382	\$3,073,469	\$2,061,051	\$1,185,577	\$760,733	\$25,578,304
INVESTMENT PROJECTS														
128-140003	Weston to Webster Springs Regionalization													0
128-410006	Storage Tanks (Standpipes)	82,500	83,500	83,500	83,500	250,000	250,000	350,000	350,000	350,000	350,000	83,500	83,500	2,400,000
	Total Investment Projects	\$82,500	\$83,500	\$83,500	\$83,500	\$250,000	\$250,000	\$350,000	\$350,000	\$350,000	\$350,000	\$83,500	\$83,500	\$2,400,000
Total DSIC CAPEX		\$1,238,985	\$1,379,944	\$1,528,336	\$2,532,834	\$3,135,970	\$3,128,423	\$3,395,600	\$3,890,382	\$3,423,469	\$2,411,051	\$1,269,077	\$844,233	\$27,978,304
Investments included in DSIC														
Mains - Replaced / Restored / Relocated / Investment Projects		\$880,000	\$985,000	\$1,112,500	\$2,094,500	\$2,537,950	\$2,478,235	\$2,679,850	\$2,959,000	\$2,722,123	\$1,683,048	\$897,148	\$492,200	\$21,521,554
Hydrants		53,652	60,817	77,942	90,528	71,006	80,988	59,418	81,245	63,961	64,553	59,442	54,888	818,440
Standpipe		82,500	83,500	83,500	83,500	250,000	250,000	350,000	350,000	350,000	350,000	83,500	83,500	2,400,000
Services		222,833	250,627	254,394	264,306	277,014	319,200	306,332	300,137	287,385	313,450	228,987	213,645	3,238,310
Total DSIC CAPEX		\$1,238,985	\$1,379,944	\$1,528,336	\$2,532,834	\$3,135,970	\$3,128,423	\$3,395,600	\$3,890,382	\$3,423,469	\$2,411,051	\$1,269,077	\$844,233	\$27,978,304

Attachment B (1 of 4)

West Virginia American Water DISC 2018 Line B Projects Exhibit 4			Additional projects resulting from the removal of the W-WS Project are highlighted.						
No.	District	PROJECT INFORMATION Project Name	Estimated Project Cost				Existing Pipe		
			Proposed Length (feet)	Proposed Diameter (inches)	Proposed Estimated Cost	Decade Installed	Existing Length (feet)	Existing Diameter (inches)	Existing Material
1	2811-WV-Weston	Upper Kuntz Dr (Rep with 2" PVC)	500	2"	\$27,500	1960 thru 1979	500	< 6"	Pit Cast Iron
2	2811-WV-Weston	West 4th St	400	2"	\$24,000	1940 thru 1959	400	< 6"	Pit Cast Iron
3	2811-WV-Weston	N River and Catherine	1,265	2"	\$76,533	1940 thru 1959	1,265	< 6"	Pit Cast Iron
4	2812-WV-Gassaway	Plant to Tank	2,400	6"	\$199,303	1940 thru 1959	2,400	6" to 10"	Pit Cast Iron
5	2814-WV-Webster Springs	Main St (Courthouse to Hospital)	1,215	8"	\$73,312	1940 thru 1959	1,215	6" to 10"	Pit Cast Iron
6	2814-WV-Webster Springs	Union St	550	2"	\$45,100	1940 thru 1959	550	< 6"	Pit Cast Iron
7	2821-WV-Bluefield	East River, Shenandoah to Wythe Ave	1,000	6"	\$85,000	1960 thru 1979	1,000	< 6"	Pit Cast Iron
8	2821-WV-Bluefield	Valleyview to Shady Memorial	900	6"	\$60,000	1960 thru 1979	900	< 6"	Pit Cast Iron
9	2821-WV-Bluefield	Parkway Ave - Hillside Dr to Mountview	3,245	6"	\$185,398	1960 thru 1979	3,245	< 6"	Pit Cast Iron
10	2821-WV-Bluefield	Parkway Ave to Springgarden to Mountview	1,700	6"	\$120,000	1940 thru 1959	1,700	6" to 10"	Unlined Rigid Joint Spun Cast
11	2821-WV-Bluefield	Mountview Ave - Parkway	700	6"	\$55,000	1941 thru 1959	700	< 6"	Small Dia. Metal (galv. lead, copper)
12	2821-WV-Bluefield	Memorial to Springgarden	600	6"	\$45,000	1960 thru 1979	600	< 6"	SDR PVC
13	2821-WV-Bluefield	Memorial to Parkway	400	6"	\$29,000	1940 thru 1959	400	< 6"	Pit Cast Iron
14	2821-WV-Bluefield	Longview to Heatherwood	1,100	6"	\$105,000	1940 thru 1959	1,100	< 6"	Small Dia. Metal (galv. lead, copper)
15	2821-WV-Bluefield	Grandview Ave to Springdale to Verdon Heights	2,000	6"	\$125,000	1940 thru 1959	2,000	< 6"	Small Dia. Metal (galv. lead, copper)
16	2821-WV-Bluefield	Mountview Ave - to Heatherwood Rd	1,200	6"	\$85,000	1940 thru 1959	1,200	< 6"	Small Dia. Metal (galv. lead, copper)
17	2821-WV-Bluefield	Center St to Springgarden	700	6"	\$45,000	1940 thru 1959	700	< 6"	Small Dia. Metal (galv. lead, copper)
18	2821-WV-Bluefield	Sunset to Springdale	700	6"	\$100,000	1940 thru 1959	700	< 6"	Small Dia. Metal (galv. lead, copper)
19	2821-WV-Bluefield	Bland St to Powhatan	1,700	6"	\$100,000	1940 thru 1959	1,700	< 6"	Small Dia. Metal (galv. lead, copper)
20	2822-WV-Princeton	Northview - Athens Rd	2,900	6"	\$250,000	1940 thru 1959	2,900	< 6"	Small Dia. Metal (galv. lead, copper)
21	2822-WV-Princeton	Douglas from Springgrove to Union	1,800	6"	\$145,000	1940 thru 1959	1,800	< 6"	Small Dia. Metal (galv. lead, copper)
22	2822-WV-Princeton	Wright Mt to Farmhouse Rd	3,300	6"	\$250,000	1920 thru 1939	3,300	6" to 10"	Unlined Rigid Joint Spun Cast
23	2822-WV-Princeton	Wright Mt - Farmhouse Rd to Acres	3,500	6"	\$275,000	1940 thru 1959	3,500	< 6"	Pit Cast Iron
24	2823-WV-Fayetteville	1st Street	400	2"	\$22,000	1940 thru 1959	400	< 6"	Small Dia. Metal (galv. lead, copper)
25	2823-WV-Fayetteville	Lakota Road	550	2"	\$44,550	1940 thru 1959	550	< 6"	Small Dia. Metal (galv. lead, copper)
26	2823-WV-Fayetteville	Rt 60 Old Court Street	450	2"	\$23,400	1940 thru 1959	450	< 6"	Small Dia. Metal (galv. lead, copper)
27	2823-WV-Fayetteville	Red Star Road	7,600	6"	\$684,000	1940 thru 1959	7,600	< 6"	Asbestos Cement
28	2823-WV-Fayetteville	Sanger Road	100	2"	\$8,800	1940 thru 1959	100	< 6"	Small Dia. Metal (galv. lead, copper)
29	2823-WV-Fayetteville	Okey Patterson Tie Overs Mossy	0	0"	\$165,000	1940 thru 1959	1,875	< 6"	Small Dia. Metal (galv. lead, copper)
30	2823-WV-Fayetteville	Main Street	1,200	12"	\$114,000	1940 thru 1959	1,200	< 6"	Small Dia. Metal (galv. lead, copper)
31	2823-WV-Fayetteville	Church Street tie overs	0	0"	\$88,000	1940 thru 1959	1,000	< 6"	Small Dia. Metal (galv. lead, copper)
32	2823-WV-Fayetteville	Terry Ave	6,400	6"	\$563,200	1920 thru 1939	6,400	< 6"	Small Dia. Metal (galv. lead, copper)
33	2823-WV-Fayetteville	Nickville Road Tie Overs 30	0	0"	\$165,000	1940 thru 1959	1,875	< 6"	Small Dia. Metal (galv. lead, copper)
34	2823-WV-Fayetteville	Blake Street	2,500	8"	\$225,000	1940 thru 1959	2,500	< 6"	Small Dia. Metal (galv. lead, copper)
35	2824-WV-Bluestone	Beech Run - Animal Hosp to Whittaker Garage	1,650	8"	\$100,000	1940 thru 1959	1,650	< 6"	Small Dia. Metal (galv. lead, copper)
36	2824-WV-Bluestone	Madams Creek to Davis Rd	880	2"	\$45,000	1940 thru 1959	880	< 6"	Small Dia. Metal (galv. lead, copper)
37	2824-WV-Bluestone	Main Street - Hinton	2,650	8"	\$212,000	1940 thru 1959	2,650	< 6"	Pit Cast Iron
38	2824-WV-Bluestone	Terrace St -West of Broadway- Hinton	600	6"	\$38,000	1940 thru 1959	600	< 6"	Small Dia. Metal (galv. lead, copper)
39	2824-WV-Bluestone	Terrace St - Walnut - Hinton	200	6"	\$15,000	1940 thru 1959	200	< 6"	Small Dia. Metal (galv. lead, copper)
40	2824-WV-Bluestone	Walnut St - Hinton	1,020	2"	\$60,000	1940 thru 1959	1,020	< 6"	Small Dia. Metal (galv. lead, copper)
41	2824-WV-Bluestone	Railroad Ave - Hinton	650	2"	\$30,000	1940 thru 1959	650	< 6"	Small Dia. Metal (galv. lead, copper)
42	2824-WV-Bluestone	Sand Knob	1,800	8"	\$40,000	1940 thru 1959	1,800	< 6"	Small Dia. Metal (galv. lead, copper)
43	2824-WV-Bluestone	Ballenge St - Hinton	400	2"	\$12,000	1920 thru 1939	400	< 6"	Small Dia. Metal (galv. lead, copper)
44	2824-WV-Bluestone	Greenbrier Drive Hospital Project	4,500	8"	\$789,000	1940 thru 1959	4,500	6" to 10"	Pit Cast Iron
45	2825-WV-Montgomery	Fox Ave -Anstead	600	2"	\$39,000	1940 thru 1959	600	< 6"	Small Dia. Metal (galv. lead, copper)
46	2825-WV-Montgomery	Union Edition	500	6"	\$37,500	1920 thru 1939	500	< 6"	Pit Cast Iron
47	2825-WV-Montgomery	Hill Crest	700	2"	\$45,500	1920 thru 1939	700	< 6"	Pit Cast Iron
48	2825-WV-Montgomery	J-Row Cannelton	3,074	6"	\$230,550	1940 thru 1959	3,074	< 6"	Pit Cast Iron
49	2825-WV-Montgomery	Upper Morris Dr	1,100	6"	\$181,500	1920 thru 1939	1,100	< 6"	Pit Cast Iron
50	2825-WV-Montgomery	Cannelton Hollow	4,600	8"	\$760,929	1940 thru 1959	4,600	< 6"	Asbestos Cement

Attachment B (2 of 4)

West Virginia American Water DISC 2018 Line B Projects Exhibit 4			Additional projects resulting from the removal of the W-WS Project are highlighted.						
No.	District	PROJECT INFORMATION Project Name	Estimated Project Cost			Existing Pipe			
			Proposed Length (feet)	Proposed Diameter (inches)	Proposed Estimated Cost	Decade Installed	Existing Length (feet)	Existing Diameter (inches)	Existing Material
51	2831-WV-Kanawha Valley	Little Thorofare	2,000	2"	\$130,000	1940 thru 1959	2,000	< 6"	SDR PVC
52	2831-WV-Kanawha Valley	135th Street Mac-Venable	500	2"	\$32,500	1940 thru 1959	500	< 6"	Pit Cast Iron
53	2831-WV-Kanawha Valley	Venable Ave 135-136th Street	600	2"	\$39,000	1960 thru 1979	600	< 6"	Pit Cast Iron
54	2831-WV-Kanawha Valley	135th Street Mac-River	200	2"	\$13,000	1940 thru 1959	200	< 6"	Pit Cast Iron
55	2831-WV-Kanawha Valley	129th Street Mac-River	450	2"	\$29,250	1960 thru 1979	450	< 6"	Pit Cast Iron
56	2831-WV-Kanawha Valley	128th Street Mac-River	500	2"	\$32,500	1940 thru 1959	500	< 6"	Pit Cast Iron
57	2831-WV-Kanawha Valley	Ohio Ave 126-132nd Street	1,500	6"	\$112,500	1960 thru 1979	1,500	< 6"	Pit Cast Iron
58	2831-WV-Kanawha Valley	Venable Ave 115-118th Street	2,000	6"	\$150,000	1960 thru 1979	2,000	< 6"	Pit Cast Iron
59	2831-WV-Kanawha Valley	Alley Off 115th Street Near River	300	2"	\$19,500	1940 thru 1959	300	< 6"	Pit Cast Iron
60	2831-WV-Kanawha Valley	California Ave 87-91st Ave	1,600	6"	\$120,000	1940 thru 1959	1,600	< 6"	Small Dia. Metal (galv. lead, copper)
61	2831-WV-Kanawha Valley	85th Street	1,800	6"	\$135,000	1960 thru 1979	1,800	< 6"	Pit Cast Iron
62	2831-WV-Kanawha Valley	4800-5900 Raven Drive	6,400	6"	\$480,000	1940 thru 1959	6,400	6" to 10"	Pit Cast Iron
63	2831-WV-Kanawha Valley	Starling Drive, Rand	2,500	6"	\$187,500	1940 thru 1959	2,500	< 6"	Pit Cast Iron
64	2831-WV-Kanawha Valley	W Riverview Dr From Kanawha to End	600	2"	\$39,000	1960 thru 1979	600	< 6"	Pit Cast Iron
65	2831-WV-Kanawha Valley	W Reynolds From Kanawha to End	900	2"	\$58,500	1960 thru 1979	900	< 6"	Pit Cast Iron
66	2831-WV-Kanawha Valley	Alley Between E 12th St - E 11th Street	500	2"	\$32,500	1940 thru 1959	500	< 6"	Small Dia. Metal (galv. lead, copper)
67	2831-WV-Kanawha Valley	Hastings Drive	1,200	2"	\$78,000	1940 thru 1959	1,200	< 6"	Small Dia. Metal (galv. lead, copper)
68	2831-WV-Kanawha Valley	34 St Belle (Rep. with 2" PVC)	800	2"	\$52,000	1920 thru 1939	800	< 6"	Small Dia. Metal (galv. lead, copper)
69	2831-WV-Kanawha Valley	34 St Belle / 1st (Rep. with 2" PVC)	750	2"	\$48,750	1920 thru 1939	750	< 6"	Small Dia. Metal (galv. lead, copper)
70	2831-WV-Kanawha Valley	5th St Belle (Rep. with 2" PVC)	1,200	2"	\$78,000	1940 thru 1959	1,200	< 6"	Pit Cast Iron
71	2831-WV-Kanawha Valley	Central Ave. East (Rep. with 2" PVC)	750	2"	\$48,750	1940 thru 1959	750	< 6"	Pit Cast Iron
72	2831-WV-Kanawha Valley	Midland Ave. Belle	2,500	2"	\$162,500	1920 thru 1939	2,500	< 6"	Small Dia. Metal (galv. lead, copper)
73	2831-WV-Kanawha Valley	Rockwood Ave Ferry St - Fairview Dr	1,500	6"	\$112,500	1960 thru 1979	1,500	< 6"	Pit Cast Iron
74	2831-WV-Kanawha Valley	Snowbird Drive	950	2"	\$61,750	1960 thru 1979	950	< 6"	Pit Cast Iron
75	2831-WV-Kanawha Valley	Snowhill Drive	3,600	8"	\$239,260	1940 thru 1959	3,600	< 6"	Pit Cast Iron
76	2831-WV-Kanawha Valley	Hill Street	1,000	6"	\$75,000	1960 thru 1979	1,000	< 6"	Small Dia. Metal (galv. lead, copper)
77	2831-WV-Kanawha Valley	Twilight Drive Heath-Green	1,400	6"	\$105,000	1920 thru 1939	1,400	< 6"	Pit Cast Iron
78	2831-WV-Kanawha Valley	High Street Heath-Heath	1,000	6"	\$75,000	1960 thru 1979	1,000	< 6"	Pit Cast Iron
79	2831-WV-Kanawha Valley	King St	600	2"	\$39,000	1960 thru 1979	600	< 6"	Pit Cast Iron
80	2831-WV-Kanawha Valley	Miller Street McJunkin-Milton St	200	2"	\$13,000	1960 thru 1979	200	< 6"	Pit Cast Iron
81	2831-WV-Kanawha Valley	Soner Layton Rd	600	2"	\$39,000	1920 thru 1939	600	< 6"	Small Dia. Metal (galv. lead, copper)
82	2831-WV-Kanawha Valley	Dogwood Rd	1,500	6"	\$112,500	1960 thru 1979	1,500	< 6"	Pit Cast Iron
83	2831-WV-Kanawha Valley	Alexander Place	600	2"	\$39,000	1940 thru 1959	600	< 6"	Pit Cast Iron
84	2831-WV-Kanawha Valley	Emerald Rd	2,000	6"	\$150,000	1960 thru 1979	2,000	< 6"	Pit Cast Iron
85	2831-WV-Kanawha Valley	Schenley Dr	500	2"	\$32,500	1920 thru 1939	500	< 6"	Pit Cast Iron
86	2831-WV-Kanawha Valley	Addison Dr	500	2"	\$32,500	1960 thru 1979	500	< 6"	Pit Cast Iron
87	2831-WV-Kanawha Valley	Clubview Dr	700	2"	\$45,500	1960 thru 1979	700	< 6"	Pit Cast Iron
88	2831-WV-Kanawha Valley	Elmer Rd	500	2"	\$32,500	1940 thru 1959	500	< 6"	Pit Cast Iron
89	2831-WV-Kanawha Valley	Maryland Ave Virginia-Wyoming	900	6"	\$67,500	1940 thru 1959	900	< 6"	Pit Cast Iron
90	2831-WV-Kanawha Valley	Wyoming Tennessee-Penn	600	2"	\$39,000	1960 thru 1979	600	< 6"	Pit Cast Iron
91	2831-WV-Kanawha Valley	Blackwell Off Woodland	800	2"	\$52,000	1940 thru 1959	800	< 6"	Pit Cast Iron
92	2831-WV-Kanawha Valley	Larchmont Off Blackwell	1,400	6"	\$105,000	1940 thru 1959	1,400	< 6"	Pit Cast Iron
93	2831-WV-Kanawha Valley	21st St Off 7th Ave	900	2"	\$58,500	1920 thru 1939	900	< 6"	Pit Cast Iron
94	2831-WV-Kanawha Valley	5th Ave 26-25th St	600	2"	\$39,000	1920 thru 1939	600	< 6"	Small Dia. Metal (galv. lead, copper)
95	2831-WV-Kanawha Valley	Oklahoma Rt 62-Berman Av	1,500	8"	\$127,500	1940 thru 1959	1,500	< 6"	Pit Cast Iron
96	2831-WV-Kanawha Valley	Dodd St	1,200	8"	\$102,000	1960 thru 1979	1,200	< 6"	Pit Cast Iron
97	2831-WV-Kanawha Valley	Berman Av	900	2"	\$58,500	1940 thru 1959	900	< 6"	Pit Cast Iron
98	2831-WV-Kanawha Valley	Woodland Dr Rt 25-Rt 62	3,600	8"	\$306,000	1940 thru 1959	3,600	< 6"	Pit Cast Iron
99	2831-WV-Kanawha Valley	39th Street 1st-2nd Ave	750	2"	\$48,750	1920 thru 1939	750	< 6"	Pit Cast Iron
100	2831-WV-Kanawha Valley	38th Street 1st-2nd Ave	750	2"	\$48,750	1960 thru 1979	750	< 6"	Pit Cast Iron

Attachment B (3 of 4)

West Virginia American Water DISC 2018 Line B Projects Exhibit 4		Additional projects resulting from the removal of the W-WS Project are highlighted.								
No.	District	PROJECT INFORMATION Project Name	Estimated Project Cost			Existing Pipe				
			Proposed Length (feet)	Proposed Diameter (Inches)	Proposed Estimated Cost	Decade Installed	Existing Length (feet)	Existing Diameter (Inches)	Existing Material	
101	2831-WV-Kanawha Valley	37th Street 2st-wnd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Pit Cast Iron	
102	2831-WV-Kanawha Valley	36th Street 2st-wnd Ave	750	2"	\$48,750	1920 thru 1939	750	< 6"	Pit Cast Iron	
103	2831-WV-Kanawha Valley	35th Street 2st-wnd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Pit Cast Iron	
104	2831-WV-Kanawha Valley	32nd Street 2st-wnd Ave	750	2"	\$48,750	1960 thru 1979	750	< 6"	Pit Cast Iron	
105	2831-WV-Kanawha Valley	31st Street 2st-wnd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Pit Cast Iron	
106	2831-WV-Kanawha Valley	Louden Height Rd	2,000	8"	\$170,000	1920 thru 1939	2,000	< 6"	Small Dia. Metal (galv. lead, copper)	
107	2831-WV-Kanawha Valley	29th Street 2st-wnd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Pit Cast Iron	
108	2831-WV-Kanawha Valley	8th Street 3rd Ave - 2nd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Small Dia. Metal (galv. lead, copper)	
109	2831-WV-Kanawha Valley	7th Street 3rd Ave - 2nd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Small Dia. Metal (galv. lead, copper)	
110	2831-WV-Kanawha Valley	6th Street 3rd Ave - 2nd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Small Dia. Metal (galv. lead, copper)	
111	2831-WV-Kanawha Valley	5th Street 3rd Ave - 2nd Ave	750	2"	\$48,750	1940 thru 1959	750	< 6"	Small Dia. Metal (galv. lead, copper)	
112	2831-WV-Kanawha Valley	Mam Ave Juniper St-First	1,500	8"	\$127,500	1960 thru 1979	1,500	< 6"	Small Dia. Metal (galv. lead, copper)	
113	2831-WV-Kanawha Valley	Gum and Kapok	3,000	6"	\$195,000	1940 thru 1959	3,000	< 6"	Small Dia. Metal (galv. lead, copper)	
114	2831-WV-Kanawha Valley	Lake Chawewa	1,200	2"	\$78,000	1940 thru 1959	1,200	< 6"	Small Dia. Metal (galv. lead, copper)	
115	2831-WV-Kanawha Valley	Emory and Cadle	1,300	2"	\$98,000	1940 thru 1959	1,300	< 6"	Small Dia. Metal (galv. lead, copper)	
116	2831-WV-Kanawha Valley	Rt 622 To Church	6,000	8"	\$390,000	1940 thru 1959	6,000	6" to 10"	Pit Cast Iron	
117	2831-WV-Kanawha Valley	Kilgore Lane Cross Lanes (Rep with 2" PVC)	1,350	2"	\$115,000	1941 thru 1959	1,350	< 6"	Small Dia. Metal (galv. lead, copper)	
118	2831-WV-Kanawha Valley	Lone Pine Lane Cross Lanes (Rep with 2" PVC)	1,400	2"	\$120,000	1940 thru 1959	1,400	< 6"	Pit Cast Iron	
119	2831-WV-Kanawha Valley	Piedmont Road	1,270	24"	\$222,250	1940 thru 1959	1,270	12" to 20"	Pit Cast Iron	
120	2831-WV-Kanawha Valley	Rockdale Drive	1,200	6"	\$108,000	1940 thru 1959	1,200	< 6"	Pit Cast Iron	
121	2831-WV-Kanawha Valley	Kilgore Lane	1,360	6"	\$108,800	1940 thru 1959	1,360	< 6"	Pit Cast Iron	
122	2831-WV-Kanawha Valley	1907 Kanawha Ave	360	6"	\$36,000	1920 thru 1939	360	< 6"	Pit Cast Iron	
123	2831-WV-Kanawha Valley	Wyoming Street	1,200	6"	\$210,000	1920 thru 1939	1,200	< 6"	Pit Cast Iron	
124	2831-WV-Kanawha Valley	High Street Phase II	800	6"	\$80,000	1940 thru 1959	800	< 6"	Pit Cast Iron	
125	2831-WV-Kanawha Valley	McFarland Drive	800	6"	\$140,000	1920 thru 1939	800	< 6"	Pit Cast Iron	
126	2831-WV-Kanawha Valley	Alley of Roane Street	650	6"	\$113,750	1920 thru 1939	650	< 6"	Small Dia. Metal (galv. lead, copper)	
127	2831-WV-Kanawha Valley	5100 Block Indiana Alley	600	6"	\$105,000	1940 thru 1959	600	< 6"	Small Dia. Metal (galv. lead, copper)	
128	2831-WV-Kanawha Valley	Victoria Road	880	8"	\$110,000	1940 thru 1959	880	< 6"	Pit Cast Iron	
129	2831-WV-Kanawha Valley	Primrose Drive	1,800	6"	\$225,000	1940 thru 1959	1,800	< 6"	Pit Cast Iron	
130	2831-WV-Kanawha Valley	Staunton Ave	1,600	6"	\$280,000	1920 thru 1939	1,600	< 6"	Small Dia. Metal (galv. lead, copper)	
131	2831-WV-Kanawha Valley	Summitt Drive	1,400	6"	\$175,000	1920 thru 1939	1,400	< 6"	Small Dia. Metal (galv. lead, copper)	
132	2831-WV-Kanawha Valley	7th Ave	750	6"	\$132,000	1920 thru 1939	750	< 6"	Small Dia. Metal (galv. lead, copper)	
133	2831-WV-Kanawha Valley	Coal River River Crossing	600	6"	\$165,200	1960 thru 1979	600	6" to 10"	Plastic (C900 PVC or HDPE)	
134	2841-WV-Huntington	Singer Street	300	6"	\$22,500	1920 thru 1939	300	< 6"	Small Dia. Metal (galv. lead, copper)	
135	2841-WV-Huntington	Miller Rd	4,000	8"	\$480,000	1960 thru 1979	4,000	6" to 10"	Pit Cast Iron	
136	2841-WV-Huntington	Washington Avenue, W 14th St to W 18th St	2,600	12"	\$520,000	Pre-1900	2,600	6" to 10"	Pit Cast Iron	
137	2841-WV-Huntington	Adams Ave., 13th St. W to 18th St. W	2,400	8"	\$288,000	1900 thru 1919	2,400	6" to 10"	Pit Cast Iron	
138	2841-WV-Huntington	4th Street, Altizer	600	2"	\$45,000	1920 thru 1939	600	< 6"	Lined Rigid Joint Spun Cast	
139	2841-WV-Huntington	Route 2, north of Big Ben Bowen Highway	900	12"	\$180,000	1960 thru 1979	900	6" to 10"	Pit Cast Iron	
140	2841-WV-Huntington	Route 2, 40th St. to CSX crossing	3,200	8"	\$384,000	1920 thru 1939	3,200	6" to 10"	Pit Cast Iron	
141	2841-WV-Huntington	Orchard Avenue	710	2"	\$53,250	1920 thru 1939	710	< 6"	Small Dia. Metal (galv. lead, copper)	
142	2841-WV-Huntington	Grand Boulevard, change over services & kill 2"	0	0"	\$50,000	1940 thru 1959	1,300	< 6"	Lined Rigid Joint Spun Cast	
143	2846-WV-Coal River	River Ave	1,800	6"	\$135,000	1960 thru 1979	1,800	< 6"	Small Dia. Metal (galv. lead, copper)	
144	2846-WV-Coal River	CR-119/18	2,200	8"	\$352,000	1940 thru 1959	2,200	< 6"	Small Dia. Metal (galv. lead, copper)	
146	2846-WV-Coal River	Walnut Drive	450	6"	\$54,000	1920 thru 1939	450	< 6"	Small Dia. Metal (galv. lead, copper)	
146	2846-WV-Coal River	Summit Ave	600	6"	\$45,000	1940 thru 1959	600	< 6"	Small Dia. Metal (galv. lead, copper)	
147	2846-WV-Coal River	Virginia Ave	400	6"	\$65,000	1960 thru 1979	400	< 6"	Small Dia. Metal (galv. lead, copper)	
148	2846-WV-Coal River	Cole Ave	1,200	6"	\$135,000	1940 thru 1959	1,200	< 6"	Pit Cast Iron	
149	2846-WV-Coal River	Lick Creek Ashford	5,500	8"	\$880,000	1920 thru 1939	5,500	6" to 10"	SDR PVC	
150	2846-WV-Coal River	Racine Hill	400	8"	\$54,000	1940 thru 1959	400	< 6"	Pit Cast Iron	

Attachment B (4 of 4)

West Virginia American Water									
DISC 2018 Line B Projects Exhibit 4			Additional projects resulting from the removal of the W-WS Project are highlighted.						
No#	District	PROJECT INFORMATION Project Name	Estimated Project Cost			Existing Pipe			
			Proposed Length (feet)	Proposed Diameter (Inches)	Proposed Estimated Cost	Decade Installed	Existing Length (feet)	Existing Diameter (Inches)	Existing Material
151	2846-WV-Coal River	Chester Ave	2,000	6"	\$150,000	1940 thru 1959	2,000	< 6"	Small Dia. Metal (galv. lead, copper)
152	2847-WV-Salt Rock	Cyrus Creek and Tom's Creek	8,340	12"	\$1,468,000	1960 thru 1979	8,340	6" to 10"	SDR PVC
153	2847-WV-Salt Rock	Cherry Street	600	6"	\$48,000	1940 thru 1959	600	6" to 10"	Pit Cast Iron
154	2847-WV-Salt Rock	Cherry Street	300	2"	\$22,500	1940 thru 1959	300	< 6"	Small Dia. Metal (galv. lead, copper)
155	2847-WV-Salt Rock	Highland Street	300	2"	\$22,500	1940 thru 1959	300	< 6"	Small Dia. Metal (galv. lead, copper)
156	2871-WV-Fayetteville WW	Sarah Street-Fayetteville WW	900	6"	\$67,500	1960 thru 1979	900	6" to 10"	SDR PVC
157	2871-WV-Fayetteville WW	Keller Ave-Fayetteville WW	500	6"	\$20,000	1940 thru 1959	500	< 6"	Small Dia. Metal (galv. lead, copper)
158	2871-WV-Fayetteville WW	Lindburgh-Fayetteville WW	1,200	8"	\$73,000		1,200		
159	2871-WV-Fayetteville WW	Fayette Ave Fayetteville WW	600	6"	\$36,000	1960 thru 1979	600	6" to 10"	SDR PVC
TOTALS			221,019		\$21,221,584		227,069		

Attachment C (Page 1 of 1)

STRATEGIC CAPITAL EXPENDITURE PLAN PROGRAM
West Virginia

EXHIBIT NO. 7
2018 SCEP

2018 DSIC Component

Business Unit No.	Project Title	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10	Period 11	Period 12	Total 2018 CAPEX Budget
	RECURRING PROJECTS													
B	Mains - Replaced / Restored	\$880,000	\$985,000	\$1,015,000	\$1,642,500	\$1,999,180	\$2,072,385	\$2,174,000	\$2,459,000	\$2,422,123	\$1,483,048	\$897,148	\$392,200	\$18,221,584
B	Mains - Replaced / Restored - Additional Spend				\$400,000	\$400,000	\$400,000	\$500,000	\$500,000	\$300,000	\$200,000	\$200,000	\$100,000	\$3,000,000
D	Mains - Relocated	0	0	97,500	52,000	138,770	5,850	5,850	0	0	0	0	0	299,970
F	Hydrants, Valves, and Manholes - Replaced	53,652	60,817	77,942	90,528	71,006	80,988	59,418	81,245	63,961	64,553	59,442	54,888	818,440
H	Services and Laterals - Replaced	222,833	250,627	254,394	264,306	277,014	319,200	306,332	300,137	287,385	313,450	228,987	213,645	3,238,310
	Total Recurring Projects	\$1,166,485	\$1,296,444	\$1,444,836	\$2,449,334	\$2,885,970	\$2,878,423	\$3,045,600	\$3,340,382	\$3,073,469	\$2,061,051	\$1,185,577	\$760,733	\$25,578,304
	INVESTMENT PROJECTS													0
128-140003	Weston to Webster Springs Regionalization													0
128-410006	Storage Tanks (Standpipes)	82,500	83,500	83,500	83,500	250,000	250,000	350,000	350,000	350,000	350,000	83,500	83,500	2,400,000
	Total Investment Projects	\$82,500	\$83,500	\$83,500	\$83,500	\$250,000	\$250,000	\$350,000	\$350,000	\$350,000	\$350,000	\$83,500	\$83,500	\$2,400,000
	Total DSIC CAPEX	\$1,238,985	\$1,379,944	\$1,528,336	\$2,532,834	\$3,135,970	\$3,128,423	\$3,395,600	\$3,690,382	\$3,423,469	\$2,411,051	\$1,269,077	\$844,233	\$27,978,304
	Investments included in DSIC													
	Mains - Replaced / Restored / Relocated / Investment Projects	\$880,000	\$985,000	\$1,112,500	\$2,094,500	\$2,537,950	\$2,478,235	\$2,679,850	\$2,959,000	\$2,722,123	\$1,683,048	\$897,148	\$492,200	\$21,521,554
	Hydrants	53,652	60,817	77,942	90,528	71,006	80,988	59,418	81,245	63,961	64,553	59,442	54,888	818,440
	Standpipe	82,500	83,500	83,500	83,500	250,000	250,000	350,000	350,000	350,000	350,000	83,500	83,500	2,400,000
	Services	222,833	250,627	254,394	264,306	277,014	319,200	306,332	300,137	287,385	313,450	228,987	213,645	3,238,310
	Total DSIC CAPEX	\$1,238,985	\$1,379,944	\$1,528,336	\$2,532,834	\$3,135,970	\$3,128,423	\$3,395,600	\$3,690,382	\$3,423,469	\$2,411,051	\$1,269,077	\$844,233	\$27,978,304

Attachment D (Page 1 of 6)

West Virginia-American Water Company
Charleston, West Virginia

First Revision of Original Sheet No. 27
Canceling
Original Sheet No. 27
P.S.C. W.Va. No. 1

DISTRIBUTION SYSTEM IMPROVEMENT CHARGE

Applicable to the entire territory served by the Company.

A Distribution System Improvement Charge (DSIC Rate Component) will be applied as of the effective date below to the meter charge (minimum charge) and volumetric components of the bills of all general domestic, commercial, industrial, sale for resale (other than those served under a demand-based sale for resale agreement under Original Sheet No. 7-p), and private fire service customers in the Company's entire service territory.

Effective Date: January 1, 2018

DSIC Rate Component:

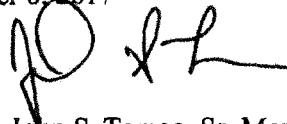
- (I) Meter Charge Component: 3.15%
- (I) Volumetric Component: 3.15%

(I) Indicates change in rate

Issued: October 6, 2017

Effective: January 1, 2018

Issued by:



John S. Tomac, Sr. Manager Rates and Regulatory Support
West Virginia-American Water Company

Issued under authority of an Order of the Public Service Commission of West Virginia dated _____, 2017 in Case No. 17-_____-W-DSIC.

Attachment D (Page 2 of 6)

West Virginia-American Water Company
Charleston, West Virginia

Thirty Third Revision of Original Sheet No. 7
Canceling
Thirty Second Revision of Original Sheet No. 7
P.S.C. W.Va. No. 1

Applicable in the entire territory served by the West Virginia-American Water Company, except those communities noted on Original Sheet No. 7-a, 7-n, and Statement D-1

AVAILABILITY OF SERVICE

Available for general domestic, commercial, industrial service.

RATE

First	1,500	gallons used per month at the minimum charge
Next	28,500	gallons used per month \$11.8526 per 1,000 gallons
Next	870,000	gallons used per month \$7.7923 per 1,000 gallons
Next	8,100,000	gallons used per month \$5.6754 per 1,000 gallons
All over	9,000,000	gallons used per month \$3.6917 per 1,000 gallons

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.

MINIMUM CHARGE

No bill will be rendered for less than the following amount according to the size of each meter installed, to-wit; for customers having multiple meter settings, the minimum charge will be sum of the minimum charges for each of the individual meters:

3/4-inch meter or less*	\$ 26.72 per month
1 inch meter	\$ 65.45 per month
1-1/2-inch meter	\$ 129.99 per month
2 inch meter	\$ 207.51 per month
3 inch meter	\$ 388.32 per month
4 inch meter	\$ 646.62 per month
6 inch meter	\$ 1,292.38 per month
8 inch meter	\$ 2,067.31 per month

* All residential customer shall be served through a 5/8" meter, provided, however, that the Company may install a larger meter when reasonably necessary. This restriction shall not apply to residential meters currently in service.

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.

- (I) Indicates change in rate

Issued: October 6, 2017

Effective: January 1, 2018

Issued by:

John S. Tomac, Sr. Manager, Rates and Regulatory Support

Attachment D (Page 3 of 6)

West Virginia-American Water Company
Charleston, West Virginia

Twenty Fourth Revision of Original Sheet No. 7-a
Canceling
Twenty Third Revision of Original Sheet No. 7-a
P.S.C. W.Va. No. 1

Applicable in the following areas:

- Winifrede, Carbon and Decota communities of Kanawha County
- Coopers Hollow Road at Winifrede

AVAILABILITY OF SERVICE

Available for general domestic, commercial and industrial service.

RATE

First	1,500	gallons used per month at the minimum charge
Next	28,500	gallons used per month \$11.8526 per 1,000 gallons
Next	870,000	gallons used per month \$7.7923 per 1,000 gallons
Next	8,100,000	gallons used per month \$5.6754 per 1,000 gallons
All over	9,000,000	gallons used per month \$3.6917 per 1,000 gallons

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.

MINIMUM CHARGE

No bill will be rendered for less than the following amount according to the size of each meter installed, to-wit; for customers having multiple meter settings, the minimum charge will be sum of the minimum charges for each of the individual meters:

3/4-inch meter or less*	\$ 26.72 per month + \$10.00
1-inch meter	65.45 per month + 10.00
1-1/2-inch meter	129.99 per month + 10.00
2-inch meter	207.51 per month + 10.00
3-inch meter	388.32 per month + 10.00
4-inch meter	646.62 per month + 10.00
6-inch meter	1,292.38 per month + 10.00
8-inch meter	2,067.31 per month + 10.00

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27 but not including the \$10.00 surcharge.

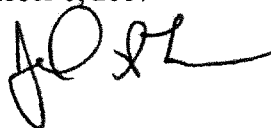
* All residential customers shall be served through a 5/8" meter, provided, however, that the Company may install a larger meter when reasonably necessary. This restriction shall not apply to residential meters currently in service.

- (I) Indicates change in rate

Issued: October 6, 2017

Effective: January 1, 2018

Issued by:



John S. Tomac, Sr. Manager, Rates and Regulatory Support

Attachment D (Page 4 of 6)

West Virginia-American Water Company
Charleston, West Virginia

Twenty Second Revision of Original Sheet No.7-b
Canceling
Twenty First Revision of Original Sheet No. 7-b
P.S.C. W.Va. No. 1

Applicable in the entire territory served by the West Virginia-American Water Company.

AVAILABILITY OF SERVICE

Available for wholesale service.

RATE

First	1,500	gallons used per month at the minimum charge
Next	28,500	gallons used per month \$11.8526 per 1,000 gallons
Next	870,000	gallons used per month \$7.7300 per 1,000 gallons
Next	8,100,000	gallons used per month \$5.9366 per 1,000 gallons
All over	9,000,000	gallons used per month \$4.1842 per 1,000 gallons

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.

MINIMUM CHARGE

No bill will be rendered for less than the following amount according to the size of each meter installed, to-wit; for customers having multiple meter settings, the minimum charge will be sum of the minimum charges for each of the individual meters:

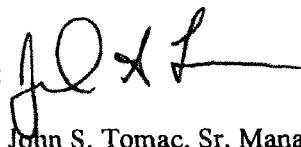
3/4-inch meter or less	\$ 26.72 per month
1 inch meter	65.45 per month
1 - 1/2-inch meter	129.99 per month
2 inch meter	207.51 per month
3 inch meter	388.32 per month
4 inch meter	646.62 per month
6 inch meter	1,292.38 per month
8 inch meter	2,067.31 per month

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.
- (I) Indicates change in rate

Issued: October 6, 2017

Effective: January 1, 2018

Issued by:



John S. Tomac, Sr. Manager Rates and Regulatory Support

Attachment D (Page 5 of 6)

West Virginia-American Water Company
Charleston, West Virginia

Tenth Revision of Original Sheet No. 7-n
Canceling
Ninth Revision of Original Sheet No. 7-n
P.S.C. W.Va. No.1

Applicable in the entire territory formerly served by the Town of Clendenin.

AVAILABILITY OF SERVICE

Available for general domestic, commercial, industrial and sale for resale service.

RATE

First	1,500	gallons used per month at the minimum charge
Next	28,500	gallons used per month \$11.8526 per 1,000 gallons
Next	870,000	gallons used per month \$7.7923 per 1,000 gallons
Next	8,100,000	gallons used per month \$5.6754 per 1,000 gallons
All over	9,000,000	gallons used per month \$3.6917 per 1,000 gallons

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.

MINIMUM CHARGE

No bill will be rendered for less than the following amount according to the size of each meter installed, to-wit; for customers having multiple meter settings, the minimum charge will be sum of the minimum charges for each of the individual meters:

5/8-inch meter	\$ 26.72 per month + \$ 10.00
3/4-inch meter	26.72 per month + \$ 10.00
1-inch meter	65.45 per month + \$ 10.00
1-1/4-inch meter	83.09 per month + \$ 10.00
1-1/2-inch meter	129.99 per month + \$ 10.00
2-inch meter	207.51 per month + \$ 10.00
3-inch meter	388.32 per month + \$ 10.00
4-inch meter	646.62 per month + \$ 10.00
6-inch meter	1,292.38 per month + \$ 10.00
8-inch meter	2,067.31 per month + \$ 10.00

- (I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27 but not including the \$10.00 surcharge.

*All residential customers shall be served through a 5/8" meter, provided, however, that the Company may install a larger meter when reasonably necessary. This restriction shall not apply to residential meters currently in service.

- (I) Indicates change in rate

Issued: October 6, 2017

Effective: January 1, 2018

Issued by:

John S. Tomac, Sr. Manager, Rates and Regulatory Support

Attachment D (Page 6 of 6)

West Virginia-American Water Company
Charleston, West Virginia

Twenty Sixth Revision of Original Sheet No. 8
Canceling
Twenty Fifth Revision of Original Sheet No. 8
P.S.C. W.Va. No. 1

Applicable in entire territory served by the West Virginia-American Water Company, except the community noted on Original Sheet 8-a.

AVAILABILITY OF SERVICE

Available for private fire protection service.

RATE

Where connections, hydrants, sprinklers, etc., on private property are maintained by consumer:

	<u>Per Annum</u>
(I) 2-inch Service Line with hydrants, sprinklers, and/or hose connections-----	\$ 107.60
(I) 3-inch Service Line with hydrants, sprinklers, and/or hose connections-----	244.63
(I) 4-inch Service Line with hydrants, sprinklers, and/or hose connections-----	429.48
(I) 6-inch Service Line with hydrants, sprinklers, and/or hose connections-----	1,088.66
(I) 8-inch Service Line with hydrants, sprinklers, and/or hose connections-----	1,785.30
(I) 10-inch Service Line with hydrants, sprinklers, and/or hose connections-----	3,167.32
(I) 12-inch Service Line with hydrants, sprinklers, and/or hose connections-----	4,438.49

These terms are payable monthly in advance.


(I) Each rate is subject to application of the DSIC Rate Component in the percentage specified in the First Revision of Original Sheet No. 27.

(I) Indicates change in rate

Issued: October 6, 2017

Effective: January 1, 2018

Issued by:


John S. Tomac, Sr. Manager, Rates and Regulatory Support

WHEREFORE, the Parties respectfully recommend and request that the Commission make appropriate findings of fact and conclusions of law adopting and approving the Joint Stipulation in its entirety, including its attachments.

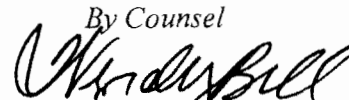
Dated and effective on October 11, 2017.

WEST VIRGINIA-AMERICAN WATER COMPANY

By Counsel

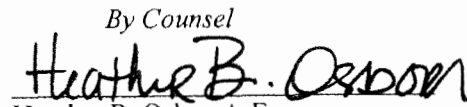

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KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Brent E. O'Neill

- 60.** Given that the proposed QIP will be established on a prospective basis annually and that Kentucky-American will request a CPCN for a QIP-eligible infrastructure project, explain the timing for including a project in the annual QIP calculation in relation to applying for a CPCN.

Response:

In general, the Company does not foresee using the proposed QIP for projects that require a CPCN due to the timing issues described in the question. However, if the Company believes it is appropriate to seek a CPCN for a QIP-eligible infrastructure project, the Company would seek the CPCN prior to placing it in the annual QIP calculation to ensure that the Commission felt it was a prudent project. It would be expected that preliminary design and development of the necessary information for a CPCN filing would be conducted 18 months prior to the project being included in an annual QIP calculation. The application for the CPCN for the representative project would be carried out approximately 12 months prior to the project being included in an annual QIP calculation. Following the acceptance of the CPCN for the representative project, the project will be included into the next annual QIP calculation and the project will commence. Throughout the process, the Company will be in communication with the Commission to ensure a proper review of the CPCN application can be carried out prior to the project being included in a QIP application.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Brent E. O'Neill

- 61.** Refer to the O'Neill Testimony, page 43, which states that expected cost of the treatment plant replacement projects could include projects that could require "investments of a couple million dollars to significant replacement work that can cost greater than \$5 million".
- a. Provide an itemized list of the treatment plant replacement projects that Mr. O'Neill references and include the cost estimate of each project. For each project listed identify if it is for regulatory compliance, system reliability, structural deficiencies, or safety concerns.
 - b. If Kentucky-American is not able to compile an itemized list, explain how it developed its expected costs.

Response:

On page 43 of O'Neill Testimony that the "projects identified" is a review of the projects that are associated with current Strategic Capital Expenditure Plan that has been provided in Staff's First Requests for Information in Question 13.

Treatment and Distribution Pump Station Projects				
Project ID	Project Title	Primary Driver	Secondary Driver	Anticipated Cost
I12-020037	KRS1 Chemical Storage & Feed Improvements	safety concerns	system reliability	\$8,500,001
I12-020059	KRS2 Transfer Switch	safety concerns	system reliability	\$1,000,041
I12-020067	RRS Chemical Facility Upgrade/ Chlorine	safety concerns	system reliability	\$10,500,001
I12-020071	KRS1 Valve House Rehabilitation (Phase 5) - Reeves Drives	system reliability	regulatory compliance	\$1,500,001
I12-020076	KRS1 - Replace Incline Car	structural deficiencies	safety concern	\$1,500,007
I12-020079	Jacobson Pump Station Improvements	safety concerns	system reliability	\$2,000,001
I12-020080	KRS1 Pump 10 and 11 Replacements	system reliability	operational efficiency	\$2,250,270
I12-020081	KRS1 Pump 14 Replacement	system reliability	operational efficiency	\$1,500,000
I12-020082	KRS1 UV Facility	regulatory compliance	-	\$11,500,001
I12-020083	RRS UV Facility	regulatory compliance	-	\$500,000

I12-020094	Cox Street Booster	system reliability	safety concern	\$1,000,000
I12-020095	Mercer Road Booster Station	system reliability	safety concern	\$1,000,000
I12-020096	Mt Horeb Booster Station	system reliability	safety concern	\$750,000
I12-020097	Hall Booster Station	system reliability	safety concern	\$750,000
I12-300010	KRS2 UV Installation	regulatory compliance	-	\$1,000,000
I12-020098	KRS1 Control room/Clearwell/Pumps	system reliability	regulatory compliance	\$7,500,001

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell, Brent E. O'Neill

- 62.** Explain whether Kentucky-American will commit to increasing its infrastructure investment plans if the Commission approves the proposed QIP rider.

Response:

Yes, if the Commission approves the QIP as proposed by the Company. KAWC has already begun to increase its infrastructure replacement rate. KAWC proposes to start the QIP with a \$6 to 10 million increase in replacement expenditures that more than likely will increase over the life of the program.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 63.** Explain whether Kentucky-American would commit to extending the time between filing rate cases or to reducing the carrying charge for its QIP investment. If the response is yes, provide the rate case filing interval to which Kentucky-American would commit.

Response:

KAWC would consider extending the time between filing rate cases along with approval of the requested QIP if the other significant issues in this case (e.g., revenue requirement, performance compensation, rate of return, weather normalization, capital structure) are resolved in a way that will allow KAWC a reasonable opportunity to earn its authorized rate of return.

All things being equal, the Company can go longer between general rate filings with a QIP than without. But it would be challenging to commit to an absolute time frame without knowing the outcome of the current case, including the structure and mechanics of the QIP approved in the current case.

It would be inappropriate to reduce the carrying charge for KAWC's QIP investment.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: John R. Wilde

- 64.** Refer to the Direct Testimony of John Wilde (Wilde Testimony), page 7, line 7, which states that Kentucky-American forecasted a rate for the Public Service Commission Assessment rate of 0.20 percent, but in Case No. 2018-00042, Kentucky-American used a PSC Assessment rate of 0.19 percent.
- a. Provide a detailed explanation for the increase in the PSC Assessment rate from 0.19 percent to 0.20 percent.
 - b. Provide the revenue requirement impact of using PSC Assessment rate of 0.19 percent.

Response:

- a. The PSC Assessment rate of 0.20 percent is the current rate billed by the Commonwealth of Kentucky Department of Revenue. Please see the attached letter from the Department of Revenue which provides the current millage rate for the fiscal year 2018-2019.
- b. Please see the attached revenue requirement impact of using PSC Assessment rate of 0.19 percent and revised gross revenue conversion factor calculation.



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Matthew G. Bevin
Governor

William M. Landrum III
Secretary

MEMORANDUM

TO: Daniel Bork, Commissioner
Department of Revenue *e*

FROM: ~~William M. Landrum, III~~
~~Secretary~~

Date: June 8, 2018

Subject: Millage Rate for Fiscal Year 2019

The Revenue Department, as directed by KRS 278.150(2), collects the annual assessments from the Commonwealth's utility companies and places these receipts to the credit of the General Fund.

Based upon the certification of gross receipts received in this office on June 1, 2018 from the Public Service Commission per KRS 278.150(1), the Finance and Administration Cabinet is establishing a millage rate for fiscal year 2018-2019 of 2.000 mills in accordance with KRS 278.150(2). The millage rate shall not in any year exceed two (2) mills per KRS 278.130(1).

Attachment

Cc: John E. Chilton
Kevin Cardwell
Janice Tomes
Ethan Williams
Greg Harkenrider
Gwen Pinson
Jeff Cline

Kentucky American Water Company
Case No. 2018-00358
Jurisdictional Financial Summary for the Base and Forecast Period Detailing Derivation of the Requested Revenue Increase

Line #	Base Period Ended 2/29/2019	Forecast Period Ended 6/30/2020	Public Service Commission Assessment Rate of .19 %	
			Forecast Period Ended 6/30/2020	Revenue Requirement Impact
1				
2	Present Rate Utility Operating Income:			
3				
4	Operating Revenue at Present Rates:	\$91,907,987	\$88,518,852	\$0
5				
6	Less: Deductions:			
7	Operating and Maintenance	\$34,285,634	\$37,805,851	\$0
8	Depreciation	16,275,109	18,316,098	-
9	Amortization of UPAA	8,556	24,567	-
10	Amortization Expense	267,920	263,438	-
11	State Income Taxes	990,031	503,710	440
12	Federal Income Taxes	4,152,637	2,218,907	1,847
13	Investment Tax Credits	(78,492)	(78,492)	-
14	General Taxes:	7,362,427	7,814,766	(8,797)
15	Total Deductions (Sum Lines 7 - 15):	\$63,263,822	\$66,868,843	(\$6,510)
16				
17	Present Rate Operating Income (Line 4 - Line 16):	\$28,644,165	\$21,650,009	\$6,510
18				
19				
20				
21	Revenue Requirement and Increase Comparison:	Base Period Ended 2/29/2019	Forecast Period Ended 6/30/2020	Forecast Period Ended 6/30/2020
22				Forecast Period Ended 6/30/2020
23	Net Original Cost Rate Base	\$422,336,312	\$441,122,362	\$0
24	Rate of Return	8.18%	8.25%	0.00%
25				
26	Operating Income Required (Line 24 x Line 25):	\$34,547,110	\$36,392,595	\$0
27				
28	Less: Operating Income at Present Rates (Line 18):	\$28,644,165	\$21,650,009	\$6,510
29				
30	Increase in Operating Income Required (Line 27 - Line 29)	\$5,902,945	\$14,742,586	(\$6,510)
31				
32	Gross Revenue Conversion Factor	134.7457%	134.7457%	134.7321%
33				-0.0136%
34	Requested Revenue Increase (Line 31 x Line 33)	\$7,953,966	\$19,865,003	(\$10,779)
35				
36	Percent Increase over Operating Revenue at Present Rates (Line 35 / Line 4):	8.65%	22.44%	22.43%
37				-0.01%
38	Revenue Requirement (Line 4 + Line 35)	\$99,861,953	\$108,383,855	(\$10,779)

Revenue for the Twelve Months Ended June 30, 2020	\$87,964,826	\$87,964,826
Millage Rate	0.0020	0.0019
Forecasted PSC Fee	\$175,930	\$167,133
Change in PSC assessment rate		(\$8,797)

Kentucky American Water Company
Case No. 2018-00358
Computation of the Gross Revenue Conversion Factor for the Forecast Period

Data: Base Period Forecast Period
Version: Original Updated Revised

Exhibit 37, Schedule H
Exhibits\[KAWC 2018 Rate Case - Revenue Requirement and Conversion Factor.xlsx]Rev Conversion Factor - SCH H
Witness: M. Schwarzell

Line #	Gross Revenue Conversion Factor Calculation	Total Rate	Revised Gross Revenue Conversion Factor %	Percent of Total Conversion Factor	Workpaper Reference	Excel Reference
1	Gross Income from Revenue		100.0000%			
2	Less: Bad Debt Rate/ Uncollectible Expense	0.9141%	0.9141%	3.5460%	W/P - 3-10	O&M\[KAWC 2018 Rate Case - Uncollectibles Expense Exhibit.xlsx]Exhibit
3	Less: PSC / Utility Reg Assessment Fee	0.1900%	0.1900%	0.7370%	W/P - 5-2	O&M\[KAWC 2018 Rate Case - PSC Fees Exhibit.xlsx]Exhibit
4	Net Income After Uncollectibles & Reg Assessment Fees		<u>98.8959%</u>			
5						
6						
7	Less: State Income Tax @ 5.0%	5.00%	4.9448%	19.1818%		
9	Net Income After Uncollectibles, Reg Assessment Fees & State Tax		<u>93.9511%</u>			
10						
11	Less: Federal income Tax @ 21%	21.00%	19.7297%	76.5352%		
12						
	Net Income After Uncollectibles, Reg Assessment Fees, & State & Federal Income Taxes:		<u>74.2214%</u>	100.0000%		
13						
14						
15	Gross Revenue Conversion Factor (1 / Line 13)		<u>134.7321%</u>			
16						

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: John R. Wilde

- 65.** Refer to Wilde Testimony, page 7, lines 3–8, which provides an estimated excess ADIT balance as of December 31, 2018, and page 13, lines 4–9, which provides an estimated date of mid-April 2019 for Kentucky-American to file the precise excess ADIT balance. Also refer to the December 21, 2018 Order issued in Case No. 2018-00042, which consolidated that case into this proceeding to achieve administrative efficiencies for the purpose of determining the amounts of excess ADIT since January 1, 2018, and the impact on Kentucky-American's future revenue requirement.
- a. Provide an update on Kentucky-American's progress toward determining the amount of excess ADIT since January 1, 2018.
 - b. Given that the suspension date for this proceeding is June 27, 2019, and that Case No. 2018-00042 has been consolidated into this proceeding, explain in specific detail how Kentucky-American will address the excess ADIT refund if it is unable to provide a precise ADIT balance by mid-April 2019.

Response:

- a. Kentucky-American is on schedule to put its reimplementations of its PowerPlant and PowerTax suite of products into a production environment as of April 1, 2019. That is the date that Kentucky-American will have its plant related ADIT and excess ADIT balances structured in a production system that is capable of isolating ADIT and EADIT balances that are subject to a normalized method of accounting pursuant to IRS guidance from those that are not. This is the date that Kentucky-American will have a system (PowerTax Deferred Tax Module) available in a production environment capable of normalizing EADIT pursuant to ARAM.

The 2017 federal income tax return was completed in October of 2018, EADIT estimates as of 12/31/2017 are known with greater certainty, and ADIT and EADIT amounts in our accounting recordings now reflect the book to tax differences as claimed on tax returns through 12/31/2017.

Using PowerTax Deferred Tax Module to produce the normalization pursuant to ARAM going forward from January 1, 2018 is dependent on having a current version of PowerTax Deferred Tax Module, available, in production and populated with appropriately structure data that is aligned with downstream source systems such as other PowerTax Modules and PowerPlant modules. Prior

to the TCJA, American Water was using One Source Tax Provision and Excel based spreadsheets to accomplish its ADIT and EADIT accounting, as the additional complexity and cost of using the PowerTax Deferred Tax Module was not required to remain in compliance with prior law. Prior to the TCJA, American Water's use of PowerTax was limited to the Tax Basis and Tax Depreciation modules, which along with data available in PowerPlant and other systems and workpapers provide Kentucky American with the data necessary for ARAM as of the date of enactment, even though the systems are not currently setup to perform the calculation. Tax Provision, One Source Tax Return, and various Excel based spreadsheets provide the data. The integrator hired to execute the reimplementation project is working with the American Water tax team to gather the information required to separate the plant related EADIT balances into the data structure needed to use the PowerTax Deferred Tax Module and to execute ARAM for any EADIT balance that is subject to a normalized method of accounting as required by the IRS. After the EADIT balances are loaded into the PowerTax Deferred Tax Module, alignment of that record to respective PowerTax and PowerPlant source systems is then required.

The system integrator hired for the reimplementation project has been diligently working in collaboration with Company personnel to identify and gather source data needed to populate all the modules that will be used by the upgraded PowerPlant and PowerTax Suite of Products including the PowerTax Deferred Tax Module. The system integrator has also been writing the programs to populate the upgraded PowerPlant and PowerTax database with the restructured data. In the course of development and testing, these programs will be refined before being used to load the data into the upgraded production version of the software.

The load of data to production will occur in late February with testing in March, and go live by April 1. Kentucky American could be able to achieve estimates using the upgraded version of the software loaded in the development and test environment earlier than the April 1 date, but that is not known at this time.

- b. Kentucky-American does not anticipate being unable to provide updated EADIT estimates and the required amount of normalization by mid-April 2019.

However, if that were to occur Kentucky-American would likely be at a stage with respect to its system reimplementation to be able to execute a calculation applying ARAM to all plant related EADIT outside of PowerTax using an Excel spreadsheet. This spreadsheet ARAM calculation would be done at a granular enough level to comply with with IRS normalization requirements and would constitute a good faith estimate not unlike others respected by the IRS in the context of other rate proceedings. However, to protect the interests of customers, this less-than-precise ARAM estimate should be used with a true-up or deferral mechanism that adjusts the estimate to a later ARAM calculation performed in PowerTax.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: John R. Wilde

- 66.** Refer to Wilde Testimony, page 8 lines 6–7. Provide the estimated ADIT regulatory liability associated with the tax deduction for repairs in excess of book repairs.

Response:

This is an amount that we as of yet have not isolated out of the overall plant related ADIT or EADIT balance.

ADIT and EADIT are the product of the underlying cumulative book to tax difference, and care is needed to isolate out any plant related ADIT or EADIT balance insuring that you also correctly align it to the associated book to tax difference.

In converting a tax method of accounting for repairs that was different from books, a cumulative adjustment is made known as a “481a” adjustment to essentially bring your book to tax differences and ADIT balances in line with what would have been the result had you been following that method for all vintages it was applied to. That 481a adjustment includes accelerated tax depreciation and bonus deductions claimed prior to the change in method offset by the repair adjustment that would then be applied. For ARAM you have to separate out the accelerated tax depreciation component of that adjustment from the gross tax repair deduction the company would have been entitled to. Because our tax repairs method originally adopted in 2008 was subsequently refined based on additional IRS guidance, more than one instance of a 481a adjustment occurred, impacting vintages dating back to 2001. The 481a as calculated by the consultant doing the tax repair analysis and work-papers did split the 481a adjustment up between its components, so we have the data. However, Kentucky-American was not using ARAM or the PowerTax Deferred Tax Module, and it did not need or have the capability to load the 481a adjustment at the level of precision now needed to address the requirements of the TCJA. The workpapers provided by the consultant to execute our tax repairs method changes in preparing tax returns for the applicable year are one source of the information we are using to build out the ARAM record in PowerTax.

In addition, the ADIT and book to tax difference that is created in claiming the gross repairs deduction on a tax return reverses based on book depreciation deductions. So to appropriately isolate the ADIT related to tax repairs you need to know the cumulative repair deduction including the relevant portion of the 481a adjustment (described above) and the cumulative book depreciation that has occurred over time. In order to calculate the book depreciation associated with a tax repair deduction, the cumulative repair deduction and accumulated book depreciation must be in a record that is unique to the vintage of plant it relates to and the book depreciation group that will define the life over

which it will reverse. The level of detail for ADIT and EADIT that is required to use ARAM is inherent in how data is populated and structured in the PowerTax Deferred Tax Module. The straight line on tax basis functionality in the PowerTax Deferred Tax Module is what allows the correct amount of ADIT, EADIT, or underlying cumulative book to tax difference to be isolated out my adjustment identifier and be carried, and normalized as a discrete record.

When the TCJA was enacted, Kentucky-American, having used the Reverse South Georgia Method (RSGM) of accounting for prior changes in law, did not have the need for all the granularity afforded by the PowerTax Deferred Tax Module. RSGM as a method normalizes the entire balance of plant related EADIT over the composite average life of all plant the EADIT relates to. Therefore, the Company could execute those calculations in One Source Tax Provision with the supporting schedules in Excel spreadsheets without having to incur the cost or complexity of maintaining the PowerTax Deferred Tax Module.

Kentucky-American will have a precise method of isolating out the ADIT and EADIT related to tax repairs in mid-April 2019; if we are able to do so earlier we will update our answer to this request.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: John R. Wilde and Melissa L. Schwarzell

- 67.** Refer to the Wilde Testimony, pages 13-14, which states that, “[t]he Commission should allow sufficient time for Kentucky-American to complete its ARAM calculation by addressing amortization of net excess ADIT balances in this rate case and incorporating such amortization in the Company’s new rates.” Confirm that the amortization of net excess ADIT is reported with the protected excess ADIT.
- a. Explain whether Kentucky-American would comment to postponing the implementation of the proposed rate increase in this proceeding until Kentucky-American has calculated the actual amortization of the excess ADIT protected and unprotected.
 - b. Explain whether Kentucky-American would commit to paying interest on the STUB portion for the period from January 1, 2018, until the SUB portion is returned to the ratepayers.

Response:

The amortization of net excess ADIT, as referenced in the testimony of John Wilde, would include protected excess ADIT

- a. Kentucky-American would not support delaying the implementation of the proposed rate increase. Kentucky-American anticipates that the calculations for protected and unprotected ADIT would be completed well before the end of the suspension period when rates could be implemented.
- b. Kentucky-American’s rates are already reduced by the full cost of capital for accumulated deferred income taxes, including remeasured deferred taxes that are associated with stub period amortization. Therefore, the payment of interest on such amounts would be unwarranted.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: John R. Wilde

- 68.** Provide the revenue requirement impact of amortizing the excess state ADIT using amortization periods of five, ten, and fifteen years.

Response:

Estimate of the state regulatory liability (ADIT excess grossed up to its deferred tax equivalent) is \$1,410,549. Please see attached revenue requirement impact.

Kentucky-American Water Company
Revenue Requirement Impact of Excess State ADIT Amortization

Net Liability	(\$1,058,617)
Gross Liability	(\$1,410,549)
Pretax return	10.01%
Expense Gross Up	101.13%

		Years									
		1	2	3	4	5	6	7	8	9	10
<u>5 Year</u>											
a	Amortization	(\$282,110)	(\$282,110)	(\$282,110)	(\$282,110)	(\$282,110)					
b	Change to Rate Base	\$105,862	\$317,585	\$529,309	\$741,032	\$952,755					
c = b x pretax return	Pretax Rate of Return	\$10,597	\$31,790	\$52,984	\$74,177	\$95,371					
d = a+c	Revenue Requirement Before Uncollectibles and PSC fees	(\$271,513)	(\$250,320)	(\$229,126)	(\$207,933)	(\$186,739)					
e = d*expense gross up	Revenue Requirement After Uncollectibles and PSC fees	(\$274,572)	(\$253,140)	(\$231,707)	(\$210,275)	(\$188,843)					
<u>10 Year</u>											
a	Amortization	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)	(\$141,055)
b	Change to Rate Base	\$52,931	\$158,793	\$264,654	\$370,516	\$476,378	\$582,239	\$688,101	\$793,963	\$899,824	\$1,005,686
c = b x pretax return	Pretax Rate of Return	\$5,298	\$15,895	\$26,492	\$37,089	\$47,685	\$58,282	\$68,879	\$79,476	\$90,072	\$100,669
d = a+c	Revenue Requirement Before Uncollectibles and PSC fees	(\$135,757)	(\$125,160)	(\$114,563)	(\$103,966)	(\$93,369)	(\$82,773)	(\$72,176)	(\$61,579)	(\$50,982)	(\$40,386)
e = d*expense gross up	Revenue Requirement After Uncollectibles and PSC fees	(\$137,286)	(\$126,570)	(\$115,854)	(\$105,138)	(\$94,421)	(\$83,705)	(\$72,989)	(\$62,273)	(\$51,557)	(\$40,841)
<u>15 Year</u>											
a	Amortization	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)
b	Change to Rate Base	\$35,287	\$105,862	\$176,436	\$247,011	\$317,585	\$388,160	\$458,734	\$529,309	\$599,883	\$670,457
c = b x pretax return	Pretax Rate of Return	\$3,532	\$10,597	\$17,661	\$24,726	\$31,790	\$38,855	\$45,919	\$52,984	\$60,048	\$67,113
d = a+c	Revenue Requirement Before Uncollectibles and PSC fees	(\$90,504)	(\$83,440)	(\$76,375)	(\$69,311)	(\$62,246)	(\$55,182)	(\$48,117)	(\$41,053)	(\$33,988)	(\$26,924)
e = d*expense gross up	Revenue Requirement After Uncollectibles and PSC fees	(\$91,524)	(\$84,380)	(\$77,236)	(\$70,092)	(\$62,948)	(\$55,804)	(\$48,659)	(\$41,515)	(\$34,371)	(\$27,227)

Kentucky-American Water Company
Revenue Requirement Impact of Excess State ADIT Amortization

Net Liability	(\$1,058,617)
Gross Liability	(\$1,410,549)
Pretax return	10.01%
Expense Gross Up	101.13%

	11	12	13	14	15
<u>5 Year</u>					
a	Amortization				
b	Change to Rate Base				
c = b x pretax return	Pretax Rate of Return				
d = a+c	Revenue Requirement Before Uncollectibles and PSC fees				
e = d*expense gross up	Revenue Requirement After Uncollectibles and PSC fees				
<u>10 Year</u>					
a	Amortization				
b	Change to Rate Base				
c = b x pretax return	Pretax Rate of Return				
d = a+c	Revenue Requirement Before Uncollectibles and PSC fees				
e = d*expense gross up	Revenue Requirement After Uncollectibles and PSC fees				
<u>15 Year</u>					
a	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)	(\$94,037)
b	\$741,032	\$811,606	\$882,181	\$952,755	\$1,023,330
c = b x pretax return	\$74,177	\$81,242	\$88,306	\$95,371	\$102,435
d = a+c	(\$19,859)	(\$12,795)	(\$5,730)	\$1,334	\$8,399
e = d*expense gross up	(\$20,083)	(\$12,939)	(\$5,795)	\$1,349	\$8,493

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: John R. Wilde

- 69.** Provide the revenue requirement impact of amortizing the excess unprotected federal ADIT using amortization periods of five, ten, and fifteen years.

Response:

Kentucky-American is unable to provide the requested information at this time because it is still in the process of implementing a system that is capable of isolating ADIT and excess ADIT (EADIT) balances that are subject to a normalized method of accounting pursuant to IRS guidance from those that are not, as discussed in response to No. PSC 2-65. Kentucky-American will update this response when the necessary information becomes available. However we are updating plant and non-plant EADIT as of 12/31/2018 reflecting the filing of the 2017 income tax return.

The balance of non-plant EADIT is \$871,948.

The balance of plant EADIT is \$30,074,052.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Melissa L. Schwarzell

70. Refer to Kentucky-American's responses to Staff's First Request, Item 1, Workpaper W/P-3-1, O&M\[KAWC 2018 Rate Case - Support Services Exhibit.xlsx.

a. Refer to Exhibit Tab. Provide detailed explanations for the following adjustments:

Description	Amount
Depreciation and Capital Lease Interest	\$ 56,960
Office Rent	\$ 20,930
UnionAPP	\$ 13,783
Acquired Customers	\$ 1,278
Security	\$ 157,222

b. Refer to Summary Tab. List each business development cost that is included in the \$93,013 forecasted Service Company fees, state whether the cost is directly assignable or allocated, and describe the services associated with each cost identified.

c. Refer to Summary Tab. List each external affairs and public policy cost that is included in the \$262,641 forecasted Service Company fees. State whether the cost is directly assignable or allocated, and describe the services associated with each cost identified.

d. Refer to the Summary Tab. Provide a comparison of the prior five calendar years and the forecasted test year of the Service Company costs being allocated and directly charged to Kentucky-American, broken down by function. Include a detailed explanation for any cost variances of 5 percent between years.

Response:

a. The aforementioned adjustments are increases in Support Services related to the following:

- Depreciation and capital lease interest adjustments to account for existing assets and forecasted additions of property
- The increased cost of building rent and related office expenses
- The expansion of Annual Performance Plan eligibility to the customer service centers union employees beginning in 2019
- North Middletown acquisition expected to be completed in February 2019

- The additional 2019 headcount within the Corporate Security function
- b. Please see attachment 1 for the business development costs included in the forecasted Service Company fees of \$93,039. The costs charged to the Company have been allocated using customer counts. The business development function is responsible for supporting state business development matters. The employees in this area perform research and analysis to identify and examine viable merger or acquisition candidates to grow and develop the business into service areas that will benefit from the management expertise and economies-of-scale KAWC offers. The staff provides policy guidance as well as analytical tools and consultation with divisional and state personnel.
 - c. Please see attachment 1 for the external affairs and public policy costs included in the forecasted Support Services fees of \$262,641. The costs charged to the Company are inclusive of direct and allocated costs. The external affairs and public policy function provides services to Kentucky which include business support, and external communications support for customers and other stakeholders on key water service and regulatory matters. This includes assistance with emerging issues as they arise, technical support for any policy changes and their implementation, and ongoing support of informational presentations, communications, and trainings.
 - d. Please see attachment 2 for a comparison of the prior five calendar years and the forecasted test year of the Support Services costs broken down by function. The 5% decrease in Support Services costs in 2015 is due to an overall decrease in operations costs for the Technology and Innovation (T&I) function. The 10% increase in 2016 is primarily due to an increase in injuries & damages, APP, and software licenses. The 8% increase in 2018 is primarily the result of an erroneous journal entry related to the Tax Cut Job Act in December 2017 on the Support Services books. The error was discovered but not in time to correct the entry on the Support Services books. Instead, a correcting entry was made on Kentucky American Water Miscellaneous expense. Reversing entries were then made in January.

Kentucky-American Water Company
 Response to KAW_R_PSCDR2_NUM070, subparts B & C
 For the Forecasted Test Year

GL Account	GL Account Name	Business Development			External Affairs & Public Policy		
		Water	Sewer	Total	Water	Sewer	Total
50100000	Labor Natural Account	\$ 42,654	\$ 46	\$ 42,700	\$ 117,649	\$ 128	\$ 117,777
50100001	Labor Expense Accrual	(1,607)	(2)	(1,609)	(3,687)	(4)	(3,691)
50109900	Labor Capitalized Credits	145	0	145	315	0	315
50110000	Labor Non-scheduled Overtime - Natural Account	33	0	33	276	0	276
50171000	Annual Performance Plan	9,174	10	9,184	23,141	25	23,166
50171600	Compensation Exp - Options	665	1	666	2,500	3	2,503
50171800	Compensation Exp - RSU's	10,576	12	10,588	13,980	15	13,996
50185000	Severance	-	-	-	-	-	-
50421000	401k Expense	1,572	2	1,573	3,373	4	3,377
50422000	Defined Compensation Plan Expense	1,418	2	1,419	3,224	4	3,227
50424000	Defined Contribution Plan Restoration Expense	129	0	129	356	0	357
50425000	401k Restoration Expense	-	-	-	289	0	290
50450000	Other Welfare - Natural Account	5	0	5	622	1	623
50451000	Employee Awards	10	0	10	22	0	22
50452000	Employee Physical Exams	126	0	126	-	-	-
50456000	Tuition Aid	122	0	122	597	1	598
50457000	Training	228	0	229	345	0	346
50510000	PBOP Expense	100	0	100	505	1	506
50550000	Group Insurance Expense	4,126	4	4,130	10,898	12	10,910
50560000	Health Savings Account Expense	-	-	-	14	0	14
50610000	Pension Expense	2,411	3	2,414	5,488	6	5,494
52000000	M & S (O&M) - Natural Account	10	0	10	98	0	98
52500000	Misc Exp (O&M) - Natural Acct	333	0	333	8,398	9	8,407
52503000	Advertising	-	-	-	-	-	-
52513200	Business Development	4	0	4	13	0	13
52514600	Charitable Donations - Community	-	-	-	-	-	-
52514905	Customer Education Communication - Printed	-	-	-	6,527	7	6,534
52514906	Customer Education - Bill Inserts	-	-	-	973	1	974
52514907	Customer Education - Press Releases	-	-	-	3,581	4	3,584
52520000	Collection Agencies	-	-	-	135	0	135
52522000	Community Relations	-	-	-	-	-	-
52524000	Co Dues/Membership Deductible	1,910	2	1,913	3,107	3	3,110
52532000	Electricity - Natural Account	-	-	-	4	0	4
52534000	Employee Expenses	4,311	5	4,316	8,668	9	8,677
52534200	Conferences & Registration	100	0	100	1,017	1	1,018
52535000	Meals Deductible	585	1	586	1,478	2	1,479
52548000	Heating Oil/Gas - Natural Account	-	-	-	2	0	2
52556000	Lobbying Expenses	-	-	-	-	-	-
52562000	Office & Admin Supplies - Natural Account	110	0	110	245	0	246
52562500	Overnight Shipping - Natural Account	12	0	12	35	0	35
52566000	Postage - Natural Account	22	0	22	8	0	8
52566700	Printing	-	-	-	353	0	354
52567000	Relocation Expenses	-	-	-	499	1	500
52571500	Software Licenses	-	-	-	1,029	1	1,030
52574000	Telephone - Natural Account	280	0	280	266	0	266
52574100	Cell Phone - Natural Account	578	1	578	804	1	804
52577500	Trade Shows	-	-	-	-	-	-
52582000	Uniforms - Natural Account	-	-	-	55	0	55
53110000	Contract Svc-Eng - Natural Account	423	0	424	-	-	-
53150000	Contract Svc-Other - Natural Account	4,919	5	4,925	34,827	38	34,865
53151000	Contract Svc-Temp Empl - Natural Account	134	0	134	-	-	-
53155000	Contract Services - Legal	1,295	1	1,296	-	-	-
54115000	Rents-Real Property Interco	-	-	-	240	0	240
55010100	Transportation Lease Costs	-	-	-	5	0	5
55010500	Transportation - Reimburse Employee Personal Use	53	0	53	79	0	79
55110000	Insurance Vehicle	16	0	16	25	0	25
55710000	Insurance General Liability	878	1	879	1,115	1	1,116
55720000	Insurance Workers Compensation	981	1	982	1,388	2	1,390
55730000	Insurance Other	611	1	611	1,359	1	1,361
55740000	Insurance Property	22	0	22	26	0	26
68532000	FUTA	20	0	20	36	0	36
68533000	FICA	3,173	3	3,177	5,703	6	5,709
68535000	SUTA	349	0	349	534	1	534
71621000	Misc Nonutility Expense	(77)	(0)	(77)	(43)	(0)	(43)
71712000	Gains/Losses Other Non-Operating	(2)	(0)	(2)	(139)	(0)	(139)
71810000	Other Pension Cost	0	0	0	0	0	0
71820000	Other PBOP Cost	(0)	(0)	(0)	(0)	(0)	(0)
	Total	\$ 92,938	\$ 101	\$ 93,039	\$ 262,356	\$ 285	\$ 262,641

Kentucky-American Water Company
 Response to KAW_R_PSCDR2_NUM070, subpart D

Function	Support Services Total Costs					7/1/19-6/30/20
	2014	2015	2016	2017	2018	Forecasted Year
Business Development	\$ 129,406	\$ 156,446	\$ 163,395	\$ 123,939	\$ 81,987	\$ 93,039
Central Lab	79,654	82,356	66,578	80,687	103,301	99,782
Corp Admin	277,620	224,713	1,454,719	690,060	1,312,110	1,058,913
Corporate Security	59,776	69,409	104,663	132,372	219,774	368,167
Customer Service Organization (CSO)	1,809,558	1,750,345	1,626,776	1,841,567	1,890,538	1,903,409
Engineering	58,248	75,576	67,674	122,519	96,185	98,333
External Affairs & Public Policy	280,951	308,323	336,747	289,306	319,751	262,641
Facilities	228,540	197,052	167,550	186,318	207,353	258,576
Finance	1,170,067	1,094,165	1,163,210	1,258,361	1,282,953	1,346,823
Human Resources	537,268	610,765	729,801	745,890	768,966	790,618
Investor Relations	18,151	17,087	28,847	30,722	29,683	22,937
Legal	423,381	406,190	538,431	568,794	654,275	613,203
Regulated Ops	379,563	399,084	625,003	918,778	1,004,488	1,064,437
Safety & Environmental Compliance	74,661	48,886	40,017	79,074	69,429	78,790
Supply Chain	96,450	91,592	84,097	100,145	132,169	142,765
Technology and Innovation (T&I)	3,152,564	2,794,487	1,932,568	1,888,206	1,632,140	1,527,157
Total	\$ 8,775,857	\$ 8,326,477	\$ 9,130,076	\$ 9,056,739	\$ 9,805,103	\$ 9,729,591
Support Services Variance % Year over Year		-5%	10%	-1%	8%	-1%

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 71.** Refer to the application, Exhibit 37, B-5.2, pages 4–6, Working Capital - Lead/Lag Study Forecast Year at June 30, 2020. Provide a schedule that compares the lead/lag days in this study to the lead/lag days used in Case No. 2015-00418.¹ Explain each variance in the lead/lag days.

Response:

Please refer to the attachment which provides a comparison schedule for lag days filed in Exhibit 37, B-5.2, pages 4-6, Working Capital – Lead Lag Study Forecast Year at June 30, 2020 versus Case No. 2015-00418. Please note the Lead Lag Study for Forecast Year at June 30, 2020 is based on payment information from September 1, 2017 to August 31, 2018. The Company has provided variance explanations for those categories with a fluctuation percentage plus or minus 10% or greater.

In general, payments are being processed on a more-timely basis. In 2015, the Company averaged 8,000 invoices outstanding at month end compared to 5,887 in 2018. Also, the Company implemented an online invoice payment process for its vendors after 2015. This offers suppliers the opportunity to take advantage of dynamic cash discounting to be paid faster.

The variances can be summarized as follows:

Fuel, Power and Electric – Sample size was increased by 55. Bills are being processed on a more-timely basis – see above.

Chemicals – Sample size was increased by 54. Bills are being processed on a more timely-basis – see above.

Waste Disposal – 2015 and 2018 rate cases had only 1 invoice processed, but 2018 invoice covered a one-year service period.

Service Company Charges – July 2018 and August 2018 invoices were paid later than normal.

OPEB – Only one funding payment happened during the study period in 2018.

Pensions – The percent variance is large, but the difference in the lag days is just 2 days.

¹ Case No. 2018-00418, *Application of Kentucky-American Water Company for an Adjustment of Rates* (Ky. PSC Aug. 23, 2016).

Insurance Other than Group – 2015 included 3 invoices that covered a five-year period. These invoices were not included in 2018.

Rents – Sample size decreased by 11 invoices. Canon invoices that had been in the study in 2015 are now included in the Office Supplies Lead Lag calculation.

Maintenance Service & Supplies – Sample size decreased by 32 invoices. 2015 invoices were paid past 45 days. Invoices are now paid on a more current basis – see above.

Office Supplies & Services – Sample size increased by 710 invoices. 2018 study included Purchase Card payments which have a quicker payment and clearing time.

Employee Related Exp, Travel & Ent – Sample size decreased by 608 invoices. Invoices for the relocation company NEI have been paid past 45 days. This is due to late receipt of the invoices and verification processing time.

Other Operating Expenses – Sample size increased by 2,397 invoices. 2018 study included Purchase Card payments which have a quicker payment and clearing time.

Property Tax – Sample size increased by 36 invoices. 2018 study included payments from 2015 – 2017 due to tax bill creation for local authorities not being completed until 2nd quarter 2018. 2018 tax payments are not representative of activity going forward.

Income Taxes – Current – SIT – 2015 had only 3 payments and 2018 is based on statutory payments for 2019 & 2020.

Interest Expense – Short – Term Debt – 2018 study included a bond issuance on 9/20/17 which changed short term debt liability into an investment which created a negative adjustment in September and negated payments being made until January 2018.

Kentucky American Water
Case No. 2018-00358

Attachment for Response to PSC Data Request #2, Item 71

	Case 2018-00358	Case 2015-00418	Variance	Variance %
Expense	Lag Days	Lag Days	Days	Days
Date Service Furnished and Date Collections Deposited	43.38	43.92	(0.54)	-1.2%
Date Expenses Incurred and Date of Payment	30.71	28.27	2.44	8.6%
Salaries & Wages	12.00	12.00	0.00	0.0%
Fuel, Power and Electric	26.40	33.10	(6.70)	-20.2%
Chemicals	41.39	49.29	(7.90)	-16.0%
Purchased Water	52.54	49.73	2.81	5.7%
Waste Disposal	241.51	62.23	179.28	288.1%
Service Company Charges	(3.50)	(7.58)	4.08	-53.8%
Contracted Services	53.37	55.83	(2.46)	-4.4%
Group Insurance	10.31	10.92	(0.61)	-5.6%
Opeb	141.50	(2.75)	144.25	-5245.5%
Other Benefits	10.10	10.24	(0.14)	-1.4%
Pensions	(0.75)	(2.75)	2.00	-72.7%
Insurance Other than Group	(41.60)	(82.79)	41.19	-49.8%
Rents	(75.10)	43.08	(118.18)	-274.3%
Regulatory Expense	0.00	0.00	0.00	0.0%
Maintenance Service & Supplies	39.83	56.13	(16.30)	-29.0%
Amortization	0.00	0.00	0.00	0.0%
Uncollectibles	0.00	0.00	0.00	0.0%
Office Supplies & Services	45.32	59.67	(14.35)	-24.0%
Employee Related Exp, Travel & Ent	66.06	46.10	19.96	43.3%
Other Operating Expenses	38.23	44.78	(6.55)	-14.6%
Depreciation and Amortization	0.00	0.00	0.00	0.0%
Property Taxes	159.74	144.30	15.44	10.7%
Utility Tax	(155.99)	(154.77)	(1.22)	0.8%
Payroll Taxes	12.00	12.00	0.00	0.0%
Income Taxes - Current - SIT	46.26	55.61	(9.35)	-16.8%
Income Taxes - Current - FIT	36.75	36.75	0.00	0.0%
Deferred Income Taxes	0.00	0.00	0.00	0.0%
Interest Expense - Long - Term Debt	91.70	93.58	(1.88)	-2.0%
Interest Expense - Short - Term Debt	18.90	15.02	3.88	25.8%
Preferred Dividends	46.13	46.63	(0.49)	-1.1%
Net Income	0.00	0.00	0.00	0.0%

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Melissa L. Schwarzell/Kevin N. Rogers

72. Refer to the Schwarzell Testimony, page 29, lines 10–14. Provide documentary evidence to support the statement that the acquisition of North Middletown meets the criteria established by the Commission in Case No. 9059.

Response:

The acquisition of North Middletown meets the criteria established by the Commission in Case No. 9059.

The purchase was an arms-length transaction between KAW and the City of North Middletown.

This transaction is between a willing seller and a willing buyer and negotiations to reach the purchase price and conditions were conducted without conflict. Neither party was affected by any conflict of interest whatsoever. The City issued an Invitation to Bid for all interested parties in The Bourbon County Citizen newspaper on March 29, 2018. KAW responded prior to the deadline on April 17, 2018.

See attachment 1 for copies of the Invitation to Bid and KAW's response.

The purchase price plus the cost of restoring the facilities to required standards will not adversely impact the overall rates for new and existing customers.

The purchase price of the system and the cost of its operation are almost entirely funded by the system's present rate revenue, with only a \$16 thousand deficiency at the Company's requested rate of return. On a standalone basis, truing up this deficiency would cost the average residential customer in North Middletown approximately \$2.92 / month or 5.5% of present rate revenue. If included in the single tariff, North Middletown customers will experience a rate decrease of \$14.47 / month and the Company's existing single tariff customers' bills would be unaffected (less than one penny per month of impact). (Please see attachment.) In terms of the cost of restoring the facilities, at this time, KAW has not identified any significant expenditures necessary to restore facilities to required standards.

Operational economies will be achieved.

The City is currently a resale customer of KAW but there is no insight into the hydraulic conditions within the system. Integrating the City's existing standalone SCADA system into KAW's SCADA network will facilitate continuous monitoring of the system, increase awareness of changes within the system, and substantially reduce response time when issues arise.

KAW currently staffs three Class IV surface water plants 24/7 with 22 full time positions. Seven employees maintain Class IV water treatment licenses, and 38 maintain distribution licenses. In addition, KAW currently has seven personnel that hold wastewater operator licenses.

Field Operations maintains a staff of over 60 employees who are experienced in multiple aspects of maintaining a distribution system and can support the North Middletown service area along with the other areas of Bourbon County we currently serve. Collectively our employees have over 250 years of leak detection experience along with the resources necessary to make the repairs. We maintain 24-hour coverage by operating multiple schedules and have an after-hours emergency crew. Our utility fleet consists of backhoes, excavators, dump trucks, utility trailers, pick-up trucks, service trucks, and several other pieces of equipment. We maintain numerous pieces of safety equipment such as: trenching and shoring equipment, highway and traffic safety equipment, and personal protective equipment. Our mission is to maintain service with as little disturbance to the customer as possible, all the while making sure our employees go home safely each and every day.

KAW utilizes American Water's centralized laboratory as well as two local, in-house certified bacteriological labs reducing outsourced lab costs and increasing efficiencies and response time. KAW also benefits from American Water's fully staffed research and development laboratory that remains on the forefront of emerging issues.

Clear segregation of utility and non-utility purchased property.

Non-utility property is not part of the North Middletown acquisition.

The purchase will result in overall benefits in the financial and service aspect of the utility's operations.

Financial

Being part of American Water, KAW benefits from the national vendor contracts that leverage the purchasing power of a much larger organization. These savings on meters, pipe, hydrants, valves, equipment and other supplies will benefit the customers in North Middletown.

Service

KAW has a well-equipped fleet of construction and maintenance equipment that can support the North Middletown service area along with the other areas of Bourbon County we currently serve. KAW also has treatment plant and distribution supervisors as well as emergency personnel on call, around the clock, for immediate dispatch. Under normal circumstances, KAW personnel and equipment can be dispatched to North Middletown within approximately 45 minutes.

KAW has a variety of customer service conveniences for our customers including a toll-free line that is staffed 24 hours a day and can dispatch local crews for emergency calls. We offer flexible payment options for our customers as well as enhanced self-serve options. Customers can opt in for advance notification for field service site visits. In addition, we have our Customer

Advocacy department available to provide an elevated level of customer care for escalated issues.

KAW has a highly skilled and specialized workforce. One example, is our leak detection capabilities. KAW has focused on an aggressive leak detection program for many years and has been recognized as an expert in this field assisting other water utilities where they have struggled to locate serious leaks within their systems. KAW employs a variety of leak detection technologies including acoustic monitoring equipment, leak correlation devices to accurately pinpoint the location of non-surfacing leaks as well as satellite-based leak detection efforts.

What's At Stake? PHIL HANRAHAN

Derby Double Day

This past Saturday was a doubleheader for Kentucky Derby, presented by Woodford Reserve (G1) qualifying races. The Fair Grounds presented the Grade 2, 1 1/8-mile, Twinspires.com Louisiana Derby with 170 Kentucky Derby qualifying points (100-40-20-10). Sunland Park hosted the Grade 3, 1 1/8 mile, Sunland Derby which had 85 Kentucky Derby qualifying points (50-20-10-5) up for grabs.

The Louisiana Derby featured the return of **Bravazo**, who won the Risen Star Stakes, presented by Lamarque Ford by a neck in his last start on February 17th over the Fair Grounds main track. Trained by D. Wayne Lucas and owned by Calumet Farm, Bravazo turned in two bullet works in the last two weeks at Oaklawn Park. **Snappy Sinclair**, trained by Steve Assmussen and owned by Bloom Racing Stable, the second-place finisher in the Risen Star Stakes, was back to challenge Bravazo. Back in January, Snappy Sinclair, who is based at the Fair Grounds, finished third in the Grade 3, 1 mile 70-yard Lecomte Stakes at the Fair Grounds. **Noble Indy** who finished third in the Risen Star Stakes in his last start also looked to defeat Bravazo in the Louisiana Derby. Prior to his third-place finish in the Risen Star Stakes, Noble Indy, trained by Todd Pletcher and owned by Repole Stable and WinStar Farm, won a \$75,000 Allowance-Optional Claimer at Gulfstream Park going 1 1/16 miles.

A field of 10 went to the post in the Louisiana Derby with Noble Indy the slight post-time favorite over Bravazo. Besides Noble Indy, the race featured several speed horses including the maiden **Marmello**, two-time Fair Grounds winner **Retirement Fund**, **Hyndford**, and **Snappy Sinclair**. Marmello took the early lead with Noble Indy a length back and Bravazo another half-length behind as the ran the first quarter in a fast :22.67. Down the backstretch these three came as they went the half in :46.61 with Noble Indy inching up to Marmello. Into the far turn they went and Noble Indy easily getting by Marmello to open up a two-length lead completing three-quarters in 1:11.47. The lead evaporated by the top of the stretch with the challenge of Lone Sailor in the three-path who got a head in front of Noble Indy down on the rail while My Boy Jack was closing fast out in the six-path. At the wire it was Noble Indy battling back to win by a neck in front of Lone Sailor with My Boy Jack a half-length back in third. Then it was more than seven lengths back to **Givemeaminit** who finished fourth. Final time for the 1 1/8 mile was 1:50.28.

A full gate of 12 horses were sent off by

the starter in the Sunland Derby on Sunday. Joe Peacock's hometown runner **Runaway Ghost**, trained by Todd Fincher, had a slight edge in the final odds. After winning the 1 mile, Riley Allison Stakes in January at Sunland and earning a second-place finish in the 1 1/16 mile Mine That Bird Derby in February, Runaway Ghost was the "horse-for-course". **All Out Blitz** ran a distance third in the Grade 3, seven-furlong, San Vicente Stakes on February 10th at Santa Anita in his last start. He turned in a five-furlong bullet work (:58³, 1/12) on March 17th in his last prep for the Sunland Derby. **Dark Vader** faded from second to finish third on February 3rd in the Grade 3, 1 1/16 mile Robert B. Lewis Stakes at Santa Anita; a race that Sunland Derby contender **Peace** finished a distant fifth.

As they ran down the stretch the first time in the Sunland Derby the early leader was All Out Blitz, with a half-length lead over **New York Central**, who had a half-length edge over **Shane Zain**. Into the first turn it was still All Out Blitz maintaining his lead over New York Central. These two continued to run 1-2 as they headed down the backstretch with Shane Zain running third as they completed the half in :45.80. Three-quarters went in 1:10.27 with All Out Blitz and New York Central noses apart as Runaway Ghost made a big move on the outside to get the lead with a quarter mile to race. As the field turned for home Runaway Ghost lead by four lengths over **Dream Baby Dream**. These two broke clear from the field but it was all Runaway Ghost as he went on to win by more than two lengths under a hand-ride by jockey Tracy Hebert in a final time of 1:49.20. Peace finished third and **Seven Trumpets** finished fourth.

With his victory in the Louisiana Derby, Noble Indy is now first in the Kentucky Derby qualifying points race with 110 points. Bolt d'Oro is second with 64 qualifying points and Enticed is third with 63 points.

This coming week we have the UAE Derby at Meydan Racecourse on Saturday, along with the Florida Derby at Gulfstream Park. Both of these races have 170 Kentucky Derby points available. Also, on Friday, March 30th the Burdard Stakes will be run at Newcastle. This is the final race in the European Road to the Kentucky Derby.



PAT CONLEY | Paris-Bourbon County Tourism Commission

LOOK WHO'S IN PARIS (Mar. 23, 2018) Andy and Cherylyn Semonco of Chester, VA substituted Paris, KY for Paris, France as part of their 14th wedding anniversary celebration. They toured several horse farms including Briarbrooke, Claiborne, Hunterton, Indian Creek and Runnymede. They visited Fryman's Boat Dock, Bait Shop & Art Gallery, Colville Covered Bridge and Hartfield & Co. Distillery. They took part in the John Townsend historic marker unveiling on Russell Cave Road, and even had their marriage blessed by Chaplain Fred of The Short Arm Gang motorcycle club. The couple stayed at The Treehouse at Stoner Creek B&B, where they enjoyed a cruise aboard "The Bourbon Belle" pontoon boat. They're shown here with Stephen Swisher, co-owner of Happy People Coffee Co., Seventh & Main; Happy People is serving breakfast, lunch and supper daily.



Gary Garrison, VP, Bourbon St. Cruisers, Greg Dotson, David Dotson, Larry Stevenson, President Bourbon St. Cruisers and Rodney Dotson. Stevenson is receiving a sponsorship check from the Central Kentucky Classic Cars.

Bourbon Street Cruisers Welcome Central Kentucky Classic Cars As 2018 Sponsor

Larry Stevenson, President, Bourbon Street Cruisers, announced that this year's primary sponsor for the club's Cruise-Ins will be the Central Kentucky Classic Cars, 4121 Lexington Road, Paris. The classic car business is owned by the Dotson Brothers, well-known in the local auto business for several generations.

Stevenson said the 100 member club will hold six

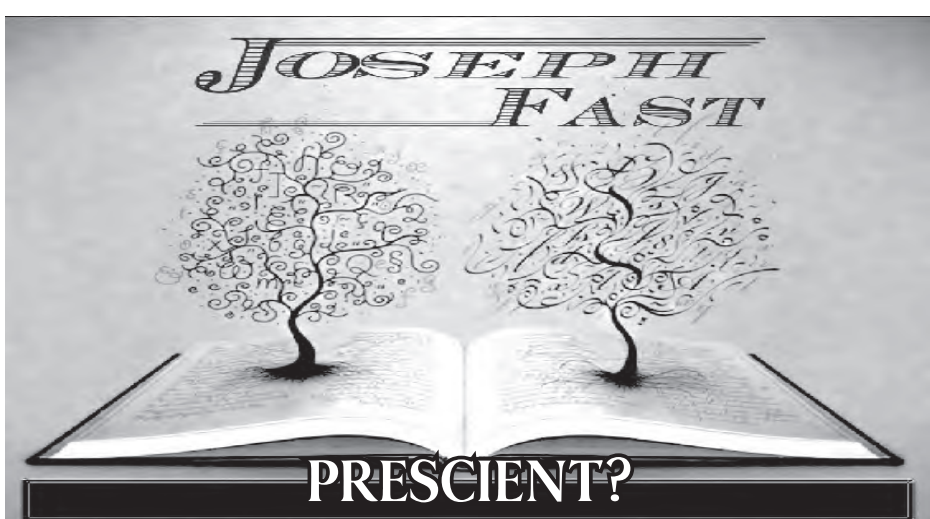
Cruise-Ins in downtown Paris this summer. May 12, June 9, July 14, August 14, Sept. 8 and October 7. The Cruise-Ins attract local club members, but also classic car owners from across the state and beyond.

"We will have up to 200 cars in some of our Cruise-Ins," said Stevenson.

The kick off for this summer's classic car events will be a special Cruise-In held at the

Central Kentucky Classic Car business on Lexington Road. The all day event, May 11, will also be sponsored by Jerry's Restaurant and Shooter's Alley. There will be an all day party with food, music and lots of cars in classic mint condition.

"This is good for the community," said Rodney Dotson, "We want to share our passion for the classic cars and the local club that shows them."



Prescient? Proficient tea leaf reader? Acute interpreter of the nation's pulse? Or merely an idiot savant? Your choice, there is no wrong answer!

Back in January I penned an article "Enough is Enough" and in February I penned "And the Children Will Lead." Both articles were in response to the current gun violence and the apathy of our congressional leaders. Of course "Enough is Enough" was written prior to the horrific gun massacre at Marjory Stoneman Douglas High School in Parkland, Florida and "And the Children Will Lead" was written just after the school shootings. Both article captions seem to be current themes and were symbolized in the March 24th marches on Washington, D.C. and at various locations throughout the world.

I sat mesmerized watching the full, commercial free, coverage on TV for the entire 5 hours of the events in Washington, D.C. This was a powerful and moving display of unity regarding the need for gun control legislation and direct warnings to legislators. The D.C. crowd was estimated at over 800,000. The speakers were young, articulate, composed and extremely passionate. They are not to be dismissed. Ironically, the Senate approved the 2,232 page Omnibus spending bill on Thursday, allowing the majority of Congress to head home, or elsewhere, for their two week recess. How convenient! Oh, and the bill was never read by any member of the House or the Senate prior to voting. And on Saturday, our president, with his overabundance of empathy, spent the day playing golf in Mar-a-Lago, twittering nary a word about the March for Our Lives. Out of sight, out of mind, no doubt. I'm not sure pathetic is a strong enough word. Actually, the majority of Congress was invisible on Saturday. Wonder where our congressmen hid?

While I am old enough to remember the anti-war protests during the Vietnam War when I was a student on the UK campus, I certainly never had the maturity or intelligence to understand the anti-war movement. Perhaps there was a reason for my naiveté. The Vietnam War was being waged on the other side of the world and was not a regularly discussed or debated issue in secondary school systems. Whereas school gun violence and gun related deaths are a part of our national landscape and are being discussed in our school systems. Elementary and secondary schools regularly hold drills on gun violence and active shooter scenarios. These messages do hit closer to home and as every affected school says "it could happen anywhere." The new economic choices are "bullets versus pencils" instead of the classic "guns or butter" debate.

Kids are scared, and rightfully so. Should they be afraid to go to school? No!!!!!! And that's exactly what they are trying to tell Congress. So far all they are getting is lip service and are being used for presidential photo ops, Mr. President, remember to tell them that you "hear them," they'll believe you. But wait, Mr. President, you've yet to follow through with your tough talk on gun control in that White House listening session. Did the NRA dinner meeting change your mind? Note to Mr. President and gun compliant legislators: your days are numbered. If you paid close attention last Saturday, the marches weren't just a Parkland, Florida call to arms, it was a national wake up call. Speakers addressed gun violence in many different cities, and expressed action plans to impact elections in all 50 states. And these kids are very tech savvy and know how to organize and mobilize. Let's not let them down anymore. I'm on board!!!! How about you?

NOTICE OF COMPLAINT FOR FORECLOSURE IN BOURBON COUNTY

Notice is hereby given that on March 19, 2018 Reverse Mortgage Solutions, Inc. filed a Complaint in the Bourbon Circuit Court, Paris, Kentucky. The suit, being Civil Action No. 18-CI-00063, seeks to enforce a lien it claims to have on property located at 1922 Lovers Lane, Paris, Kentucky 40361 by virtue of a Mortgage, filed for record on September 12, 2013 in Mortgage Book 560, Page 495, of the Bourbon County Court Clerk's Office. The object of said suit is to obtain from the Court recognition that the lien is valid, and for the Court to order the sale of the property to help satisfy an alleged amount owed.

Any person who is an heir, devisee, or legatee, and their spouses, if any, of Callie K. Burns, deceased, formerly a resident of Paris, Bourbon County, Kentucky, must file an Answer to the suit in the Office of the Bourbon Circuit Court Clerk, 310 Main Street, Paris, Kentucky, in accordance with the Kentucky Rules of Civil Procedure, within in fifty (50) days of March 19, 2018.

The failure of any person having the right to answer within the fifty (50) day period may result in such person being forever barred and foreclosed as to any defense or objection he or she might have to the sale, and the judgment may be taken by default.

INVITATION TO BID CITY OF NORTH MIDDLETOWN, KENTUCKY

The City of North Middletown, Kentucky is requesting Proposals from interested parties for the purchase of the North Middletown Water and Wastewater facilities.

The City owns the following facilities:

- Water Facilities:
 - Water supply lines of 8", 6", 4", and domestic water service lines totaling approximately 119,143 feet.
 - (2) Two 100,000 gallon elevated water storage tanks. Both tanks have undergone complete rehabilitation and painting as of the fall of 2015
 - SCADA equipment to monitor system
 - 382 customer connections with newly installed radio read meters.
 - Radio read hardware with spare meters and end-points
 - (40) Fire hydrants.
 - Approximate annual average daily metered flow of 175,000 gpd.
- Wastewater Facilities:
 - Wastewater package plant with a capacity of 88,000 gpd. (current average flow - 45,000 gpd)
 - (3) Wastewater lagoons currently used as overflow storage for system.
 - Gravity fed collection system of approximately 19,560 feet of 8" mains.
 - Approximately 248 customer connections, all within the city limits.

The City is selling all tangible personal property (the facilities) and the intangible property (customers and going concerns, etc) and utility buildings. The City will enter into a franchise agreement for the use of rights of way and other City property. The City will perpetually retain first right of refusal regarding any subsequent transactions regarding the transfer of ownership or operations of these facilities and resources.

The successful bidder will assume all obligations with respect to the water distribution, and sewer collection and treatment, in accordance with the relevant governing regulating bodies and creditor agencies and taxation authorities.

The minimum requirements for qualified bidders include:

- 5 years in good standing with the Commonwealth of Kentucky, Division of Water, for both water and wastewater operations.
- Total assets in excess of \$3 million.
- Servicing a population over 3000 customers in Kentucky.
- Ownership of emergency utility equipment which can be dispatched to North Middletown within 45 minutes.
- Emergency Operator dispatch to North Middletown within 45 minutes.
- The employment of at least 3 water and wastewater operators.
- Requirement to bid for both water and wastewater systems combined, (no single-system bids).
- The bid will be a lump sum payment amount, clearly stated in US dollars.
- It is the intent to have a purchase agreement signed by July 1, 2018.

The water and wastewater utility candidate entity must clearly provide documentation of compliance with the above requirements of the City of North Middletown.

The City reserves the right to waive any irregularities, award based upon the various considerations of the North Middletown City Commission, and negotiate with up to two (2) most qualified bidders.

Please feel free to contact the city office with questions or request for documentation to assist with due diligence:

North Middletown City Office
P.O. Box 69
North Middletown, KY 40357
(859) 362-7007

Responses are due by 4pm EST, April 17, 2018 to:

North Middletown City Office
Attention: Utility Bid
P.O. Box 69
3287 North Middletown Road
North Middletown, KY 40357



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CONFIDENTIAL RESPONSE TO REQUEST FOR PROPOSAL

NORTH MIDDLETOWN, KENTUCKY

By:



KENTUCKY
AMERICAN WATER

April 17, 2018



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1. EXECUTIVE SUMMARY

Kentucky American Water (KAW) understands that North Middletown is seeking solutions to address water and wastewater system-related compliance, debt and infrastructure sustainability challenges, and we believe that we can provide the necessary solutions for these problems. Therefore, Kentucky American Water is pleased to submit this purchase proposal (“Proposal”) setting forth its desire in acquiring (“Transaction”) the assets of North Middletown, Kentucky’s water and wastewater systems. We meet all requirements for submitting this proposal and have provided additional detail regarding how we are able to do so in this document.

The company proposes a total investment of \$1,200,000 made in a lump sum payment to North Middletown for its water and wastewater facilities and assets and a commitment of ongoing capital investments in the water and wastewater systems as needed. This offer is contingent on Kentucky American Water completing due diligence to its satisfaction and on obtaining an agreement with Kentucky Division of Water to suspend enforcement actions for a reasonable period of time following the acquisition.

2. COMMITMENT TO COMMUNITY

Kentucky American Water is committed to the communities it serves through in-kind and financial support for a variety of civic, economic development and charitable organizations. Employees are active in the communities we serve through volunteer efforts such as board service, Adopt-a-Highway cleanups and collection drives for food banks and disadvantaged youth. The company coordinates annual grant programs and supports entities such as school science fairs, community festivals, fire departments, environmental programs and activities, and economic development initiatives. Examples of such



support include the company’s sponsorship of the Owen County science fair, Chautauqua Days of Millersburg, the stream clean-up efforts of the Friends of Stoner Creek and enhancements made to the park area at the Owen County Fairgrounds. Our annual Firefighting Support Grant program is coordinated each fall and provides grants to volunteer and professional fire departments throughout our service area. The company also provides an annual contribution to its H2O Help to Others program to help qualifying customers who

are experiencing financial crisis with payment of their water bills.



3. REFERENCES

Mayor City of Owenton, KY

David "Milkweed" Wotier
502-484-2322
milkweed007@gmail.com

Former Mayor City of Millersburg, KY

Nathan Zingg
859-340-2580
nszingg@gmail.com

Vice Mayor City of Millersburg, KY

Lorrain Smoot
859-484-3901
lsmoot724@gmail.com

Mayor City of Sadieville, KY

Claude Christensen
502-857-4576
christensen13@bellsouth.net

4. OVERVIEW OF KENTUCKY AMERICAN WATER

Where We Serve

Kentucky American Water provides quality, reliable water service to more than 500,000 people in portions of 13 counties – Bourbon, Clark, Fayette, Gallatin, Grant, Harrison, Jackson, Jessamine, Nicholas, Owen, Rockcastle, Scott, and Woodford – including the cities of Lexington, a portion of Georgetown, Millersburg, Monterey, Owenton and Sadieville. The company also provides wastewater service to Millersburg and Owenton as well as the Rockwell Village community in Clark County and the Ridgewood community in Franklin County.

Our 130-Year History

The company's roots date back to 1885 when the utility began operations as the Lexington Hydraulic and Manufacturing Company, which was started by three Lexington businessmen to address the community's need for a water works. The company's name changed to Lexington Water Company in 1922 and then Kentucky American Water in 1973. The utility has remained an investor-owned utility throughout its existence.



Kentucky American Water, which today employs approximately 132 people, has been part of what is now known as American Water (NYSE:AWK) since 1927. American Water is the largest publicly traded U.S. water and wastewater utility company. Headquartered in Voorhees, New Jersey, the company employs 6,900 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 46 states and Ontario, Canada. American Water is American owned and operated.

Today's Operations

The company uses the Kentucky River at pools 3 and 9, and Jacobson Reservoir in Lexington, as sources of supply. We operate three water treatment plants (two in Fayette County and one in Owen County) and four wastewater plants (in Millersburg, Owenton, at Rockwell Village in Clark County and the Ridgewood community in Franklin County).



Our rates and service are regulated by the Kentucky Public Service Commission, and we are proud members of the national Partnership for Safe Water, which means our plants produce water that surpasses federal and state drinking water standards. The company invests approximately \$25 million annually in capital improvements.

Kentucky American Water is also a proud member of the KY Excel environmental leadership program, and earned Best Place to Work in Kentucky awards each year from 2014 through 2017.

5. LEADERSHIP TEAM BIOGRAPHIES

Nick Rowe, President

Nick Rowe is President of Kentucky American Water. In this role, he reinforces and strengthens customer, regulatory and local government relationships, drives operational and financial results and is the principal external contact for American Water in Kentucky. Additionally, Rowe serves as senior vice president of American Water's Southeast Division, leading the states of Kentucky and Tennessee.

Rowe's more than 30-year career with American Water has included serving in various management positions with responsibility for the day-to-day operations of American Water facilities in numerous states, including West Virginia, Pennsylvania, and Kentucky. Similar to his current role, Rowe previously served as senior vice president of American Water's Central and Eastern divisions, which included the



states of Illinois, Indiana, Iowa, Maryland, Michigan, Missouri, New York, Ohio, Virginia and West Virginia.

Rowe holds a bachelor's degree in engineering from Western Kentucky University and a master's in business administration from Lebanon Valley College. He attended executive education programs at Oxford University in England and IMD in Lausanne, Switzerland.

Kevin Rogers, Vice President of Operations

Kevin Rogers is Vice President of Operations for Kentucky American Water. Based in Lexington, he is responsible for the company's water quality, field operations, production and maintenance functional areas and directing cost-effective, high quality customer service and operational integrity.

Rogers joined American Water in 2009 as finance manager for Tennessee American Water in Chattanooga and was promoted to manager of operations four years later and then director of operations. He was promoted to vice president of operations for Kentucky American Water in November 2015.

Before joining Tennessee American Water he was executive vice president of finance and operations for Crescent, Inc. His career also includes 17 years in a variety of financial and management roles with Rubbermaid Commercial Products.

A Chattanooga native, Rogers graduated with a bachelor's of science degree in Accounting from Freed-Hardeman University in Henderson, Tennessee, and earned a master's in business administration from the University of Tennessee at Chattanooga. He also holds an active CPA license.

Brent O'Neill, Director of Engineering

Brent O'Neill is Director of Engineering for Kentucky American Water and Tennessee American Water. He has more than 26 years of engineering experience for consulting, municipal and private companies. He joined American Water in 1996 as a staff engineer and since then has worked in various engineering and operations roles, including serving as Senior Asset Manager for Thames Water in Reading, United Kingdom, where he led a portion of the GIS redesign project for Thames Water and American Water when they were affiliated.

Brent holds a B.S. degree in Civil Engineering from the University of Illinois and an MBA from Lumpkin College of Business, Eastern Illinois University. He is a registered Professional Engineer in the Commonwealth of Kentucky, Illinois, Tennessee and Iowa.

Linda Bridwell, Senior Manager of Rates and Regulation

A Lexington native, Linda Bridwell has more than 26 years of experience with Kentucky American Water. She has held a variety of roles with increasing responsibility and scope, spanning engineering, project management of new water plant construction, and environmental compliance. She was named Senior Rates and Regulation Manager in 2012.



She graduated from the University of Kentucky with both a B.S. and M.S. in Civil Engineering, and she holds an MBA from Xavier University. She has been appointed to the Kentucky Infrastructure Authority board by three different governors.

Jimmy Keeton, Director of Government Affairs and Business Development

Jimmy Keeton joined Kentucky American Water in 2016 as Director of Government Affairs and Business Development. Keeton leads the company's government affairs and business development activities in Kentucky, maintaining strong relationships with government officials throughout the state, tracking and engaging in discussions about legislation impacting the water and wastewater industries, and identifying business growth opportunities.

A native of Ashland, Ky., Keeton has more than 11 years of legislative affairs experience and more than 30 years of utility experience. Before joining Kentucky American Water, he was employed for 29 years by Kentucky Power Company, where he held positions in customer service, business operations support, and most recently, government affairs.

David Treece, Senior Manager of Field Operations

David Treece joined Kentucky American Water as senior manager of field operations for the Central Division, based in Lexington, in 2017. Treece oversees the company's field operations in Bourbon, Clark, Fayette, Harrison, Jackson, Jessamine, Nicholas, Rockcastle, Scott and Woodford counties.

A native of Columbia, Mo., Treece joined Missouri American Water in 1995 as a meter reader in the company's St. Louis service area. Since that time he has also held positions in construction and maintenance, and in 2012 was promoted to operations supervisor and then operations manager for Missouri American Water's Jefferson City operations.

Treece is a military veteran, having served in the U.S. Marine Corps and honorably discharged in 1992. After separating from the U.S. Marines, he attended Florissant Valley Community College in St. Louis, Mo.

Dorothy Rader, Manager, Water Quality and Environmental Compliance

Dorothy Rader joined the company as water quality and environmental compliance manager in 2017. Rader oversees the company's water quality department which is responsible for all water quality testing, monitoring and reporting and includes a team of water quality specialists.

With 20 years of experience working in the drinking water industry, Rader began her career in 1998 as a water plant operator for a utility district in Knoxville, Tenn. In 2001, she joined the City of Alcoa, Tenn, in the field of water treatment and distribution, and in 2014 joined Tennessee American Water in Chattanooga.

Rader holds a degree in chemical and environmental engineering technology, and is a certified operator in water treatment and distribution licensed by the states of Kentucky and Tennessee.

**Susan Lancho, External Affairs Manager**

Susan Lancho has nearly 30 years of experience in communications and public relations experience and 18 years of experience at Kentucky American Water. As external affairs manager, she is responsible for the utility's public information, community and media relations, serves as a liaison for local public officials. A Kentucky native, Susan holds a bachelor's degree in communications/public relations from the University of Kentucky.

6. BID REQUIREMENT FULFILLMENT

Kentucky American Water meets all requirements for submitting this proposal.

Good Standing with Kentucky Division of Water

Kentucky American Water has been providing quality, reliable drinking water service to customers since 1885. Kentucky American Water currently operates three water treatment plants with a total capacity of 85 million gallons of water per day and four wastewater treatment plants to serve water and/or wastewater customers in portions of 14 Kentucky counties. Kentucky American Water has a well-established cooperative relationship with the Kentucky Division of Water (KY DOW) and has been in good standing for far more than the five year requirement. Kentucky American Water was the first utility to join the Energy and Environment Cabinet's KY Excel program for excellence in environmental leadership and has won awards for past projects. Kentucky American Water's water treatment plants participate in the American Water Works Association Partnership for Safe Water, recognizing consistency in delivering high-quality water beyond minimum state and federal regulatory requirements. Two of the plants will receive the Partnership's Directors Award in 2018 for the 20th consecutive year. Kentucky American Water plants also participate in the KY DOW Area Wide Optimization Program (AWOP) and have been presented AWOP awards for excellence in water treatment.

Assets in Excess of \$3 Million

Kentucky American Water's most recent audited financial statements are for the calendar year ending in 2017. Asset at year's end in 2017 were \$614 million.

Kentucky Population Served

Kentucky American Water has more than 130,000 water and wastewater connections, serving a population of more than 500,000.

Ownership of Emergency Utility Equipment

Field Operations maintains a staff of over 60 employees who are experienced in multiple aspects of maintaining a distribution system. Collectively our employees have over 250 years of leak detection experience along with the resources necessary to make the repairs. We maintain 24-hour coverage by operating multiple schedules and have an after-hours emergency crew. Our utility fleet consists of



backhoes, excavators, dump trucks, utility trailers, pick-up trucks, service trucks, and several other pieces of equipment. We maintain numerous pieces of safety equipment such as: trenching and shoring equipment, highway and traffic safety equipment, and personal protective equipment. Our mission is to maintain service with as little disturbance to the customer as possible, all the while making sure our employees go home safely each and every day. Our personnel and equipment can be dispatched to North Middletown within 45 minutes.

Emergency Response to North Middletown

Kentucky American Water has treatment plant and distribution supervisors as well as emergency personnel on call around the clock for immediate dispatch. In addition, a toll-free line is staffed 24 hours a day for emergency calls. Kentucky American Water expects that both staff and equipment would be available to meet North Middletown's requirements. Our personnel and equipment can be dispatched to North Middletown within 45 minutes.

Employment of at least Three Water and Wastewater Licenses

Kentucky American Water currently staffs three Class IV surface water plants with 22 full time positions. Seven employees maintain Class IV water treatment licenses, and 38 maintain distribution licenses. In addition, Kentucky American Water currently has seven personnel that hold wastewater operator licenses.

Bid for Combined Water and Wastewater System

Kentucky American Water's offer includes the purchase of both water and wastewater systems.

Lump Sum Bid

The company proposes a total investment of \$1,200,000 made in a lump sum payment to North Middletown for its water and wastewater facilities and assets and a commitment of ongoing capital investments in the water and wastewater systems as needed. This offer is contingent on Kentucky American Water completing due diligence to its satisfaction and on obtaining an agreement with Kentucky Division of Water to suspend enforcement actions for a reasonable period of time following the acquisition.

The intent of the agreement with the Division of Water is to allow Kentucky American Water time to fully operate both water and wastewater systems, assess necessary physical repairs and treatment process options, and ensure both systems are within appropriate levels of compliance.

Purchase Agreement

It is Kentucky American Water's intention to cooperate fully with North Middletown in signing the purchase agreement by July 1, 2018.



7. CONCLUSION

Kentucky American Water believes that North Middletown would benefit from the sale of its system to us. Kentucky American Water proposes that the city would receive cash in exchange for all of the water and wastewater assets of North Middletown. Thereafter, Kentucky American Water would own, operate and maintain these systems – all with regulatory oversight from the Kentucky Public Service Commission and the Kentucky Environmental Protection Agency. With over 130 years of experience owning and operating water and wastewater systems, Kentucky American Water brings unique industry expertise to this process.

Kentucky American Water believes it can proceed expeditiously to develop a mutually agreeable transaction that will benefit the customers of North Middletown, the employees, and the community that it serves. Based on this experience we believe that the transaction will be promptly approved by all necessary regulatory authorities.

It is understood and intended that this Proposal constitutes a non-binding proposal and is not to be construed as commitment, representation or contract legally binding upon Kentucky American Water or the city, and no cause of action shall arise from this Proposal or be based thereon. Unless and until definitive agreements are entered into, neither Kentucky American Water nor the City shall be under obligation to the other, irrespective of this Proposal and irrespective of any negotiation, agreements, or undertaking between, or action taken by, the parties with respect to this Proposal and/or the Transaction.

This Proposal is being delivered to you with the understanding that its contents will remain strictly confidential and will be disclosed only to those executive officers and legal and financial advisors of the City who are directly involved in analyzing the transaction and that neither this Proposal nor its contents will be disclosed publicly or directly or indirectly discussed with or disclosed to any other perspective purchaser. In the event that disclosure is required by applicable laws, the City and Kentucky American Water will consult each other and use good faith efforts to obtain review and approval by the other party prior to any public disclosure.

Submitted by:

A handwritten signature in blue ink, appearing to read "Nick O. Rowe". The signature is fluid and cursive, with a long horizontal stroke at the end.

Nick O. Rowe, President
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Kentucky American Water
 Cost of Service - Income Statement
 N Middletown

APPROXIMATE REVENUE REQUIREMENT CALCULATION FOR NORTH MIDDLETOWN

Description	Present Rates	Adjustment	Proposed Rates
Revenues	\$291,863	\$15,912	\$307,775
Operation and Maintenance	106,509	145	106,655
Depreciation and Amortization	76,914		76,914
Taxes Other Than Income	15,571	32	15,603
Income Taxes	15,157	3,926	19,083
Operating Expenses	214,152	4,103	218,255
Utility Operating Income	\$77,711	\$11,809	\$89,520
Rate Base	1,085,088		1,085,088
Return on Rate Base	7.16%		8.25%

Income Tax Calculation		
Income before Taxes/Interest	92,868	108,602
Interest Expense	32,119	32,119
State Taxable Income	60,749	76,484
KY State Tax Rate	5.00%	5.00%
State Income Taxes	3,037	3,824
Federal Taxable Income	57,712	72,660
Federal Tax Rate	21.00%	21.00%
Federal Income Taxes	12,119	15,259
Total Income Taxes	15,157	19,083

Revenue Conversion	
Rate Base	1,085,088
Rate of Return	8.25%
Required UOI	89,520
UOI at Present Rates	77,711
UOI Deficiency(Excess)	11,809
Revenue Conversion	134.746%
Required Revenue Change	15,912

COMPARISON OF STAND-ALONE RATES AND SINGLE TARIFF RATES FOR NORTH MIDDLETOWN AND CURRENT SINGLE TARIFF CUSTOMERS

	Current Single Tariff Group & East		Proposed Rates With N. Middletown Stand Alone	Change
	N. Middletown (Present Rates)	Rockcastle (Proposed Rates)		
Total Revenue	\$291,863	\$107,419,128		
Other Revenues	0	2,483,214		
Revenues Subject to Incr (Decr)	291,863	104,935,914		
Revenue Adjustment	\$15,912	(\$15,912)		
Percent Incr (Decr)	5.45%	-0.02%		

	1000 Gallons	Present Rates Stand-Alone	Proposed Rates Single Tariff	Proposed Rates With N. Middletown Stand Alone	Change
N Middletown					
Average RES Use	3.790	\$53.59	\$39.12	\$56.51	\$17.39
Bill Change Vs Present Rates			(14.47)	2.92	\$17.39
Percent Change			-27.0%	5.45%	

	1000 Gallons	Present Rates Stand-Alone	Proposed Rates Single Tariff*	Proposed Rates With N. Middletown Stand Alone*	Change
Kentucky American					
Average RES Use	3.869	\$32.06	\$39.62	\$39.62	\$0.00
Bill Change Vs Present Rates			7.56	7.56	\$0.00
Percent Change			23.57%	23.55%	

*If the Company billed in fractions of a penny, there variance between rates would be 6/10 of a penny. But the average bills are the same when billed in pennies.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Melissa L. Schwarzell

- 73.** Refer to the Schwarzell Testimony, page 29, lines 3–6. Provide a comparison of the net book value of North Middletown's system to the purchase price.

Response:

Please see the schedule below. Also, please note that the purchase price shown is comprised of \$985,553 of consideration, and \$189,956 of grant recapture. The net book value (CIAC) is also influenced by the \$189,956 of grant recapture.

Kentucky American Water	
Case No. 2018-00358	
Response to PSC Data Request #2, Item 73	
KAW_R_PSCDR2_NUM0273_012519	
North Middletown Acquisition	
Original Cost of UPIS Assets	\$2,348,828
Accumulated Depreciation	(1,344,041)
CIAC	(74,946)
Net Book Assets	<u>\$929,841</u>
Purchase Price	<u>\$1,175,509</u>

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 74.** Provide a detailed explanation of the fair market value approach referenced in the Schwarzell Testimony.

Response:

The fair market value approach referenced in the testimony is a means of addressing cost recoverability of water system acquisitions. Fair market value can be defined as the price that a willing buyer will pay to a willing seller in an arms' length transaction. This is the first of the criteria established in Case No. 9059 in the 1985 Delta Natural Gas Company case ("Delta Case") and it provides a basis for cost valuation that represents real value and which is not dependent on how the assets were originally financed.

A fair market value approach would provide sound regulatory support for water system acquisitions specifically and would serve as viable replacement to the criteria established in the Delta Case, which dealt with the acquisition of an investor-owned gas company. A fair market value approach has three advantages for water utilities:

- 1) A fair market value approach brings the financial risk associated with water system acquisition into line with the financial risk of making other investments in water utility infrastructure in the Commonwealth of Kentucky.
 - a. The criteria for utility infrastructure investment recovery in Kentucky is prudence and reasonableness. However, the Delta Case specifies more criteria than this for recovering Utility Plant Acquisition Adjustments ("UPAA"). The Delta Case places a burden of proof upon the utility to establish, among other things, that "the initial investment plus the cost of restoring the facilities to required standards will not adversely impact the overall costs and rates of the existing and new customers, operational economies can be achieved through the acquisition,...and the purchase will result in overall benefits in the financial and service aspects of the utility's operations."¹ By introducing additional hurdles and uncertainties into the recovery process for UPAA related to infrastructure investment, the Delta Case criteria inherently makes a dollar of investment in UPAA more risky than a dollar of investment in water infrastructure for existing customers. This shift in risk profile creates a significant barrier to fruitful negotiations for acquisitions, and that barrier is not desirable given the public benefit of water system consolidation.
- 2) A fair market value approach allows for a valuation of assets that is not dependent

¹ Case No. 9059, September 11, 1995 Order, pp. 3-4.

on the accounting accuracy and completeness of an acquired system's books in light of the reality that such books can be less than adequate.

- a. The Delta Case criteria imply that the net book value of the acquired system is the appropriate foundation for original cost ratemaking, however the plant accounting records of some water utilities (especially unregulated water utilities) may not be as complete or accurate as those of the investor owned gas utility that was being acquired in the Delta Case. While non-regulated utilities may choose what they charge for service, investor owned utilities may only charge what regulators are able to identify as representing the cost of service. Consequently, investor owned utilities must track investments and costs much more carefully in order to ensure adequate revenue streams and financial stability. Given that 84% of small systems in Kentucky are not investor-owned, the necessity of keeping meticulous records of investment simply may not exist for most of the water sector in Kentucky
- 3) A fair market value approach allows fair valuation of assets regardless of how they were originally paid for.
- a. Because some water utilities, unlike investor owned gas utilities, do not always have ready access to capital markets, they instead may rely upon taxpayer-funded federal or state dollars to make infrastructure investments. This leads to net book values for the water sector that are lower than the true value of the system assets, due to high ratios of contributed funds. In a sample of 2017 annual reports from the gas sector and water sector in Kentucky, the ratio of CIAC to Net Plant for gas averaged 0.03%. In contrast, the ratio of Donated Capital to Utility Plant in the water sector averaged 46.73%

Columbia Gas		Atmos		Johnson County Gas		Delta Natural Gas	
CIAC	\$ -	CIAC	\$ 130,429	CIAC	\$ -	CIAC (if all Other Deferred Credits = CIAC)	\$ 160,538
Net Plant	<u>\$ 307,825,353</u>	Net Plant	<u>\$ 445,061,016</u>	Net Plant	<u>\$ 183,000</u>	UPIS	<u>\$ 137,760,747</u>
Ratio	<u>0.00%</u>	Ratio	<u>0.03%</u>	Ratio	<u>0.00%</u>	Ratio	<u>0.12%</u>

**Weighted Average Ratio of Net Plant
to CIAC** **0.03%**

Harrison County Water		Jessamine s. Elkhorn		Madison County Water		Garrard County Water	
Donated Capital	\$ 11,709,320	Donated Capital	\$ 10,668,536	Donated Capital	\$ 8,851,299	Donated Capital	\$ 9,492,352
Gross Plant	<u>\$ 21,731,917</u>	Gross Plant	<u>\$ 22,129,493</u>	Gross Plant	<u>\$ 26,370,482</u>	Gross Plant	<u>\$ 16,919,420</u>
Ratio	<u>53.88%</u>	Ratio	<u>48.21%</u>	Ratio	<u>33.57%</u>	Ratio	<u>56.10%</u>

Weighted Average **46.73%**

Even after any required grant recapture, these high ratios of contributed funds mean that UPA is much more likely with an arm's length negotiated water transaction than with an arm's length negotiated

transaction in the gas sector. Given the riskiness and negotiation barriers associated with UPAA (as described in the first bullet above), this gap between true asset value and net book value creates one more barrier to acquisition that is specific to the water sector.

For all of these reasons, the Company believes that a Fair Market Value approach to water system acquisition ratemaking in Kentucky could be a valid replacement of the criteria established in the Delta Case and could better support the public benefits of regionalization and consolidation for the citizens of the Commonwealth.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 75.** Provide a detailed explanation as to how a reliable and consistent fair market value would be calculated.

Response:

The concept of fair market value is straightforward, and, thus, well-suited for application when one utility acquires the assets of another utility. It is the purchase price reached when two parties negotiate at arm's length and without any conflict. The Commission would need only to ensure that two parties, free from any conflict, reached an agreement at arm's length and the resulting price would be fair market value. Such a purchase price would include the value of assets being acquired without regard for the source of funds originally used to buy or install a particular asset. This would mean that if part of the assets being acquired were originally obtained with grant funds, the value of those assets (less depreciation) would be included in the acquiring utility's rate base.

Please also see KAW's response to PSC 2-74.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Constance E. Heppenstall

- 76.** Refer to the Direct Testimony of Constance E. Heppenstall (Heppenstall Testimony), page 7, lines 14–18., which states that “[t]he estimated demands were based on judgment which considered field studies of customer class demands conducted for the Company, field observations of the service areas of the Company, the class factors used in the last cost of service study, the system maximum day and maximum hour demand ratios.”
- a. Explain whose “judgment” was used to develop the estimated demands.
 - b. Identify who conducted these field studies of the customer class demands and when these field studies occurred.
 - c. Explain how the estimated maximum day extra capacity and maximum hour extra capacity demands were calculated.

Response:

- a-c. As a correction to the Direct Testimony of Constance E. Heppenstall, the testimony on lines 14-18 should be modified to state “the estimated demands were based on the demand factors reflected in the Commission Order in Docket 2000-120 as a result of the Customer Class Water Demand Study-1999 performed by Burgess and Niple.” See the attached report.

Customer Class Water Demand Study - 1999

Kentucky-American Water Company

April 2000



BURGESS & NIPLE

KENTUCKY-AMERICAN WATER COMPANY

CUSTOMER CLASS WATER DEMAND STUDY – 1999

APRIL 2000

**Burgess & Niple, Limited
Engineers and Architects
5085 Reed Road
Columbus, OH 43220**

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INTRODUCTION

During the summer of 1999, June, July, August and September, the Kentucky-American Water Company (KAWC) installed *FloSearch* devices on a representative sample of customers in the commercial, other public authority (OPA), industrial and other water utility (OWU) customer classes in order to perform a customer class water demand study. Meters were read on a daily basis for 204 residential customers during the months of June, July, August and September in order to estimate the maximum day demand factor for the residential customer class.

During the summer of 1997 a similar type of demand study was also prepared but in the 1997 study, because of technical difficulties, the detailed information required to estimate the residential class maximum day demand was lost.

The purpose of a demand study is to determine the maximum day and maximum hour water use requirements (load factors) for each customer class. The estimated maximum day and maximum hour load factors that were calculated in the 1997 and 1999 demand studies should be considered in conjunction with other factors when future KAWC Cost of Service studies are prepared in order to allocate costs attributable to peak water demand requirements. Many components in water systems are designed and sized based upon maximum system demands. The cost of operation is also affected by peak demands placed upon the water system. Therefore, it is desirable to have information on customer class load factors for use in the cost allocation process.

However, the maximum day demand factors calculated in the 1999 demand study for the commercial, OPA, Industrial and OWU customers may need to be tempered because the 1999 summer was unusually hot and dry. There were also drought conditions. These conditions created unusually high demand factors for these customers. Because of the drought conditions, water use such as lawn watering was restricted. The water use restrictions during the summer of 1999 actually lowered the maximum day demand factors for the residential customer class. The five highest maximum day demand factors for the residential customers were 1.57, 1.59, 1.64, 1.66 and 1.77. The average is 1.65, which equals 165 percent. Normally the residential customer class maximum day demand is about 200 percent. Because of the water use restrictions, you can justify increasing the residential customer class demand factor 10 to 20 percent. If you increased the average of the five highest demand factors by 15 percent the result would be 190 percent (165 x 1.15).

A comparison of the 1997 and 1999 customer class demand factors are shown in the following table. The percents are based on the average of the five highest maximum day and maximum hour demand factors for all of the customer classes. The maximum day demand factor for the residential customer class was increased to 190 percent from 165 percent as previously stated.

Customer Class	Maximum Day		Maximum Hour	
	1997 Demand (%)	1999 Demand (%)	1997 Demand (%)	1999 Demand (%)
Commercial	167	185	276	262
OPA	160	174 / 168	225	208
Industrial	153	169	203	213
OWU	144	169	161	191
Residential	N/A	190	N/A	N/A

The demand study was a joint effort between KAWC and Burgess & Niple (B&N). KAWC performed all of the *FloSearch* water metering functions and B&N analyzed the raw data to determine customer class demands.

Auxiliary *FloSearch* metering equipment was installed on existing water meters to determine and record hour-by-hour water demands. Commercial, OPA, industrial and OWU customers were monitored during the months of June, July, August and September. Approximately 25 percent of the OPA customer class water usage was monitored with the *FloSearch* equipment, 74 percent of the industrial class water usage, 50 percent of the OWU class water usage, and 4 percent of the commercial class water usage. The largest number of customers that were successfully monitored were 18 commercial, 10 OPA, 6 industrial, and 4 OWU. More commercial, OPA and OWU customers were monitored than the number of customers indicated above but the *FloSearch* equipment malfunctioned on about 10 percent of the total number of customers that were monitored. The largest numbers of customers monitored were commercial customers but there are a total of about 7,709 commercial customers served by KAWC. There are about 430 OPA customers, 15 industrial customers and 8 OWU customers.

The report explains in detail how the maximum day and maximum hour load factors for each customer class were calculated. The following is a list of schedules in the demand study report.

Schedule 1 – Average Water Usage by Customer Class for the Monitored Customers

Schedule 2 – Commercial Class Composite Maximum Day

Schedule 2A – Commercial Class, Composite Maximum Hour

Schedule 3 – OPA Class, Composite Maximum Day

Schedule 3A – OPA Class, Composite Maximum Hour

Schedule 4 – Industrial Class, Composite Maximum Day

Schedule 4A – Industrial Class, Composite Maximum Hour

Schedule 5 – OWU, Composite Maximum Day

Schedule 5A – OWU Composite, Maximum Hour

Schedule 6 – Residential, Maximum Day Demand

Back up information is available to support the data shown on the schedules in this report. However, any request for supporting information should be as specific as possible in order to minimize the amount of backup information that will have to be retrieved and supplied.

MAXIMUM DAY DEMAND LOAD FACTORS

Schedule 4, the industrial user class composite maximum day demand information, will be used to explain how the maximum day load factors were calculated for each customer class. The peak maximum day demand factor, 1.75 occurred on July 30. The demand factor was calculated as follows. On Schedule 4, page 2/4 the columns with customer headings list the water usage in cubic feet that was recorded by the *FloSearch* equipment. On July 30, the customers monitored included Crest Products, General Electric, Pepsi Cola, Proctor and Gamble, The Trane Co., and Toyota. The total monitored usage was 505,826 cu. ft. which is equal to 3,793,695 gallons. The average daily billed usage for the six customers that were monitored, 2,162,679 gallons/day, is shown on Schedule 1 page 8/8 report page 17. Schedule 1 shows the average daily billed usage in gallons/day for all of the groups of customers that were monitored in each customer class. The demand factor was calculated by dividing the *FloSearch* usage by the average usage ($3,793,695 \text{ gallons} / 2,162,679 = 1.75$).

The maximum day and also the maximum hour demand factor for the customer classes will vary from year to year. In particular, 1999 was drought influenced. It would be appropriate to set the demand factors based on the average of the five highest demand factors that were calculated from the 1999 *FloSearch* data. This would especially be appropriate for the commercial customer class since only 4 percent of the commercial water usage was monitored.

The five highest maximum day demand factors for the industrial customer class based on monitoring six customers occurred on July 30, August 13, August 11, July 7, and July 28. The demand factors were 1.75, 1.69, 1.68, 1.67, and 1.66. The average is 1.69.

The demand study factors shown in the table on page 2 were based on the average of the five highest demand factors.

The five highest maximum day demand factors for the commercial, OPA, and OWU customer classes are as follows.

Commercial Customers Class - Schedule 2

Dates = June 9, 8, 21 and July 19 and 26

Factors = 2.16, 2.08, 1.89, 1.58 and 1.56

Average = 1.85

On June 9, 8 and 21 there were only 13 customers monitored. The dates of July 19 and 26 were used because 17 and 16 customers were monitored on those days including Central Baptist Hospital, which is one of the typical large commercial customers. Factors higher than 1.58 and 1.56 occurred in June but fewer customers were monitored.

OPA Customer Class - Schedule 3

Dates - July 23, 31, 30, 28 and 26

Factors = 1.78, 1.74, 1.73, 1.72 and 1.71

Average = 1.74

On the dates of July 23, 31, 30, 28 and 26 only 7 customers were monitored but the total average usage for these customers is equal to 88 percent of the total average usage for the largest number of OPA customers that were monitored. The dates of August 11 and 13 where maximum day usage rates of 1.54 and 1.59 occurred may want to be considered because 8 OPA customers were monitored including the UK Chemistry/Physics Building and the UK Dormitory Tower which are typical OPA customers. These customers were not monitored in July. The total average usage for the 8 customers monitored on August 11 and 13 is equal to 99 percent of the total average usage for the largest number of OPA customers that were monitored. If August 11 and 13 are used the maximum day demand factors would be 1.78, 1.74, 1.73, 1.59, and 1.54. The average would be 1.68 versus the average of 1.74 as previously calculated.

OWU Customer Class - Schedule 5

Dates = July 18, Aug 1, 4, and 7, July 17

Factors = 1.74, 1.71, 1.68, 1.68, and 1.66

Average = 1.69

Because of the 1999 drought conditions, the 1999 maximum day demand factors for the OWU customers are considerably higher than the 1997 OWU maximum day demand factors, 1.69 vs. 1.44. Because of the unusual drought conditions, the 1999 OWU maximum day demand factors probably should not be used in any future KAWC cost of service studies because the factors are higher than normal. On page 2 in the previous customer class demand study we prepared for the KAWC we made the following statement regarding the OWU maximum day demand. "OWU customers usually have their own storage facilities that help meet their maximum demands and some of the customers buy water from more than one water utility. Also the OWU customers may consist of a mix of residential, commercial, OPA and industrial customers that would help reduce the maximum demand factors."

MAXIMUM HOUR DEMAND LOAD FACTORS

Schedule 4A, the industrial user class maximum hour demand information, will be used to explain how the maximum hour load factors were calculated for each customer class. The first step in the maximum hour demand factor analysis was to select the day to analyze the hourly usage for the customer class. It is not necessary and would be too time consuming and expensive to analyze hourly usage for every day where the customers were monitored with the *FloSearch* equipment because it is reasonably certain that the maximum hour usage will occur on the maximum day. The day selected for maximum hour analysis for the industrial class was July 30 which is the highest maximum day demand for the industrial customers that were monitored.

Schedule 4A, report page 49, contains the hourly usage in cubic feet (cu. ft.) recorded by the *FloSearch* equipment for each of the customers that were monitored. The peak maximum hour demand factor, 2.36, occurred at the 11:00 hour. The usage recorded for each hour is the amount of water used during the previous hour. Therefore, the usage for the 11:00 hour represents the actual usage for the hour from 10:00 a.m. to 11:00 a.m. The 0:00 hour is midnight which is the beginning of the day. The total usage for the 11:00 hour was 28,355.98 cu. ft. which is equal to 212,670 gallons/hour. The total gallons per hour was multiplied by 24 to arrive at a daily rate based on maximum hour usage. The daily rate was then divided by the average daily usage for the monitored customers to determine the maximum hour demand factor ($5,104,0676 \text{ gallons} / 2,162,679 \text{ gallons} = 2.36$).

As previously stated, like the maximum day demand factor, the maximum hour demand factor will vary from year to year. Therefore, if this data were to be used it is appropriate to base the cost of service allocation maximum hour demand factor on the average of the five highest maximum hour demand factors calculated from the 1999 *FloSearch* data. Also, as previously stated, this is appropriate for the commercial customer class since only 4 percent of the commercial water usage was monitored.

The five highest maximum hour demand factors on August 26 occurred at the 11:00, 9:00, 23:00, 4:00 and 8:00 hourly recordings. The demand factors were 2.36, 2.16, 2.08, 2.05 and 2.01. The average is 2.13.

The days that were analyzed for maximum hour demands for the commercial, OPA and OWU customers were June 21 for commercial, July 23 for OPA, and July 18 for OWU. The days were the

peak maximum day demand days except for the commercial customer class. On July 9 when the highest commercial maximum day demand occurred 13 customers were monitored but the total average usage for the 13 customers was only 18 percent of the total average usage for the largest number of commercial customers that were monitored. The 13 customers monitored on June 21 represents 33 percent of the total average usage for the largest number of commercial customers that were monitored. Also on June 21 Little Joe's Mobile Home was monitored but Patchen Village Car Wash was not. Little Joe's Mobile Home is a more typical commercial customer than Patchen Village Car Wash is. The maximum hour demand factor for June 9 was calculated but the average for the five highest maximum hours was 4.20 which is unreasonably high compared to the commercial class maximum hour demand factors calculated in previous customer class demand studies.

The five highest maximum hour demand factors for the Commercial, OPA, and OWU customer classes is as follows:

Commercial Customer Class - Schedule 2A

Date = June 21

Times = 21:00, 20:00, 23:00, 0:00 and 6:00

Factors = 2.91, 2.87, 2.65, 2.37 and 2.29

Average = 2.62

OPA Customer Class - Schedule 3A

Date = July 23

Times = 11:00, 14:00, 13:00, 12:00 and 16:00

Factors = 2.27, 2.07, 2.03, 2.01 and 2.00

Average = 2.08

OWU Customer Class - Schedule 5A

Date = July 18

Times = 22:00, 19:00, 20:00, 21:00 and 11:00

Factors = 1.97, 1.92, 1.89, 1.89 and 1.86

Average = 1.91

Page 1 / 8												
KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 1												
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999												
	Average	Average	Data Used for Max Day & Max Hour Demand Factors									
Monitored	Usage	Usage										
Customers	CCF / Day	Gals. / Day										
			June	June	June	June	June	June	June	June	June	June
			1 - 2	" 3	4 - 7	8 - 9	10	11 - 13	14 - 16	17	18 - 22	23
COMMERCIAL												
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193										
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960							147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865
First Baptist Church	0.15	113										
Hartland Home Owners	1.64	1,230			1,230	1,230		1,230	1,230		1,230	1,230
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100										
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005					67,005	67,005	67,005	67,005	67,005	67,005
Patchen Village Car Wash	1.89	1,418		1,418	1,418	1,418	1,418	1,418				1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688			4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	223,629	225,047	230,965	83,005	148,780	150,010	148,592	147,362	148,592	297,970

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 1												
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999												
	Average	Average	Data Used for Max Day & Max Hour Demand Factors									
Monitored	Usage	Usage										
Customers	CCF / Day	Gals. / Day										
			June	June	June	June	June	July	July	July	July	July
			24	25	26 - 27	28 - 29	30	1 - 2	3 - 5	6	7 - 9	10 - 11
COMMERCIAL												
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193						97,193		97,193	97,193	
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865	11,865
First Baptist Church	0.15	113						113	113	113	113	
Hartland Home Owners	1.64	1,230		1,230			1,230	1,230	1,230	1,230	1,230	1,230
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100	59,100		
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005
Patchen Village Car Wash	1.89	1,418		1,418	1,418		1,418	1,418	1,418	1,418	1,418	1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	354,422	357,070	355,840	354,422	357,070	454,376	357,183	454,376	395,276	286,105

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 1												
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999												
	Average	Average	Data Used for Max Day & Max Hour Demand Factors									
Monitored	Usage	Usage										
Customers	CCF / Day	Gals. / Day										
			July	July	July	July	July	July	July	July	July	July
			12	13	14 - 15	16	17	18	19 - 23	24 - 25	26	27 - 31
COMMERCIAL												
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193	97,193
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865		11,865		11,865		11,865	11,865	11,865		11,865
First Baptist Church	0.15	113	113	113	113	113	113	113	113	113	113	113
Hartland Home Owners	1.64	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100										
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	383,411	395,276	383,411	395,276	383,411	298,083	395,276	286,218	383,411	395,276

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 1												
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999												
	Average	Average	Data Used for Max Day & Max Hour Demand Factors									
Monitored	Usage	Usage										
Customers	CCF / Day	Gals. / Day										
			Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.	Aug.
			1	2 - 4	5 - 7	8	9 - 14	15	16	17 - 20	21 - 22	23 - 28
COMMERCIAL												
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735
Aramark Uniform Service	129.59	97,193		97,193	97,193		97,193		97,193	97,193		97,193
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185	4,185
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960	147,960
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775
Emerson Center	15.82	11,865	11,865	11,865								
First Baptist Church	0.15	113	113	113	113	113	113	113	113	113	113	113
Hartland Home Owners	1.64	1,230										
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893	893	893	893
Hyatt Regency	78.80	59,100								59,100	59,100	
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418	1,418
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020
Total	605.83	454,373	296,853	394,046	382,181	284,988	382,181	284,988	382,181	441,281	344,088	382,181

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										Page 5 / 8	
KAWC -- CUSTOMER DEMAND STUDY											
SCHEDULE 1											
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999											
	Average	Average	Data Used for Max Day & Max Hour Demand Factors								
Monitored	Usage	Usage									
Customers	CCF / Day	Gals. / Day									
			Aug.	Aug.	Sept.	Sept.	Sept.	Sept.			
			29	30 - 31	1 - 20	21	22 - 23	24 - 30			
COMMERCIAL											
Jeff Adams Car Wash	4.98	3,735	3,735	3,735	3,735	3,735	3,735	3,735	3,735		
Aramark Uniform Service	129.59	97,193		97,193	97,193	97,193	97,193	97,193	97,193		
Bob Evans Restaurant	5.58	4,185	4,185	4,185	4,185	4,185					
Central Baptist Hospital	197.28	147,960	147,960	147,960	147,960						
Days Inn	9.71	7,283	7,283	7,283	7,283	7,283	7,283	7,283	7,283		
Dismas Charities Inc.	3.70	2,775	2,775	2,775	2,775	2,775	2,775	2,775	2,775		
Emerson Center	15.82	11,865									
First Baptist Church	0.15	113	113	113	113	113	113	113	113		
Hartland Home Owners	1.64	1,230									
Hoagland Comm. Retail	3.87	2,903	2,903	2,903	2,903	2,903	2,903	2,903	2,903		
Holiday Cleaners	1.19	893	893	893	893	893	893	893	893		
Hyatt Regency	78.80	59,100							59,100		
Lexington Country Club	47.98	35,985	35,985	35,985	35,985	35,985	35,985	35,985	35,985		
Little Joe's Mobile Hms.	89.34	67,005	67,005	67,005	67,005	67,005	67,005	67,005	67,005		
Patchen Village Car Wash	1.89	1,418	1,418	1,418	1,418	1,418					
Patchen Wilkes Farm	6.70	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025		
Parkhills Apts. LTD	6.25	4,688	4,688	4,688	4,688	4,688	4,688	4,688	4,688		
Wendy's Hamburgers	1.36	1,020	1,020	1,020	1,020	1,020	1,020	1,020	1,020		
Total	605.83	454,373	284,988	382,181	382,181	234,221	228,618	287,718			

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KAWC -- CUSTOMER DEMAND STUDY									
SCHEDULE 1									
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999									
	Average	Average	Data Used for Max Day & Max Hour Demand Factors						
Monitored	Usage	Usage							
Customers	CCF / Day	Gals. / Day							
			Aug.	Aug.	Aug.	Aug.	Aug.	Sept.	Sept.
			8 - 17	18	19 - 29	30	31	1 - 16	17 - 30
OTHER PUBLIC AUTH.									
Ag. Science Dept. , UK	5.17	3,878	3,878	3,878	3,878		3,878	3,878	3,878
Federal Medical Center	468.90	351,675	351,675	351,675	351,675	351,675	351,675	351,675	351,675
Shephards House Inc.	1.46	1,095		1,095	1,095	1,095	1,095	1,095	1,095
UK Chem/ Physic Bldg	63.58	47,685	47,685	47,685	47,685	47,685	47,685		
UK Cooling Plant	107.57	80,678	80,678	80,678	80,678	80,678	80,678	80,678	80,678
UK Dormitory Tower	89.45	67,088	67,088	67,088	67,088	67,088	67,088	67,088	67,088
UK Heating Plant									
UK Horticulture	66.90	50,175	50,175	50,175	50,175	50,175	50,175	50,175	50,175
UK Hospital	339.87	254,903	254,903	254,903	254,903	254,903	254,903	254,903	
VA Hospital , Fed. Govt.	175.63	131,723	131,723	131,723	131,723	131,723	131,723	131,723	131,723
US Postal Service	0.82	615			615	615	615	615	615
Total	1319.35	989,513	987,805	988,900	989,515	985,637	989,515	941,830	686,927

KAWC -- CUSTOMER DEMAND STUDY										
SCHEDULE 1										
CUSTOMER CLASS AVERAGE WATER USAGE - YEAR ENDING NOV. 1999										
Monitored Customers	Average Usage	Average Usage	Data Used for Max Day & Max Hour Demand Factors							
	CCF / Day	Gals. / Day	June 1 - 4	June 5 - 7	June 8 - 30	July 1 - 31	Aug. 1 - 31	Sept. 1 - 6	Sept. 7	Sept. 8 - 30
INDUSTRIAL										
Crest Products Inc.	10.98	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235	8,235
General Electric	335.39	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543	251,543
Pepsi Cola	93.28	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960	69,960
Proctor & Gamble	43.11	32,333			32,333	32,333	32,333	32,333		32,333
The Trane Company	204.48	153,360		153,360	153,360	153,360	153,360	153,360	153,360	153,360
Toyota	2196.33	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248	1,647,248
Total	2883.57	2,162,678	1,976,986	2,130,346	2,162,679	2,162,679	2,162,679	2,162,679	2,130,346	2,162,679
			June 1 - 8	June 9 - 30	July 1 - 31	Aug. 1 - 31	Sept. 1 - 30			
OTHER WATER UTILITIES										
Lex. South Elkhorn(903)	671.95	503,963	503,963	503,963	503,963	503,963	503,963	503,963		
Lex. South Elkhorn(892)	1.01	758	758	758	758	758	758	758		
City of Midway	180.03	135,023						135,023		
Spears Water	161.10	120,825		120,825	120,825	120,825	120,825	120,825		
Total	1014.09	760,568	504,721	625,546	625,546	625,546	625,546	760,569		

KAWC -- CUSTOMER DEMAND STUDY											
SCHEDULE 2											
COMMERCIAL USER CLASS - COMPOSITE MAX DAY											
		Aramark		Central					Hartland		
June	Jeff Adams	Uniform	Bob Evans	Baptist		Dismas	Emerson	First Baptist	Home	Hoagland	Holiday
1999	Car Wash	Service	Restaurant	Hospital	Days Inn	Charities Inc	Center	Church	Owners	Comm. Rtl	Cleaners
	Cu. Ft.		Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.	Cu. Ft.
1	1		426	24,050	635	304	1,699			512	169
2	65		410	23,226	841	347	1,843			525	128
3	502		393	17,023	1,067	353	1,694			621	138
4	826		496	21,528	1,498	360	1,794		290	575	262
5	634		541	17,191	1,875	387	1,597		290	170	203
6	326		566	17,481	1,522	448	1,603		290	154	1
7	610		564	22,454	1,451	383	1,836		732	486	312
8	534		524		1,880	381	1,527		850	473	286
9	468		392		1,238	335	1,729		869	474	288
10	666		410		1,558	391	1,606			486	253
11	690		536		1,223	541	1,796		815	474	67
12	634		650		2,568	321	1,762		813	170	26
13	324		646		1,736	388	1,538		804	150	18
14	36		469		1,381	337	1,586		821	482	129
15	425		460		1,669	420	1,662		835	530	363
16	82		486		1,503	388	1,771		830	470	302
17	442		520		1,997	336	1,623			467	106
18	788		558		1,997	435	1,724		815	449	366
19	821		683		2,181	346	1,750		811	175	639
20	341		800		1,914	383	1,512		811	159	637
21	651		666		2,301	377	1,748		812	487	354
22	656		480		1,989	380	1,704		795	513	118
23	695		477	26,405	2,374	350	1,627		821	466	158
24	3		515	24,550	2,470	334	1,533			521	128
25	323		665	26,383	1,922	431	1,618		325	465	77
26	503		791	21,773	1,587	444	1,477			176	34
27	70		743	21,421	1,400	376	1,530			154	25
28	17		586	26,382	1,372	520	1,637			497	137
29	109		434	26,839	1,689	328	1,652			489	129
30	324		445	25,524	1,819	321	1,537		580	471	117
Total	12,566		16,332	342,230	50,657	11,445	49,715		14,009	12,241	5,970

SCHEDULE 2

					Patchen				
June	Hyatt	Lexington	Little Joe's	Village	Patchen	Parkhills			Wendy's
1999	Regency	Country Club	Mobile Hms	Car Wash	Wilkes Farm	Apts LTD			Hamburgers
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.			Cu. Ft.
1		7,389			527				107
2		657			482				128
3		862		153	516				136
4		5,089		163	550	529			137
5		11,440		218	458	743			149
6		7,469		225	740	773			138
7		9,504		152	1,372	734			172
8		14,717		149	931	645			128
9		15,563		132	1,588	679			146
10		16,409	8,529	131	1,453	658			151
11		19,566	8,742	152	2,089	746			164
12		16,350	8,437	175	1,359	744			155
13		16,141	9,237	211	1,689	747			152
14		8,726	9,102		1,841	656			169
15		1,149	8,665		519	653			135
16		4,628	8,886		508	642			153
17		9,049	8,311		516	662			146
18		13,907	8,425		720	692			153
19		10,577	8,754		881	689			163
20		15,584	9,191		694	891			124
21		19,341	8,726		1,139	669			145
22		17,092	8,719		1,249	627			139
23		19,774	8,381	108	786	655			191
24	11,218	8,626	8,680		523	588			138
25	11,045	628	8,590	101	712	743			168
26	11,571	556	9,341	207	742	810			113
27	9,123	2,140	8,890	103	465	731			109
28	7,471	533	8,994		704	649			184
29	6,355	450	8,877		726	616			138
30	7,405	639	9,165	133	511	632			141
Total	64,188	274,555	184,642	2,513	26,990	18,603			4,372

SCHEDULE 2

SCHEDULE 2						
					Tot. Average	
					Usage for	
				Number of	Customers	Max Day
June		Total	Total	Customers	Monitored	Usage
1999		Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios
1		35,819	268,643	11	223,629	1.20
2		28,652	214,890	11	223,629	0.96
3		23,458	175,935	12	225,047	0.78
4		34,097	255,728	14	230,965	1.11
5		35,896	269,220	14	230,965	1.17
6		31,736	238,020	14	230,965	1.03
7		40,762	305,715	14	230,965	1.32
8		23,025	172,688	13	83,005	2.08
9		23,901	179,258	13	83,005	2.16
10		32,701	245,258	13	148,780	1.65
11		37,601	282,008	14	150,010	1.88
12		34,164	256,230	14	150,010	1.71
13		33,781	253,358	14	150,010	1.69
14		25,735	193,013	13	148,592	1.30
15		17,485	131,138	13	148,592	0.88
16		20,649	154,868	13	148,592	1.04
17		24,175	181,313	12	147,362	1.23
18		31,029	232,718	13	148,592	1.57
19		28,470	213,525	13	148,592	1.44
20		33,041	247,808	13	148,592	1.67
21		37,416	280,620	13	148,592	1.89
22		34,461	258,458	13	148,592	1.74
23		63,268	474,510	15	297,970	1.59
24		59,827	448,703	14	354,422	1.27
25		54,196	406,470	16	357,070	1.14
26		50,125	375,938	15	355,840	1.06
27		47,280	354,600	15	355,840	1.00
28		49,683	372,623	14	354,422	1.05
29		48,831	366,233	14	354,422	1.03
30		49,764	373,230	16	357,070	1.05
Total		1,091,028	8,182,710			

KAWC -- CUSTOMER DEMAND STUDY											
SCHEDULE 2											
COMMERCIAL USER CLASS - COMPOSITE MAX DAY											
		Aramark	Central						Hartland		
July	Jeff Adams	Uniform	Bob Evans	Baptist	Days Inn	Dismas	Emerson	First Baptist	Home	Hoagland	Holiday
1999	Car Wash	Service	Restaurant	Hospital	Days Inn	Charities Inc	Center	Church	Owners	Comm. Rtl	Cleaners
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
1	199	9,571	643	26,002	1,610	301	1,568	17	1	480	138
2	337	9,140	622	26,916	1,538	351	1,570	14	579	504	79
3	683		664	20,754	1,624	332	1,734	35	458	207	5
4	0		583	21,444	1,559	329	1,511	21	457	180	1
5	461		558	22,372	1,553	568	1,623	27	465	184	1
6	456	9,674	493	29,009	1,873	289	1,567	10	453	483	1
7	460	9,797	551	27,964	1,400	391	1,520	17	470	474	1
8	549	12,452	473	29,317	2,053	542	1,671	25	1	467	1
9	499	15,104	656	28,510	1,879	458	1,133	11	468	419	2
10	9		762	23,446	2,047	365			1	164	11
11	667		719	20,106	1,445	365			477	157	12
12	490	16,133	485	26,407	1,272	396		11	470	475	154
13	233	15,267	468	26,915	2,205	448	1,066	24	477	519	203
14	371	16,081	496	28,782	1,768	355		21	478	479	196
15	399	15,987	492	28,615	2,426	444		10	1	505	136
16	671	12,983	637	30,686	1,741	456	1,105	11	462	441	236
17	772	1,611	701	25,608	2,188	665		18	1	164	222
18	224		754	23,269	1,438	462	1,208	28	478	157	1
19	410	16,818	558	30,086	3,202	467	1,504	26	474	497	105
20	290	15,827	1,357	30,532	1,411	375	1,391	13	471	495	105
21	154	17,001	853	29,562	1,757	409	1,590	19	480	497	117
22	234	16,261	502	10,137	1,048	439	1,345	20	1	472	115
23	503	13,689	556	4,268	1,291	816	1,116	16	579	421	104
24	580		809	4,090	2,142	451		15	1	163	1
25	268		728	23,882	1,773	463		24	579	166	1
26	298	16,028	585	29,062	1,370	355		21	1	492	176
27	93	16,351	505	29,137	1,350	405	1,187	12	1	502	111
28	205	15,520	491	28,952	1,402	416	2,735	21	579	471	113
29	572	15,339	560	28,718	1,294	394	2,063	23	1	479	106
30	733	14,398	572	29,325	1,601	374	1,633	11	579	706	59
31	739	2,092	682	24,496	2,238	393	1,680	9	1	2,285	1
Total	12,559	303,124	19,515	768,369	53,498	13,274	33,520	530	9,944	14,105	2,514

SCHEDULE 2

SCHEDULE 2									
					Patchen				
July	Hyatt	Lexington	Little Joe's	Village	Patchen	Parkhills			Wendy's
1999	Regency	Country Club	Mobile Hms	Car Wash	Wilkes Farm	Apts LTD			Hamburgers
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.			Cu. Ft.
1	7,241	553	8,737	160	775	619			116
2	10,056	1,779	8,174	155	1,157	724			148
3	12,549	525	8,490	165	1,263	610			119
4	14,077	7,275	8,934	145	1,759	664			129
5	11,549	14,848	9,272	139	1,181	684			109
6	7,760	25,576	9,092	123	1,209	690			141
7		17,574	9,705	137	684	702			155
8		18,246	8,076	118	1,031	679			149
9		18,998	7,928	163	1,353	666			140
10		8,404	8,548	189	528	648			116
11		7,023	8,640	179	432	770			103
12		15,497	8,695	121	486	655			148
13		16,198	8,252	116	1,454	601			149
14		15,258	8,388	123	1,566	650			176
15		13,939	8,907	122	534	634			159
16		13,974	8,035	159	618	754			155
17		14,232	8,418	174	960	733			136
18		16,167	8,920	188	481	737			129
19		18,517	8,272	139	1,488	671			121
20		8,558	8,213	338	709	705			163
21		757	8,767	212	487	731			152
22		360	8,684	125	652	715			169
23		1,472	8,320	138	643	701			132
24		6,301	8,661	201	842	851			205
25		14,065	9,533	181	694	765			111
26		20,270	8,655	145	1,212	774			113
27		10,312	9,318	126	652	971			137
28		15,463	8,221	122	1,205	937			133
29		15,653	8,531	139	642	1,101			146
30		16,435	7,788	142	1,670	983			123
31		15,637	8,277	170	876	1,062			156
Total	63,232	369,866	266,451	4,854	29,243	23,187			4,338

SCHEDULE 2

					Tot. Average	
					Usage for	
				Number of	Customers	Max Day
July	Total	Total	Customers	Monitored	Usage	Usage
1999	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
1	58,731	440,483	18	454,376	0.97	
2	63,843	478,823	18	454,376	1.05	
3	50,217	376,628	17	357,183	1.05	
4	59,068	443,010	17	357,183	1.24	
5	65,594	491,955	17	357,183	1.38	
6	88,899	666,743	18	454,376	1.47	
7	72,002	540,015	17	395,276	1.37	
8	75,850	568,875	17	395,276	1.44	
9	78,387	587,903	17	395,276	1.49	
10	45,238	339,285	14	286,105	1.19	
11	41,095	308,213	14	286,105	1.08	
12	71,895	539,213	16	383,411	1.41	
13	74,595	559,463	17	395,276	1.42	
14	75,188	563,910	16	383,411	1.47	
15	73,310	549,825	16	383,411	1.43	
16	73,124	548,430	17	395,276	1.39	
17	56,603	424,523	16	383,411	1.11	
18	54,641	409,808	16	298,083	1.37	
19	83,355	625,163	17	395,276	1.58	
20	70,953	532,148	17	395,276	1.35	
21	63,545	476,588	17	395,276	1.21	
22	41,279	309,593	17	395,276	0.78	
23	34,765	260,738	17	395,276	0.66	
24	25,313	189,848	15	286,218	0.66	
25	53,233	399,248	15	286,218	1.39	
26	79,557	596,678	16	383,411	1.56	
27	71,170	533,775	17	395,276	1.35	
28	76,986	577,395	17	395,276	1.46	
29	75,761	568,208	17	395,276	1.44	
30	77,132	578,490	17	395,276	1.46	
31	60,794	455,955	17	395,276	1.15	
Total	1,992,123	14,940,923				

KAWC -- CUSTOMER DEMAND STUDY

SCHEDULE 2

COMMERCIAL USER CLASS - COMPOSITE MAX DAY

	Aramark	Central	Hartland								
August	Jeff Adams	Uniform	Bob Evans	Baptist	Dismas	Emerson	First Baptist	Home	Hoagland	Holiday	
1999	Car Wash	Service	Restaurant	Hospital	Days Inn	Charities Inc	Center	Church	Owners	Comm. Rtl	Cleaners
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.
1	159		689	21,486	1,468	460	1,526	22		156	1
2	412	15,014	503	13,107	1,170	392	1,558	18		495	153
3	494	15,422	469	25,909	1,105	425	1,569	25		485	129
4	319	17,012	460	30,185	1,021	361	1,592	24		497	115
5	496	17,261	468	28,541	1,263	364		19		489	135
6	613	13,939	637	28,740	1,316	352		19		441	56
7	677	94	749	24,326	1,440	443		12		173	3
8	0		727	22,385	1,539	353		26		181	1
9	212	6,526	500	27,417	1,172	414		17		497	142
10	315	9,041	494	26,106	1,416	402		12		519	161
11	384	15,352	447	29,050	1,225	372		18		467	186
12	306	15,453	450	29,507	1,688	385		15		459	98
13	342	15,167	583	30,065	1,248	437		11		546	60
14	290	94	787	21,821	1,024	413		10		182	1
15	0		689	19,333	1,750	357		25		177	1
16	686	16,340	542	25,328	1,271	347		12		489	166
17	563	14,531	474	28,000	1,432	364		11		486	112
18	443	15,294	532	29,177	989	378		21		499	122
19	263	15,920	537	28,913	1,620	373		13		471	107
20	532	13,212	577	27,208	1,196	370		12		468	134
21	837		594	21,321	1,162	483		10		182	1
22	1		654	21,567	1,145	514		18		165	1
23	417	15,831	445	30,001	910	368		10		474	237
24	102	15,905	385	28,657	1,190	349		12		482	168
25	82	15,116	373	27,188	1,224	352		15		474	230
26	328	15,959	420	24,500	1,074	366		10		502	111
27	544	13,872	521	26,759	1,329	382		18		455	92
28	595	1,760	535	19,543	1,592	437		17		221	1
29	0		567	19,792	1,518	421		24		167	0
30	503	16,195	505	23,862	1,585	329		15		466	149
31	597	17,341	326	25,158	1,495	384		13		460	129
Total	11,512	327,651	16,639	784,952	40,577	12,147	6,245	504		12,225	3,002

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SCHEDULE 2

Patchen									
August	Hyatt	Lexington	Little Joe's	Village	Patchen	Parkhills	Wendy's		
1999	Regency	Country Club	Mobile Hms	Car Wash	Wilkes Farm	Apts LTD	Hamburgers		
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.		
1		9,150	8,496	171	438	1,111			192
2		7,045	9,120	125	679	913			130
3		18,208	7,684	117	1,387	888			200
4		15,034	7,897	114	1,787	967			126
5		14,847	8,136	116	1,644	811			265
6		16,105	7,288	159	707	597			118
7		15,112	8,009	186	789	563			197
8		8,704	8,517	181	420	650			116
9		6,065	8,069	124	442	563			119
10		13,392	7,468	123	1,130	680			194
11		15,787	7,855	111	588	577			130
12		13,517	7,074	112	832	584			151
13		14,576	7,141	145	1,315	540			144
14		14,184	7,745	196	486	561			117
15		13,103	8,169	171	510	665			106
16		12,652	8,109	135	905	490			118
17	6,423	17,179	7,062	118	592	527			118
18	5,611	16,066	7,375	132	942	529			126
19	6,461	15,011	7,404	133	3,317	498			132
20	5,850	14,237	7,703	144	443	503			150
21	6,119	13,652	8,088	148	1,443	594			122
22	8,451	13,611	9,896	163	407	632			112
23		13,942	8,232	111	521	582			113
24		7,302	7,221	96	551	553			123
25		167	7,976	93	400	511			126
26		15	7,683	104	401	600			144
27		219	7,542	130	535	553			148
28		304	7,832	133	408	578			121
29		6,460	7,943	141	396	538			107
30		13,888	7,350	126	425	524			126
31		13,903	7,300	81	520	533			111
Total	38,915	353,437	243,384	4,139	25,360	19,415			4,302

SCHEDULE 2

SCHEDULE 2						
					Tot. Average	
					Usage for	
				Number of	Customers	Max Day
August		Total	Total	Customers	Monitored	Usage
1999		Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios
1		45,525	341,438	15	296,853	1.15
2		50,834	381,255	16	394,046	0.97
3		74,516	558,870	16	394,046	1.42
4		77,511	581,333	16	394,046	1.48
5		74,855	561,413	15	382,181	1.47
6		71,087	533,153	15	382,181	1.40
7		52,773	395,798	15	382,181	1.04
8		43,800	328,500	14	284,988	1.15
9		52,279	392,093	15	382,181	1.03
10		61,453	460,898	15	382,181	1.21
11		72,549	544,118	15	382,181	1.42
12		70,631	529,733	15	382,181	1.39
13		72,320	542,400	15	382,181	1.42
14		47,911	359,333	15	382,181	0.94
15		45,056	337,920	14	284,988	1.19
16		67,590	506,925	15	382,181	1.33
17		77,992	584,940	16	441,281	1.33
18		78,236	586,770	16	441,281	1.33
19		81,173	608,798	16	441,281	1.38
20		72,739	545,543	16	441,281	1.24
21		54,756	410,670	15	344,088	1.19
22		57,337	430,028	15	344,088	1.25
23		72,194	541,455	15	382,181	1.42
24		63,096	473,220	15	382,181	1.24
25		54,327	407,453	15	382,181	1.07
26		52,217	391,628	15	382,181	1.02
27		53,099	398,243	15	382,181	1.04
28		34,077	255,578	15	382,181	0.67
29		38,074	285,555	14	284,988	1.00
30		66,048	495,360	15	382,181	1.30
31		68,351	512,633	15	382,181	1.34
Total		1,904,406	14,283,045			

KAWC -- CUSTOMER DEMAND STUDY											
SCHEDULE 2											
COMMERCIAL USER CLASS - COMPOSITE MAX DAY											
		Aramark		Central					Hartland		
September	Jeff Adams	Uniform	Bob Evans	Baptist		Dismas	Emerson	First Baptist	Home	Hoagland	Holiday
1999	Car Wash	Service	Restaurant	Hospital	Days Inn	Charities Inc	Center	Church	Owners	Comm. Rtl	Cleaners
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.		Cu. Ft.		Cu. Ft.	Cu. Ft.
1	661	17,292	369	28,483	822	382		16		467	204
2	688	18,386	405	26,361	829	375		18		471	183
3	843	17,517	510	31,183	1,045	368		10		435	60
4	696	4,992	599	22,614	1,719	357		9		173	13
5	0	5,097	550	25,088	921	379		17		152	5
6	468	5,333	692	22,165	1,247	408		10		157	5
7	520	19,069	405	25,737	1,134	427		10		476	107
8	478	17,965	398	28,818	987	320		13		451	130
9	552	19,106	433	25,570	946	374		11		491	106
10	989	17,986	498	27,496	971	346		17		475	126
11	708	2,034	599	18,017	1,321	400		7		183	1
12	0	39	588	21,182	936	368		19		152	1
13	28	16,117	507	23,595	819	339		10		497	164
14	552	16,176	365	23,460	1,094	351		8		490	135
15	555	15,576	424	25,161	1,005	369		13		530	108
16	718	16,095	468	20,902	817	427		9		486	102
17	833	15,195	537	22,246	584	421		8		473	100
18	971	94	649	16,120	745	402		6		180	1
19	0	30	593	16,897	895	436		11		166	0
20	62	13,111	557	15,853	1,460	415		7		478	181
21	112	16,455	454		631	394		7		488	173
22	496	16,546			695	353		12		481	119
23	579	16,779			686	348		7		494	158
24	1,083	13,546			1,453	316		9		484	125
25	950	20			1,055	377		6		193	35
26	0	24			1,270	430		13		159	1
27	0	14,606			1,645	320		12		467	146
28	0	16,299			874	371		7		490	113
29	0	17,495			857	369		17		503	149
30	0	17,233			1,648	360		10		597	131
Total	13,542	366,213	10,600	466,948	31,111	11,302		329		11,739	2,882

SCHEDULE 2									
Patchen									
September	Hyatt	Lexington	Little Joe's	Village	Patchen	Parkhills	Wendy's		
1999	Regency	Country Club	Mobile Hms	Car Wash	Wilkes Farm	Apts LTD	Hamburgers		
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.		
1		14,086	7,118	92	722	514	152		
2		14,423	7,337	101	1,197	494	129		
3		15,482	6,882	127	571	577	136		
4		14,034	7,820	149	555	740	149		
5		15,250	7,949	137	417	596	111		
6		13,649	8,990	172	389	580	116		
7		15,302	7,339	101	744	590	139		
8		14,325	6,897	99	882	567	132		
9		16,129	7,320	108	1,114	551	135		
10		15,705	7,310	124	1,097	534	134		
11		15,508	7,819	149	560	641	106		
12		14,551	8,762	146	659	699	119		
13		8,191	7,727	126	469	486	123		
14		1,443	7,728	91	494	579	136		
15		10,041	7,663	105	794	546	125		
16		17,276	7,495	116	539	607	137		
17		15,226	7,412	134	451	569	135		
18		17,408	7,414	161	712	628	128		
19		14,061	7,597	148	1,417	609	105		
20		13,403	7,358	138	1,126	478	118		
21		10,281	7,494	113	854	509	130		
22		4,340	7,489		538	580	135		
23		3,032	7,450		609	555	145		
24	7,239	9,186	6,940		636	498	150		
25	8,679	10,241	7,667		564	650	109		
26	8,177	379	7,983		522	553	83		
27	5,908	2,636	3,712		429	544	131		
28	8,320	0	2,092		398	641	139		
29	9,085	3,373	7,096		356	554	121		
30	7,282	1,343	7,327		385	630	144		
Total	54,690	320,304	217,187	2,637	20,200	17,299	3,852		

SCHEDULE 2

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SCHEDULE 2						
					Tot. Average	
					Usage for	
				Number of	Customers	Max Day
September	Total	Total	Customers	Monitored	Usage	
1999	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
1	71,380	535,350	15	382,181	1.40	
2	71,397	535,478	15	382,181	1.40	
3	75,746	568,095	15	382,181	1.49	
4	54,619	409,643	15	382,181	1.07	
5	56,669	425,018	15	382,181	1.11	
6	54,381	407,858	15	382,181	1.07	
7	72,100	540,750	15	382,181	1.41	
8	72,462	543,465	15	382,181	1.42	
9	72,946	547,095	15	382,181	1.43	
10	73,808	553,560	15	382,181	1.45	
11	48,053	360,398	15	382,181	0.94	
12	48,221	361,658	15	382,181	0.95	
13	59,198	443,985	15	382,181	1.16	
14	53,102	398,265	15	382,181	1.04	
15	63,015	472,613	15	382,181	1.24	
16	66,194	496,455	15	382,181	1.30	
17	64,324	482,430	15	382,181	1.26	
18	45,619	342,143	15	382,181	0.90	
19	42,965	322,238	15	382,181	0.84	
20	54,745	410,588	15	382,181	1.07	
21	38,095	285,713	14	234,221	1.22	
22	31,784	238,380	12	228,618	1.04	
23	30,842	231,315	12	228,618	1.01	
24	41,665	312,488	13	287,718	1.09	
25	30,546	229,095	13	287,718	0.80	
26	19,594	146,955	13	287,718	0.51	
27	30,556	229,170	13	287,718	0.80	
28	29,744	223,080	13	287,718	0.78	
29	39,975	299,813	13	287,718	1.04	
30	37,090	278,175	13	287,718	0.97	
Total	1,550,835	11,631,263				

**KAWC -- CUSTOMER DEMAND STUDY
SCHEDULE 3
OPA USER CLASS - COMPOSITE MAX DAY**

											89000993
June 1999	Ag. Science Dept. , UK	Federal Medical Center	Shephards House Inc.	UK Chem/ Physic Bldg.	UK Cooling Plant	UK Dormitory Tower	UK Heating Plant	UK Horticulture	UK Hospital	VA Hospital Fed. Govt.	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	
1	641	46,388		6,301	20,634						
2	606	47,101		6,656	18,964						
3	601	46,093		6,261	12,832						
4	559	46,720	99	6,206	11,107						
5	547	46,614	319	5,158	12,762						
6	616	46,137	132	4,902	18,223						
7	687	48,129	110	6,662	32,241						
8	817	56,044	477	8,231	35,550						
9	695	49,455	362	6,830	33,814						
10	578	47,894	285	7,070	32,667						
11	628	48,028	321	6,671	31,113						
12	471	51,301	518	4,796	22,242						
13	532	49,426	820	4,607	19,091						
14	550	63,643	392	6,432	20,820						
15	468	47,678	98	7,579	7,780						
16	469	48,205	80	6,913	5,074						
17	503	55,976	108	6,541	10,685				41,152		
18	446	47,221	100	5,818	8,557				38,020		
19	403	46,413	66	4,628	11,664				34,458		
20	434	45,899	108	4,643	13,905				36,730		
21	591	47,554	59	2,764	19,888				44,292		
22	804	58,442	95	5,914	25,836				48,079		
23	629	49,741	97	6,532	31,136				51,735		
24	495	46,232	84	7,007	24,934			3,244	48,439		
25	600	57,144	79	3,880	26,889			8,799	48,745		
26	1,152	47,596	90	2,796	29,010			3,398	41,821		
27	942	48,847	94	4,216	32,534			4,362	34,322		
28	544	60,794	66	4,588	29,674			3,551	45,270		
29	551	45,667	92	7,956	26,691			4,061	46,119		
30	625	44,873	92	7,631	13,649			5,137	44,220		
Total	18,184	1,491,255		5,243	176,189	639,966		32,552	603,402		

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SCHEDULE 3						
						Tot. Average
						Usage for
				Number of	Customers	Max Day
June	US Postal	Total	Total	Customers	Monitored	Usage
1999	Service	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios
	Cu. Ft.					
1	22	73,986	554,895	5	484,531	1.15
2	29	73,356	550,170	5	484,531	1.14
3	30	65,817	493,628	5	484,531	1.02
4	29	64,720	485,400	6	485,626	1.00
5	22	65,422	490,665	6	485,626	1.01
6	14	70,024	525,180	6	485,626	1.08
7	79	87,908	659,310	6	485,626	1.36
8	21	101,140	758,550	6	485,626	1.56
9		91,156	683,670	5	485,011	1.41
10		88,494	663,705	5	485,011	1.37
11		86,761	650,708	5	485,011	1.34
12		79,328	594,960	5	485,011	1.23
13		74,476	558,570	5	485,011	1.15
14		91,837	688,778	5	485,011	1.42
15		63,603	477,023	5	485,011	0.98
16		60,741	455,558	5	485,011	0.94
17		114,965	862,238	6	739,914	1.17
18		100,162	751,215	6	739,914	1.02
19		97,632	732,240	6	739,914	0.99
20		101,719	762,893	6	739,914	1.03
21		115,148	863,610	6	739,914	1.17
22		139,170	1,043,775	6	739,914	1.41
23		139,870	1,049,025	6	739,914	1.42
24		130,435	978,263	7	790,089	1.24
25		146,136	1,096,020	7	790,089	1.39
26		125,863	943,973	7	790,089	1.19
27		125,317	939,878	7	790,089	1.19
28		144,487	1,083,653	7	790,089	1.37
29		131,137	983,528	7	790,089	1.24
30		116,227	871,703	7	790,089	1.10
Total	246	2,967,037	22,252,778			

KAWC -- CUSTOMER DEMAND STUDY
SCHEDULE 3
OPA USER CLASS - COMPOSITE MAX DAY

		Federal								89000993		
July	Ag. Science	Medical	Shephards	UK Chem/	UK Cooling	UK Dormitory	UK Heating	UK	UK	VA Hospital		
1999	Dept. , UK	Center	House Inc.	Physic Bldg.	Plant	Tower	Plant	Horticulture	Hospital	Fed. Govt.		
	Cu. Ft.	Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.	Cu. Ft.		
1	487	56,902	123		29,157			4,983	46,187			
2	536	46,504	137		38,156			3,464	44,681			
3	509	45,442	112		40,435	4,944		4,786	38,759	21,346		
4	541	52,689	98		43,150	5,286		3,505	38,398	21,475		
5	675	48,334	117		42,923	6,131		10,986	40,987	23,144		
6	561	58,154	123		44,559	9,481		8,987	47,351	26,733		
7	560	49,941	95		32,905	9,928		5,915	47,441	26,414		
8	625	51,053	108		17,113	10,197		13,413	52,644	23,677		
9	547	57,004	96		33,521			20,776	50,376	26,304		
10	449	49,089	118		27,956			10,209	43,308	21,224		
11	355	50,887	138		7,357			7,707	37,172	17,036		
12	554	48,598	97		12,277			11,963	44,017	21,989		
13	602	53,596	99		14,333			19,214	48,744	22,475		
14	827	46,743	78		21,360			14,803	53,850	23,104		
15	566	55,778	108		29,022			7,757	52,214	25,756		
16	629	53,583	71		35,116			36,004	50,345	25,241		
17	593	50,348	212		28,343			13,181	45,048	22,496		
18	570	47,566	159		28,420			6,407	43,138	22,782		
19	667	58,502	100		38,769			36,740	49,585	28,528		
20	810	50,047	119		42,566			23,308	49,403	27,990		
21	618	56,525	117		43,580			7,112	50,515	26,967		
22	527	55,367	107		42,267			5,853	50,910	28,094		
23	744	64,289	112		45,404			10,913	54,451	31,991		
24	623	46,504	99		49,096			7,168	49,178	28,619		
25	848	46,847	133		40,840			7,892	48,168	24,498		
26	660	63,229	107		38,831			11,737	56,004	28,254		
27	676	57,480	120		39,837			9,710	55,813	27,151		
28	570	52,123	140		43,087			21,501	54,754	27,967		
29	567	50,674	118		42,793			18,906	52,992	28,482		
30	703	51,672	97		44,082			18,089	56,634	30,396		
31	656	58,294	121		48,111			20,530	49,785	25,113		
Total	18,855	1,633,764	3,579		1,085,366	45,967		403,519	1,502,852	735,246		

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SCHEDULE 3						
						Tot. Average
						Usage for
						Number of
						Customers
						Max Day
July	US Postal	Total	Total	Customers	Monitored	Usage
1999	Service	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios
1		137,839	1,033,793	6	742,404	1.39
2		133,478	1,001,085	6	742,404	1.35
3		156,333	1,172,498	8	941,215	1.25
4		165,142	1,238,565	8	941,215	1.32
5		173,297	1,299,728	8	941,215	1.38
6		195,949	1,469,618	8	941,215	1.56
7		173,199	1,298,993	8	941,215	1.38
8		168,830	1,266,225	8	941,215	1.35
9		188,624	1,414,680	7	874,127	1.62
10		152,353	1,142,648	7	874,127	1.31
11		120,652	904,890	7	874,127	1.04
12		139,495	1,046,213	7	874,127	1.20
13		159,063	1,192,973	7	874,127	1.36
14		160,765	1,205,738	7	874,127	1.38
15		171,201	1,284,008	7	874,127	1.47
16		200,989	1,507,418	7	874,127	1.72
17		160,221	1,201,658	7	874,127	1.37
18		149,042	1,117,815	7	874,127	1.28
19		212,891	1,596,683	7	874,127	1.83
20		194,243	1,456,823	7	874,127	1.67
21		185,434	1,390,755	7	874,127	1.59
22		183,125	1,373,438	7	874,127	1.57
23		207,904	1,559,280	7	874,127	1.78
24		181,287	1,359,653	7	874,127	1.56
25		169,226	1,269,195	7	874,127	1.45
26		198,822	1,491,165	7	874,127	1.71
27		190,787	1,430,903	7	874,127	1.64
28		200,142	1,501,065	7	874,127	1.72
29		194,532	1,458,990	7	874,127	1.67
30		201,673	1,512,548	7	874,127	1.73
31		202,610	1,519,575	7	874,127	1.74
Total		5,429,148	40,718,610			

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KAWC -- CUSTOMER DEMAND STUDY
SCHEDULE 3
OPA USER CLASS - COMPOSITE MAX DAY

89000993											
August	Ag. Science	Federal Medical	Shephards	UK Chem/ UK Cooling	UK Cooling	UK Dormitory	UK Heating	UK	UK	VA Hospital	
1999	Dept. , UK	Center	House Inc.	Physic Bldg.	Plant	Tower	Plant	Horticulture	Hospital	Fed. Govt.	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
1	482	51,960	102	5,240	40,213	7,593		8,972	45,243	23,262	
2	595	47,218	124	6,974	26,608	5,851		12,580	49,788	26,205	
3	629	57,025	114	7,464	22,078	5,294		11,801	46,358	22,241	
4	516	53,626	168	8,270	30,574	6,144		12,098	47,313	23,098	
5	476	55,262	92	7,612	28,588	3,871		11,900	44,518	22,082	
6	593	50,260	123	6,425	27,396	2,551		18,524	46,941	21,882	
7	581	47,905	115	3,308	27,189	956		7,115	43,927	19,341	
8	500	58,452		2,806	29,562	1,276		8,366	43,548	20,109	
9	634	58,304		6,073	29,651	1,842		11,832	46,059	22,885	
10	677	45,324		5,563	32,182	2,258		16,522	47,982	21,925	
11	766	53,544		6,986	31,902	1,866		30,071	52,893	25,432	
12	746	49,448		5,546	26,345	2,487		29,509	57,075	25,138	
13	894	59,976		6,978	38,136	2,328		11,421	63,838	26,220	
14	484	49,664		6,191	8,895	4,939		10,308	55,573	18,208	
15	502	56,895		5,521	7,937	5,930		8,019	47,538	15,678	
16	710	46,361		5,913	17,082	6,212		10,613	59,135	21,945	
17	577	50,731		5,729	28,244	6,060		17,262	63,551	22,724	
18	529	52,214	153	5,763	26,752	5,938		17,289	58,564	23,309	
19	519	61,462	348	6,252	25,838	5,510		14,237	52,482	21,669	
20	451	46,119	321	5,912	19,500	7,435		6,143	46,918	22,072	
21	382	52,481	223	3,469	9,310	9,855		25,284	41,986	17,135	
22	405	50,649	201	1,279	10,153	11,114		5,298	42,341	17,233	
23	549	60,308	95	1,030	26,070	14,474		5,673	47,641	22,585	
24	425	46,512	101	4,520	31,677	16,115		17,317	46,057	22,380	
25	548	53,085	121	5,239	21,575	16,705		4,987	47,939	22,658	
26	540	58,611	87	2,053	20,885	17,574		12,585	48,496	22,273	
27	614	49,084	91	5,096	24,139	21,940		9,266	48,599	23,088	
28	548	57,802	94	4,726	22,068	14,197		16,400	42,459	20,643	
29	556	48,080	106	3,177	22,602	12,992		4,902	43,139	20,631	
30		45,892	70	484	8,303	16,205		7,405	46,890	20,907	
31	514	54,280	118	499	12,303	16,553		15,710	46,882	20,311	
Total	16,942	1,628,534	2,967	152,098	733,757	254,065		399,409	1,521,673	675,269	

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						Page 6 / 8
SCHEDULE 3						
						Tot. Average
						Usage for
				Number of	Customers	Max Day
August	US Postal	Total	Total	Customers	Monitored	Usage
1999	Service	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios
		Cu. Ft.				
1		183,067	1,373,003	9	988,900	1.39
2		175,943	1,319,573	9	988,900	1.33
3		173,004	1,297,530	9	988,900	1.31
4		181,807	1,363,553	9	988,900	1.38
5		174,401	1,308,008	9	988,900	1.32
6		174,695	1,310,213	9	988,900	1.32
7		150,437	1,128,278	9	988,900	1.14
8		164,619	1,234,643	8	987,805	1.25
9		177,280	1,329,600	8	987,805	1.35
10		172,433	1,293,248	8	987,805	1.31
11		203,460	1,525,950	8	987,805	1.54
12		196,294	1,472,205	8	987,805	1.49
13		209,791	1,573,433	8	987,805	1.59
14		154,262	1,156,965	8	987,805	1.17
15		148,020	1,110,150	8	987,805	1.12
16		167,971	1,259,783	8	987,805	1.28
17		194,878	1,461,585	8	987,805	1.48
18		190,511	1,428,833	9	988,900	1.44
19	88	188,405	1,413,038	10	989,515	1.43
20	207	155,078	1,163,085	10	989,515	1.18
21	113	160,238	1,201,785	10	989,515	1.21
22	65	138,738	1,040,535	10	989,515	1.05
23	418	178,843	1,341,323	10	989,515	1.36
24	222	185,326	1,389,945	10	989,515	1.40
25	18	172,875	1,296,563	10	989,515	1.31
26	26	183,130	1,373,475	10	989,515	1.39
27	27	181,944	1,364,580	10	989,515	1.38
28	17	178,954	1,342,155	10	989,515	1.36
29	8	156,193	1,171,448	10	989,515	1.18
30	18	146,174	1,096,305	9	985,637	1.11
31	18	167,188	1,253,910	10	989,515	1.27
Total	1,245	5,385,959	40,394,693			

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KAWC -- CUSTOMER DEMAND STUDY											
SCHEDULE 3											
OPA USER CLASS - COMPOSITE MAX DAY											
										89000993	
September	Ag. Science	Federal Medical	Shephards	UK Chem/ UK Cooling	UK Cooling	UK Dormitory	UK Heating	UK	UK	VA Hospital	
1999	Dept. , UK	Center	House Inc.	Physic Bldg.	Plant	Tower	Plant	Horticulture	Hospital	Fed. Govt.	
	Cu. Ft.	Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.	Cu. Ft.	
1	574	49,075	338		16,542	16,380		8,309	46,501	22,305	
2	594	53,073	104		19,463	16,545		24,356	49,685	21,089	
3	630	52,861	137		36,665	16,017		8,340	48,096	23,050	
4	590	46,743	197		30,351	16,611		13,102	41,486	20,634	
5	549	51,389	330		34,040	14,084		9,248	40,067	18,858	
6	750	54,746	132		43,520	16,303		11,341	41,898	21,196	
7	504	48,739	103		23,674	19,617		20,262	46,546	24,026	
8	582	52,053	162		25,389	15,201		8,414	48,264	21,370	
9	457	51,579	98		30,312	15,834		16,377	46,475	21,692	
10	466	52,619	103		16,336	15,415		9,483	42,834	20,028	
11	458	50,756	161		15,803	11,733		13,941	37,847	16,482	
12	490	44,982	235		21,135	12,054		8,893	38,339	17,666	
13	557	56,673	115		30,130	15,508		8,676	44,401	21,320	
14	770	48,857	127		14,856	19,086		15,123	42,680	18,921	
15	773	45,682	221		12,951	16,429		10,298	44,145	19,934	
16	500	57,793	297		8,883	15,909		13,145	13,046	19,459	
17	567	46,135	262		7,067	14,221		10,282		19,730	
18	568	48,059	121		8,905	9,653		17,350		14,966	
19	366	43,634	206		11,486	12,179		7,114		16,248	
20	585	48,182	149		19,518	15,215		6,932		20,543	
21	409	54,383	112		4,177	15,023		9,977		17,504	
22	518	47,470	135		3,210	14,885		8,827		16,911	
23	476	46,191	114		7,834	14,974		9,900		17,298	
24	512	52,581	120		11,977	13,699		6,677		18,698	
25	338	47,705	149		14,165	9,866		12,536		15,750	
26	350	45,097	156		13,859	11,455		6,003		15,744	
27	513	55,758	116		25,596	15,455		8,087		21,547	
28	830	46,071	119		30,458	15,370		8,419		22,784	
29	547	54,161	123		18,506	15,671		6,667		20,311	
30	436	44,784	101		2,711	14,033		5,142		16,187	
Total	16,259	1,497,831	4,843		559,519	444,425		323,221	672,310	582,251	

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SCHEDULE 3							
							Tot. Average
							Usage for
				Number of	Customers		Max Day
September	US Postal	Total	Total	Customers	Monitored		Usage
1999	Service	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day		Ratios
	Cu. Ft.						
1	20	160,044	1,200,330	9	941,830		1.27
2	28	184,937	1,387,028	9	941,830		1.47
3	19	185,815	1,393,613	9	941,830		1.48
4	14	169,728	1,272,960	9	941,830		1.35
5	8	168,573	1,264,298	9	941,830		1.34
6	6	189,892	1,424,190	9	941,830		1.51
7	34	183,505	1,376,288	9	941,830		1.46
8	16	171,451	1,285,883	9	941,830		1.37
9	160	182,984	1,372,380	9	941,830		1.46
10	172	157,456	1,180,920	9	941,830		1.25
11	13	147,194	1,103,955	9	941,830		1.17
12	5	143,799	1,078,493	9	941,830		1.15
13	166	177,546	1,331,595	9	941,830		1.41
14	136	160,556	1,204,170	9	941,830		1.28
15	55	150,488	1,128,660	9	941,830		1.20
16	23	129,055	967,913	9	941,830		1.03
17	37	98,301	737,258	8	686,927		1.07
18	12	99,634	747,255	8	686,927		1.09
19	11	91,244	684,330	8	686,927		1.00
20	41	111,165	833,738	8	686,927		1.21
21	35	101,620	762,150	8	686,927		1.11
22	25	91,981	689,858	8	686,927		1.00
23	218	97,005	727,538	8	686,927		1.06
24	140	104,404	783,030	8	686,927		1.14
25	13	100,522	753,915	8	686,927		1.10
26	7	92,671	695,033	8	686,927		1.01
27	207	127,279	954,593	8	686,927		1.39
28	181	124,232	931,740	8	686,927		1.36
29	96	116,082	870,615	8	686,927		1.27
30	22	83,416	625,620	8	686,927		0.91
Total	1,920	4,102,579	30,769,343				

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KAWC – CUSTOMER DEMAND STUDY												
SCHEDULE 4												
INDUSTRIAL USER CLASS - COMPOSITE MAX DAY												
										Tot. Average		
										Usage for		
										Number of	Customers	Max Day
June	Crest	General	Pepsi	Proctor &	The		Total	Total	Customers	Monitored	Usage	
1999	Products Inc	Electric	Cola	Gamble	Trane Co.	Toyota	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.						
1	1,148	45,430	15,043			261,847	323,468	2,426,010	4	1,976,986	1.23	
2	1,355	44,410	13,632			324,144	383,541	2,876,558	4	1,976,986	1.46	
3	2,242	38,520	11,041			311,763	363,566	2,726,745	4	1,976,986	1.38	
4	2,008	37,895	11,179			313,558	364,640	2,734,800	4	1,976,986	1.38	
5	203	44,071	1,228		27,201	169,738	242,441	1,818,308	5	2,130,346	0.85	
6	162	40,385	5		25,644	169,577	235,773	1,768,298	5	2,130,346	0.83	
7	2,816	48,383	14,400		29,505	277,374	372,478	2,793,585	5	2,130,346	1.31	
8	3,188	48,465	13,681	5,236	32,782	326,282	429,634	3,222,255	6	2,162,679	1.49	
9	2,165	51,310	14,130	6,131	31,817	363,806	469,359	3,520,193	6	2,162,679	1.63	
10	1,225	44,657	14,068	5,907	31,286	336,540	433,683	3,252,623	6	2,162,679	1.50	
11	2,769	50,468	13,555	5,997	30,708	365,846	469,343	3,520,073	6	2,162,679	1.63	
12	60	40,578	597	4,454	26,556	163,300	235,545	1,766,588	6	2,162,679	0.82	
13	24	32,928	91	4,732	21,249	99,128	158,152	1,186,140	6	2,162,679	0.55	
14	1,468	43,691	15,514	5,369	27,456	270,661	364,159	2,731,193	6	2,162,679	1.26	
15	1,591	27,292	13,993	4,971	29,704	303,050	380,601	2,854,508	6	2,162,679	1.32	
16	4,049	31,642	12,468	4,966	28,612	263,730	345,467	2,591,003	6	2,162,679	1.20	
17	3,054	32,114	13,557	5,343	27,636	300,625	382,329	2,867,468	6	2,162,679	1.33	
18	2,233	30,845	14,857	5,068	26,878	278,645	358,526	2,688,945	6	2,162,679	1.24	
19	145	32,627	37	4,878	24,854	109,417	171,958	1,289,685	6	2,162,679	0.60	
20	147	32,119	20	5,384	26,448	123,770	187,888	1,409,160	6	2,162,679	0.65	
21	1,570	30,256	13,534	5,121	27,934	293,238	371,653	2,787,398	6	2,162,679	1.29	
22	2,271	36,773	13,787	6,743	29,759	369,199	458,532	3,438,990	6	2,162,679	1.59	
23	1,965	38,836	15,143	6,892	29,770	356,039	448,645	3,364,838	6	2,162,679	1.56	
24	1,571	36,023	10,864	5,783	30,182	313,176	397,599	2,981,993	6	2,162,679	1.38	
25	1,229	21,823	10,430	6,224	29,888	340,316	409,910	3,074,325	6	2,162,679	1.42	
26	73	12,366	44	6,526	29,470	165,355	213,834	1,603,755	6	2,162,679	0.74	
27	21	18,195	39	5,818	25,980	129,029	179,082	1,343,115	6	2,162,679	0.62	
28	1,356	23,698	12,453	4,291	29,358	288,556	359,712	2,697,840	6	2,162,679	1.25	
29	1,375	23,724	10,998	6,093	29,793	309,043	381,026	2,857,695	6	2,162,679	1.32	
30	1,292	18,884	17,064	6,303	30,442	314,561	388,546	2,914,095	6	2,162,679	1.35	
Total	44,775	1,058,408	297,452	128,230	740,912	8,011,313	10,281,090	77,108,175				

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 4												
INDUSTRIAL USER CLASS - COMPOSITE MAX DAY												
										Tot. Average		
										Usage for		
										Number of	Customers	Max Day
July	Crest	General	Pepsi	Proctor &	The		Total	Total	Customers	Customers	Max Day	
1999	Products Inc	Electric	Cola	Gamble	Trane Co.	Toyota	Cu. Ft. / Day	Gals. / Day	Monitored	Monitored	Usage	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.					Ratios	
1	1,283	22,312	18,507	6,397	30,574	323,963	403,036	3,022,770	6	2,162,679	1.40	
2	845	27,074	13,435	6,241	20,524	329,523	397,642	2,982,315	6	2,162,679	1.38	
3	72	35,148	3,521	3,440	13,646	182,734	238,561	1,789,208	6	2,162,679	0.83	
4	48	37,438	8	2,899	15,972	126,037	182,402	1,368,015	6	2,162,679	0.63	
5	155	31,649	7	4,486	15,580	122,836	174,713	1,310,348	6	2,162,679	0.61	
6	164	32,945	16,795	7,399	29,964	315,092	402,359	3,017,693	6	2,162,679	1.40	
7	466	42,246	16,580	7,455	31,445	383,859	482,051	3,615,383	6	2,162,679	1.67	
8	204	44,332	13,898	7,614	30,010	335,086	431,144	3,233,580	6	2,162,679	1.50	
9	220	50,793	13,340	7,483	28,688	350,184	450,708	3,380,310	6	2,162,679	1.56	
10	43	47,978	1,483	7,203	22,147	170,947	249,801	1,873,508	6	2,162,679	0.87	
11	44	39,349	10	7,010	16,035	76,114	138,562	1,039,215	6	2,162,679	0.48	
12	1,894	44,414	16,986	5,561	27,175	276,557	372,587	2,794,403	6	2,162,679	1.29	
13	2,995	40,336	13,724	5,719	29,656	291,051	383,481	2,876,108	6	2,162,679	1.33	
14	3,310	37,589	11,618	7,022	31,692	339,990	431,221	3,234,158	6	2,162,679	1.50	
15	2,337	39,076	13,424	7,858	31,228	360,287	454,210	3,406,575	6	2,162,679	1.58	
16	1,293	45,576	17,728	6,850	30,670	357,373	459,490	3,446,175	6	2,162,679	1.59	
17	183	39,742	671	6,976	29,673	127,021	204,266	1,531,995	6	2,162,679	0.71	
18	157	40,697	5	6,999	26,284	105,985	180,127	1,350,953	6	2,162,679	0.62	
19	1,510	44,459	11,883	6,086	31,263	123,254	218,455	1,638,413	6	2,162,679	0.76	
20	2,580	49,132	12,448	6,420	33,915	162,474	266,969	2,002,268	6	2,162,679	0.93	
21	3,686	38,407	12,457	6,747	32,397	166,869	260,563	1,954,223	6	2,162,679	0.90	
22	3,722	47,444	13,787	6,703	35,215	186,062	292,933	2,196,998	6	2,162,679	1.02	
23	3,334	47,369	13,454	6,728	33,880	141,795	246,560	1,849,200	6	2,162,679	0.86	
24	2,159	46,323	1,138	6,907	32,056	165,452	254,035	1,905,263	6	2,162,679	0.88	
25	2,097	35,090	35	7,063	29,472	165,871	239,628	1,797,210	6	2,162,679	0.83	
26	3,401	49,450	14,768	6,339	33,881	340,976	448,815	3,366,113	6	2,162,679	1.56	
27	3,477	44,916	12,906	6,947	37,318	359,357	464,921	3,486,908	6	2,162,679	1.61	
28	3,682	46,190	13,473	6,965	36,136	371,250	477,696	3,582,720	6	2,162,679	1.66	
29	3,518	49,060	17,332	7,330	34,383	350,130	461,753	3,463,148	6	2,162,679	1.60	
30	2,376	50,672	13,895	7,643	37,317	393,923	505,826	3,793,695	6	2,162,679	1.75	
31	161	53,047	252	7,699	30,457	235,275	326,891	2,451,683	6	2,162,679	1.13	
Total	51,416	1,300,253	309,568	204,189	898,653	7,737,327	10,501,406	78,760,545				

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 4												
INDUSTRIAL USER CLASS - COMPOSITE MAX DAY												
										Tot. Average		
										Usage for		
										Number of	Customers	Max Day
August	Crest	General	Pepsi	Proctor &	The		Total	Total	Customers	Monitored	Usage	
1999	Products Inc	Electric	Cola	Gamble	Trane Co.	Toyota	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.						
1	126	42,959	11	3,581	28,756	158,157	233,590	1,751,925	6	2,162,679	0.81	
2	1,466	40,321	12,635	3,592	34,646	303,206	395,866	2,968,995	6	2,162,679	1.37	
3	1,917	46,225	17,033	7,109	32,111	313,000	417,395	3,130,463	6	2,162,679	1.45	
4	2,374	46,855	13,794	7,238	34,588	332,900	437,749	3,283,118	6	2,162,679	1.52	
5	3,466	49,214	15,520	7,491	32,340	291,013	399,044	2,992,830	6	2,162,679	1.38	
6	1,924	45,645	13,518	7,524	30,737	350,362	449,710	3,372,825	6	2,162,679	1.56	
7	187	50,422	46	7,556	31,452	126,186	215,849	1,618,868	6	2,162,679	0.75	
8	50	45,105	44	6,605	27,676	93,474	172,954	1,297,155	6	2,162,679	0.60	
9	1,235	42,079	13,211	5,029	31,127	258,613	351,294	2,634,705	6	2,162,679	1.22	
10	2,244	43,721	16,584	6,788	37,097	325,690	432,124	3,240,930	6	2,162,679	1.50	
11	2,782	46,527	17,402	7,453	35,721	375,246	485,131	3,638,483	6	2,162,679	1.68	
12	1,564	47,494	11,871	7,395	34,573	323,026	425,923	3,194,423	6	2,162,679	1.48	
13	1,409	52,766	16,713	7,316	36,250	371,488	485,942	3,644,565	6	2,162,679	1.69	
14	52	33,461	33	5,621	24,830	141,111	205,108	1,538,310	6	2,162,679	0.71	
15	18	19,519	27	5,596	18,158	97,248	140,566	1,054,245	6	2,162,679	0.49	
16	1,719	31,984	11,511	4,584	26,815	295,036	371,649	2,787,368	6	2,162,679	1.29	
17	1,244	41,348	14,295	6,747	29,065	344,702	437,401	3,280,508	6	2,162,679	1.52	
18	823	40,990	16,151	6,556	25,130	310,047	399,697	2,997,728	6	2,162,679	1.39	
19	940	38,753	12,611	5,810	24,858	322,806	405,778	3,043,335	6	2,162,679	1.41	
20	1,276	37,850	13,569	5,978	20,551	249,018	328,242	2,461,815	6	2,162,679	1.14	
21	231	31,398	1,706	6,708	13,410	120,655	174,108	1,305,810	6	2,162,679	0.60	
22	195	28,448	11	4,886	7,617	58,882	100,039	750,293	6	2,162,679	0.35	
23	1,162	34,510	13,789	4,307	20,478	265,605	339,851	2,548,883	6	2,162,679	1.18	
24	970	31,684	15,002	6,243	20,232	305,981	380,112	2,850,840	6	2,162,679	1.32	
25	1,021	28,605	20,602	6,205	19,167	237,061	312,661	2,344,958	6	2,162,679	1.08	
26	1,039	30,967	15,978	6,973	19,857	241,079	315,893	2,369,198	6	2,162,679	1.10	
27	1,286	35,009	10,525	6,799	18,259	257,349	329,227	2,469,203	6	2,162,679	1.14	
28	332	27,953	93	6,591	11,914	148,035	194,918	1,461,885	6	2,162,679	0.68	
29	300	20,523	7	6,387	12,505	109,420	149,142	1,118,565	6	2,162,679	0.52	
30	1,168	25,849	12,014	4,800	16,063	236,395	296,289	2,222,168	6	2,162,679	1.03	
31	1,202	29,274	12,050	6,825	16,019	254,765	320,135	2,401,013	6	2,162,679	1.11	
Total	35,722	1,167,458	318,356	192,293	772,002	7,617,556	10,103,387	75,775,403				

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 4												
INDUSTRIAL USER CLASS - COMPOSITE MAX DAY												
										Tot. Average		
										Usage for		
										Number of	Customers	Max Day
September	Crest	General	Pepsi	Proctor &	The	Total		Total	Customers	Monitored	Usage	
1999	Products Inc	Electric	Cola	Gamble	Trane Co.	Toyota	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.						
1	1,123	28,731	8,919	7,039	20,931	285,590	352,333	2,642,498	6	2,162,679	1.22	
2	993	24,764	11,319	7,419	19,185	285,259	348,939	2,617,043	6	2,162,679	1.21	
3	1,259	28,670	11,745	7,591	20,295	308,141	377,701	2,832,758	6	2,162,679	1.31	
4	238	34,776	7	7,514	11,636	123,042	177,213	1,329,098	6	2,162,679	0.61	
5	184	24,857	5	6,736	9,746	85,936	127,464	955,980	6	2,162,679	0.44	
6	226	31,172	18	1,496	13,165	43,235	89,312	669,840	6	2,162,679	0.31	
7	1,166	26,744	11,088		20,617	234,867	294,482	2,208,615	5	2,130,146	1.04	
8	1,962	25,621	13,161	1,860	21,224	304,697	368,525	2,763,938	6	2,162,679	1.28	
9	2,822	21,185	11,064	4,057	18,743	299,800	357,671	2,682,533	6	2,162,679	1.24	
10	2,099	25,358	11,553	5,989	20,900	285,457	351,356	2,635,170	6	2,162,679	1.22	
11	92	21,016	14	6,326	15,057	134,358	176,863	1,326,473	6	2,162,679	0.61	
12	68	23,389	4	6,461	17,343	68,468	115,733	867,998	6	2,162,679	0.40	
13	942	21,454	11,513	5,348	18,516	220,917	278,690	2,090,175	6	2,162,679	0.97	
14	1,123	26,881	14,172	6,802	20,174	260,217	329,369	2,470,268	6	2,162,679	1.14	
15	1,021	25,768	12,004	7,234	15,733	270,877	332,637	2,494,778	6	2,162,679	1.15	
16	1,130	27,230	11,019	6,124	15,997	261,152	322,652	2,419,890	6	2,162,679	1.12	
17	1,072	26,821	10,901	6,657	17,501	251,136	314,088	2,355,660	6	2,162,679	1.09	
18	82	25,139	172	6,163	12,665	109,872	154,093	1,155,698	6	2,162,679	0.53	
19	65	17,384	6	6,234	8,690	90,579	122,958	922,185	6	2,162,679	0.43	
20	978	18,202	10,192	4,799	19,895	221,762	275,828	2,068,710	6	2,162,679	0.96	
21	1,157	25,772	10,781	6,008	11,717	254,207	309,642	2,322,315	6	2,162,679	1.07	
22	1,397	28,655	11,955	5,687	12,684	236,958	297,336	2,230,020	6	2,162,679	1.03	
23	804	26,871	10,235	5,729	14,459	255,222	313,320	2,349,900	6	2,162,679	1.09	
24	789	27,624	1,683	6,563	18,527	291,470	346,656	2,599,920	6	2,162,679	1.20	
25	60	22,449	390	6,311	17,012	127,606	173,828	1,303,710	6	2,162,679	0.60	
26	19	15,592	4	5,463	18,393	98,555	138,026	1,035,195	6	2,162,679	0.48	
27	1,258	25,853	6,989	4,942	16,521	230,547	286,110	2,145,825	6	2,162,679	0.99	
28	1,472	26,663	15,158	5,977	22,053	325,146	396,469	2,973,518	6	2,162,679	1.37	
29	1,721	27,378	12,849	5,880	16,609	274,724	339,161	2,543,708	6	2,162,679	1.18	
30	1,871	28,504	13,171	5,861	18,530	225,818	293,755	2,203,163	6	2,162,679	1.02	
Total	29,193	760,523	232,091	170,270	504,518	6,465,615	8,162,210	61,216,575				

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KAWC -- CUSTOMER DEMAND STUDY										
SCHEDULE 5										
OWU USER CLASS - COMPOSITE MAX DAY										
								Tot. Average		
								Usage for		
	380-0903	380-0892						Number of	Customers	Max Day
June	Lex South	Lex South		Spears	Total	Total	Customers	Monitored	Usage	
1999	Elkhorn	Elkhorn		Water Dist.	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.		Cu. Ft.						
1	58,863	105			58,968	442,260	2	504,721	0.88	
2	49,447	105			49,552	371,640	2	504,721	0.74	
3	65,707	94			65,801	493,508	2	504,721	0.98	
4	78,864	96			78,960	592,200	2	504,721	1.17	
5	92,886	109			92,995	697,463	2	504,721	1.38	
6	86,194	152			86,346	647,595	2	504,721	1.28	
7	104,576	115			104,691	785,183	2	504,721	1.56	
8	86,715	102			86,817	651,128	2	504,721	1.29	
9	106,649	133		16,078	122,860	921,450	3	625,546	1.47	
10	101,137	163		18,156	119,456	895,920	3	625,546	1.43	
11	92,772	147		19,407	112,326	842,445	3	625,546	1.35	
12	112,592	462		19,090	132,144	991,080	3	625,546	1.58	
13	113,037	90		20,791	133,918	1,004,385	3	625,546	1.61	
14	84,802	5		15,252	100,059	750,443	3	625,546	1.20	
15	57,833	46		15,176	73,055	547,913	3	625,546	0.88	
16	86,374	95		18,017	104,486	783,645	3	625,546	1.25	
17	81,604	70		15,764	97,438	730,785	3	625,546	1.17	
18	97,227	135		15,865	113,227	849,203	3	625,546	1.36	
19	89,278	200		19,403	108,881	816,608	3	625,546	1.31	
20	113,387	224		21,020	134,631	1,009,733	3	625,546	1.61	
21	100,859	421		20,545	121,825	913,688	3	625,546	1.46	
22	104,669	163		20,176	125,008	937,560	3	625,546	1.50	
23	116,681	66		18,032	134,779	1,010,843	3	625,546	1.62	
24	75,322	62		15,524	90,908	681,810	3	625,546	1.09	
25	65,231	69		12,895	78,195	586,463	3	625,546	0.94	
26	85,443	73		16,999	102,515	768,863	3	625,546	1.23	
27	85,530	70		14,685	100,285	752,138	3	625,546	1.20	
28	54,186	64		12,463	66,713	500,348	3	625,546	0.80	
29	80,266	70		12,765	93,101	698,258	3	625,546	1.12	
30	63,520	70		14,329	77,919	584,393	3	625,546	0.93	
Total	2,591,651	3,776		372,432	2,967,859	22,258,943				

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KAWC -- CUSTOMER DEMAND STUDY									
SCHEDULE 5									
OWU USER CLASS - COMPOSITE MAX DAY									
								Tot. Average	
								Usage for	
	380-0903	380-0892					Number of	Customers	Max Day
July	Lex South	Lex South		Spears	Total	Total	Customers	Monitored	Usage
1999	Elkhom	Elkhom		Water Dist.	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios
	Cu. Ft.	Cu. Ft.		Cu. Ft.					
1	84,090	73		13,589	97,752	733,140	3	625,546	1.17
2	80,276	70		14,512	94,858	711,435	3	625,546	1.14
3	86,381	82		15,514	101,977	764,828	3	625,546	1.22
4	92,018	75		16,438	108,531	813,983	3	625,546	1.30
5	111,499	74		18,785	130,358	977,685	3	625,546	1.56
6	75,480	165		18,569	94,214	706,605	3	625,546	1.13
7	108,343	76		18,456	126,875	951,563	3	625,546	1.52
8	79,007	191		17,554	96,752	725,640	3	625,546	1.16
9	109,649	269		22,615	132,533	993,998	3	625,546	1.59
10	97,701	76		21,411	119,188	893,910	3	625,546	1.43
11	100,500	249		22,773	123,522	926,415	3	625,546	1.48
12	96,857	154		26,449	123,460	925,950	3	625,546	1.48
13	80,351	122		25,538	106,011	795,083	3	625,546	1.27
14	83,639	170		23,512	107,321	804,908	3	625,546	1.29
15	95,053	157		24,204	119,414	895,605	3	625,546	1.43
16	111,403	198		21,574	133,175	998,813	3	625,546	1.60
17	116,134	142		21,793	138,069	1,035,518	3	625,546	1.66
18	121,449	751		22,674	144,874	1,086,555	3	625,546	1.74
19	112,010	143		21,438	133,591	1,001,933	3	625,546	1.60
20	97,331	1,375		18,488	117,194	878,955	3	625,546	1.41
21	102,199	1,196		14,708	118,103	885,773	3	625,546	1.42
22	81,004	70		16,032	97,106	728,295	3	625,546	1.16
23	109,456	99		17,307	126,862	951,465	3	625,546	1.52
24	84,170	131		20,037	104,338	782,535	3	625,546	1.25
25	110,127	175		20,258	130,560	979,200	3	625,546	1.57
26	107,421	178		18,711	126,310	947,325	3	625,546	1.51
27	107,489	112		18,005	125,606	942,045	3	625,546	1.51
28	106,626	126		17,224	123,976	929,820	3	625,546	1.49
29	86,527	95		18,763	105,385	790,388	3	625,546	1.26
30	101,953	158		20,969	123,080	923,100	3	625,546	1.48
31	107,727	184		22,637	130,548	979,110	3	625,546	1.57
Total	3,043,870	7,136		610,537	3,661,543	27,461,573			

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KAWC -- CUSTOMER DEMAND STUDY										
SCHEDULE 5										
OWU USER CLASS - COMPOSITE MAX DAY										
								Tot. Average		
								Usage for		
	380-0903	380-0892						Number of	Customers	Max Day
August	Lex South	Lex South		Spears	Total	Total	Customers	Monitored	Usage	
1999	Elkhom	Elkhom		Water Dist.	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.		Cu. Ft.						
1	119,745	218		22,658	142,621	1,069,658	3	625,546	1.71	
2	100,934	209		20,783	121,926	914,445	3	625,546	1.46	
3	110,356	222		21,277	131,855	988,913	3	625,546	1.58	
4	118,086	177		21,539	139,802	1,048,515	3	625,546	1.68	
5	112,327	109		21,484	133,920	1,004,400	3	625,546	1.61	
6	105,771	141		22,078	127,990	959,925	3	625,546	1.53	
7	117,854	191		22,056	140,101	1,050,758	3	625,546	1.68	
8	97,037	135		18,749	115,921	869,408	3	625,546	1.39	
9	97,933	127		18,601	116,661	874,958	3	625,546	1.40	
10	86,335	270		20,333	106,938	802,035	3	625,546	1.28	
11	108,214	126		21,331	129,671	972,533	3	625,546	1.55	
12	116,335	218		21,164	137,717	1,032,878	3	625,546	1.65	
13	93,103	142		20,734	113,979	854,843	3	625,546	1.37	
14	115,959	278		19,369	135,606	1,017,045	3	625,546	1.63	
15	108,755	153		17,572	126,480	948,600	3	625,546	1.52	
16	107,219	95		13,537	120,851	906,383	3	625,546	1.45	
17	92,073	230		16,345	108,648	814,860	3	625,546	1.30	
18	109,200	184		20,593	129,977	974,828	3	625,546	1.56	
19	87,636	141		20,194	107,971	809,783	3	625,546	1.29	
20	91,967	169		19,171	111,307	834,803	3	625,546	1.33	
21	88,053	98		21,397	109,548	821,610	3	625,546	1.31	
22	104,900	254		22,257	127,411	955,583	3	625,546	1.53	
23	83,465	93		20,545	104,103	780,773	3	625,546	1.25	
24	56,296	111		19,069	75,476	566,070	3	625,546	0.90	
25	62,397	262		18,288	80,947	607,103	3	625,546	0.97	
26	77,058	279		18,943	96,280	722,100	3	625,546	1.15	
27	87,142	285		18,335	105,762	793,215	3	625,546	1.27	
28	72,518	294		18,858	91,670	687,525	3	625,546	1.10	
29	95,564	152		19,588	115,304	864,780	3	625,546	1.38	
30	39,636	0		18,547	58,183	436,373	3	625,546	0.70	
31	73,605	20		20,359	93,984	704,880	3	625,546	1.13	
Total	2,937,473	5,383		615,754	3,558,610	26,689,575				

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										Page 4 / 4
KAWC -- CUSTOMER DEMAND STUDY										
SCHEDULE 5										
OWU USER CLASS - COMPOSITE MAX DAY										
									Tot. Average	
									Usage for	
	380-0903	380-0892						Number of	Customers	Max Day
September	Lex South	Lex South	City of	Spears	Total	Total	Customers	Monitored	Usage	
1999	Elkhorn	Elkhorn	Midway	Water Dist.	Cu. Ft. / Day	Gals. / Day	Monitored	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.						
1	116,390	20	13,701	21,463	151,574	1,136,805	4	760,569	1.49	
2	107,154	0	16,024	20,857	144,035	1,080,263	4	760,569	1.42	
3	110,234	50	16,177	20,908	147,369	1,105,268	4	760,569	1.45	
4	118,094	0	17,976	22,177	158,247	1,186,853	4	760,569	1.56	
5	100,519	32	17,679	22,034	140,264	1,051,980	4	760,569	1.38	
6	124,333	0	19,624	20,433	164,390	1,232,925	4	760,569	1.62	
7	78,884	57	20,322	19,419	118,682	890,115	4	760,569	1.17	
8	73,833	90	17,551	19,603	111,077	833,078	4	760,569	1.10	
9	95,078	68	16,149	18,799	130,094	975,705	4	760,569	1.28	
10	94,854	78	15,537	18,007	128,476	963,570	4	760,569	1.27	
11	85,772	0	20,219	19,520	125,511	941,333	4	760,569	1.24	
12	108,985	0	19,402	20,381	148,768	1,115,760	4	760,569	1.47	
13	56,367	0	19,212	16,275	91,854	688,905	4	760,569	0.91	
14	60,572	0	16,721	16,402	93,695	702,713	4	760,569	0.92	
15	88,127	233	18,822	16,375	123,557	926,678	4	760,569	1.22	
16	76,848	209	18,227	17,560	112,844	846,330	4	760,569	1.11	
17	80,201	0	18,676	18,261	117,138	878,535	4	760,569	1.16	
18	76,810	0	17,561	19,028	113,399	850,493	4	760,569	1.12	
19	103,519	0	17,952	19,932	141,403	1,060,523	4	760,569	1.39	
20	62,368	0	19,271	18,669	100,308	752,310	4	760,569	0.99	
21	58,353	0	21,507	17,223	97,083	728,123	4	760,569	0.96	
22	78,809	10	21,838	16,417	117,074	878,055	4	760,569	1.15	
23	66,199	0	21,208	15,562	102,969	772,268	4	760,569	1.02	
24	89,573	0	18,966	15,099	123,638	927,285	4	760,569	1.22	
25	84,822	0	16,673	16,837	118,332	887,490	4	760,569	1.17	
26	91,664	0	19,663	17,970	129,297	969,728	4	760,569	1.28	
27	70,054	0	18,384	15,195	103,633	777,248	4	760,569	1.02	
28	61,074	17	17,605	16,500	95,196	713,970	4	760,569	0.94	
29	53,743	0	14,780	15,860	84,383	632,873	4	760,569	0.83	
30	53,414	0	14,737	14,837	82,988	622,410	4	760,569	0.82	
Total	2,526,647	864	542,164	547,603	3,617,278	27,129,585				

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 2A												
COMMERCIAL USER CLASS - COMPOSITE MAX HOUR - June 21, 1999												
Hartland												
	Jeff Adams	Bob Evans		Dismas	Emerson	Home	Hoagland	Holiday	Lexington	Little Joe's	Patchen	Parkhills
Time	Car Wash	Restaurant	Days Inn	Charities Inc	Center	Owners	Comm. Rtl	Cleaners	Country Club	Mobile Hms	Wilkes Farm	Apts LTD
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.
0.00	0.00	24.85	88.91	17.35	43.01	0.01	7.44	26.61	1283.90	403.25	14.00	41.05
1.00	0.00	3.54	97.42	3.42	30.92	0.01	6.18	26.17	992.87	292.21	13.08	25.35
2.00	0.00	3.04	66.70	2.52	28.70	0.00	6.23	26.90	1248.52	273.01	13.60	16.17
3.00	0.00	2.32	66.12	1.49	18.46	0.01	6.21	26.98	1112.29	257.88	13.31	10.20
4.00	0.00	2.52	69.62	1.49	22.88	0.01	6.19	26.76	360.56	255.86	16.34	9.51
5.00	0.00	23.34	66.98	2.00	35.73	0.01	6.19	26.54	1357.50	261.26	24.86	8.30
6.00	0.00	29.11	74.65	4.86	50.72	0.03	6.81	26.79	1368.82	303.90	15.17	13.22
7.00	0.00	48.61	78.22	21.76	106.28	0.03	10.08	32.88	470.78	319.66	22.10	59.65
8.00	8.77	27.51	83.32	21.86	117.84	0.02	17.94	37.72	630.54	332.39	20.52	42.20
9.00	38.94	41.71	112.49	11.28	104.16	22.91	25.27	11.93	88.46	314.54	28.44	38.54
10.00	65.88	80.08	84.86	4.51	128.25	144.75	30.68	17.27	175.50	309.59	93.22	36.25
11.00	68.22	63.19	73.78	7.90	110.53	134.66	42.31	5.91	32.73	349.86	100.74	20.09
12.00	65.89	32.64	92.75	6.59	98.11	144.75	48.32	18.19	58.38	397.09	68.50	23.71
13.00	73.51	52.17	111.62	4.16	76.47	97.37	31.78	9.13	120.84	395.19	64.91	18.54
14.00	97.29	40.72	101.72	8.53	99.47	0.02	45.03	17.65	872.57	374.39	91.70	39.89
15.00	72.99	41.39	101.88	2.20	80.59	0.02	37.39	9.17	641.69	373.01	94.84	29.30
16.00	67.29	21.17	102.72	29.37	78.07	0.02	38.62	1.24	1037.10	359.80	113.22	32.27
17.00	52.86	28.05	99.09	29.63	77.94	0.04	37.25	0.69	802.15	393.57	101.29	29.98
18.00	38.21	16.64	104.27	19.29	78.64	0.02	25.48	0.51	549.16	414.98	80.54	20.96
19.00	1.50	9.11	129.56	17.99	74.58	0.01	11.83	0.73	766.24	477.40	76.13	40.77
20.00	0.00	19.06	133.86	44.50	78.17	0.01	15.89	0.81	1498.86	533.29	16.92	20.68
21.00	0.00	20.67	141.99	45.24	95.98	30.02	9.19	0.91	1537.25	464.04	14.63	39.51
22.00	0.00	14.65	120.74	41.75	58.51	144.75	7.41	1.00	913.43	453.70	15.11	30.27
23.00	0.00	20.26	97.67	27.49	53.62	92.57	6.95	1.07	1420.84	416.45	26.28	22.32
Total	651.35	666.35	2300.94	377.18	1747.63	812.05	486.67	353.56	19340.98	8726.32	1139.45	668.73

KAWC -- CUSTOMER DEMAND STUDY												12/30/99
SCHEDULE 3A												
OPA USER CLASS - COMPOSITE MAX HOUR - July 23, 1999												
											Tot. Average	
											Usage for	
											Customers	Max Hour
Time	Ag. Science	Federal	Shephards	UK Cooling	UK	UK	VA Hospital	Total	Total	Times 24 =	Monitored	Usage
	Dept. , UK	Medical	House Inc.	Plant	Horticulture	Hospital	Fed. Govt.	Cu. Ft. / Hour	Gals. / Hour	Rate	Gals. / Day	Ratios
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.					
0.00	6.70	2144.61	6.74	1940.27	102.57	1953.38	1082.42	7236.69	54,275	1,302,604	874,127	1.49
1.00	5.44	2834.59	0.39	1467.90	93.32	1921.45	898.10	7221.19	54,159	1,299,814	874,127	1.49
2.00	8.12	2868.39	0.44	1455.34	93.32	1903.66	924.10	7253.37	54,400	1,305,607	874,127	1.49
3.00	10.74	3098.74	0.81	1808.82	94.17	1822.70	923.18	7759.16	58,194	1,396,649	874,127	1.60
4.00	11.59	3141.91	0.55	1318.58	89.96	1874.27	859.47	7296.33	54,722	1,313,339	874,127	1.50
5.00	10.26	3133.24	0.00	1786.18	89.96	1928.74	916.51	7864.89	58,987	1,415,680	874,127	1.62
6.00	16.34	3147.56	3.67	1104.15	222.80	1822.58	876.22	7193.32	53,950	1,294,798	874,127	1.48
7.00	24.86	2976.67	7.47	2098.08	293.43	1976.04	966.08	8342.63	62,570	1,501,673	874,127	1.72
8.00	41.71	3099.09	9.02	1296.11	214.39	2095.30	1155.99	7911.61	59,337	1,424,090	874,127	1.63
9.00	44.51	3147.39	10.60	1882.07	589.37	2281.48	1292.61	9248.03	69,360	1,664,645	874,127	1.90
10.00	36.85	3179.06	1.68	1341.75	990.42	2687.43	1271.51	9508.70	71,315	1,711,566	874,127	1.96
11.00	50.62	3094.67	3.30	2291.63	1454.51	2662.16	1483.55	11040.44	82,803	1,987,279	874,127	2.27
12.00	17.68	2704.38	5.02	1777.68	1261.14	2620.16	1367.23	9753.29	73,150	1,755,592	874,127	2.01
13.00	40.19	2748.79	0.48	2302.25	712.12	2671.00	1400.56	9875.39	74,065	1,777,570	874,127	2.03
14.00	103.75	2502.17	5.29	2260.14	534.72	2945.67	1682.56	10034.30	75,257	1,806,174	874,127	2.07
15.00	77.03	2470.68	1.89	1945.23	569.19	2650.97	1771.40	9486.39	71,148	1,707,550	874,127	1.95
16.00	72.36	2482.00	4.05	2024.31	719.69	2584.00	1834.95	9721.36	72,910	1,749,845	874,127	2.00
17.00	22.73	2436.53	9.15	2416.01	406.93	2429.07	1564.64	9285.06	69,638	1,671,311	874,127	1.91
18.00	28.99	2394.78	7.64	1670.29	360.69	2397.88	1442.98	8303.25	62,274	1,494,585	874,127	1.71
19.00	30.06	2110.29	12.78	2409.11	379.18	2282.08	1498.38	8721.88	65,414	1,569,938	874,127	1.80
20.00	39.79	2092.07	5.56	2243.51	177.40	2167.54	1410.87	8136.74	61,026	1,464,613	874,127	1.68
21.00	24.64	2078.62	2.27	2270.93	363.21	2202.15	1451.13	8392.95	62,947	1,510,731	874,127	1.73
22.00	11.60	2185.66	6.04	2179.29	874.39	2312.47	2041.45	9610.90	72,082	1,729,962	874,127	1.98
23.00	7.05	2216.79	6.80	2114.89	226.16	2258.24	1874.72	8704.65	65,285	1,566,837	874,127	1.79
	743.61	64288.68	111.64	45404.52	10913.04	54450.42	31990.61					

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KAWC -- CUSTOMER DEMAND STUDY												
SCHEDULE 4A												
INDUSTRIAL USER CLASS - COMPOSITE MAX HOUR - July 30, 1999												
										Tot. Average		
										Usage for		
										Times 24 =	Customers	Max Hour
Time	Crest Products Inc	General Electric	Pepsi Cola	Proctor & Gamble	The Trane Co.	Toyota	Total Cu. Ft. / Hour	Total Gals. / Hour	Times 24 = Gals. / Day	Customers Monitored	Max Hour Usage Ratios	
	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.	Cu. Ft.			Rate	Gals. / Day		
0.00	134.50	2223.69	202.66	311.37	1311.60	18975.85	23159.67	173,698	4,168,741	2,162,679	1.93	
1.00	140.84	1769.40	513.39	295.28	1394.73	19851.37	23965.01	179,738	4,313,702	2,162,679	1.99	
2.00	120.11	2243.27	474.29	293.96	1648.57	14854.86	19635.06	147,263	3,534,311	2,162,679	1.63	
3.00	119.78	1701.04	186.60	292.80	1541.44	7072.44	10914.10	81,856	1,964,538	2,162,679	0.91	
4.00	119.22	2108.69	22.18	307.71	1431.63	20598.97	24588.40	184,413	4,425,912	2,162,679	2.05	
5.00	135.42	1703.90	30.51	284.68	1452.00	7440.31	11046.82	82,851	1,988,428	2,162,679	0.92	
6.00	139.32	2033.37	466.29	296.35	1641.23	18337.40	22913.96	171,855	4,124,513	2,162,679	1.91	
7.00	119.27	1985.30	553.29	307.65	1483.33	7024.33	11473.17	86,049	2,065,171	2,162,679	0.95	
8.00	178.68	2259.71	651.91	311.77	1628.32	19093.06	24123.45	180,926	4,342,221	2,162,679	2.01	
9.00	172.11	2103.04	672.63	330.86	1594.45	21102.42	25975.51	194,816	4,675,592	2,162,679	2.16	
10.00	184.24	2017.13	807.73	300.83	1716.26	4965.71	9991.90	74,939	1,798,542	2,162,679	0.83	
11.00	136.15	2428.87	813.92	302.73	1591.62	23082.69	28355.98	212,670	5,104,076	2,162,679	2.36	
12.00	140.19	1837.89	1215.68	324.51	1416.21	10373.73	15308.21	114,812	2,755,478	2,162,679	1.27	
13.00	81.14	2360.34	961.63	302.33	1469.35	15994.14	21168.93	158,767	3,810,407	2,162,679	1.76	
14.00	51.38	1950.39	1139.87	300.91	1298.94	19281.55	24023.04	180,173	4,324,147	2,162,679	2.00	
15.00	60.84	2306.78	639.33	314.75	1373.73	18889.41	23584.84	176,886	4,245,271	2,162,679	1.96	
16.00	60.98	2019.38	582.01	333.05	1262.46	19535.27	23793.15	178,449	4,282,767	2,162,679	1.98	
17.00	60.59	1839.12	470.94	328.69	1352.05	18714.88	22766.27	170,747	4,097,929	2,162,679	1.89	
18.00	71.80	2318.82	434.77	343.86	1691.52	17873.86	22734.63	170,510	4,092,233	2,162,679	1.89	
19.00	61.77	2075.28	369.91	354.90	1924.33	18785.52	23571.71	176,788	4,242,908	2,162,679	1.96	
20.00	27.42	2509.16	394.90	355.09	1785.30	18305.18	23377.05	175,328	4,207,869	2,162,679	1.95	
21.00	12.82	2182.33	966.14	402.33	1781.96	16939.28	22284.86	167,136	4,011,275	2,162,679	1.85	
22.00	15.22	2298.74	793.27	330.96	1597.93	16832.67	21868.79	164,016	3,936,382	2,162,679	1.82	
23.00	32.22	2395.87	530.80	315.20	1748.46	19997.80	25020.35	187,653	4,503,663	2,162,679	2.08	
Total	2376.01	50671.51	13894.65	7642.57	37137.42	393922.70						

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KAWC -- CUSTOMER DEMAND STUDY									12/30/99
SCHEDULE 5A									
OWU USER CLASS - COMPOSITE MAX HOUR - July 18, 1999									
							Tot. Average		
							Usage for		
	380-0903	380-0892				Times 24 =	Customers	Max Hour	
	Lex South	Lex South	Spears	Total	Total	Gals. / Day	Monitored	Usage	
Time	Elkhorn	Elkhorn	Water Dist.	Cu. Ft. / Hour	Gals. / Hour	Rate	Gals. / Day	Ratios	
	Cu. Ft.	Cu. Ft.	Cu. Ft.						
0.00	4878.07	4.56	826.04	5708.67	42,815	1,027,561	625,546	1.64	
1.00	5005.81	4.05	628.24	5638.10	42,286	1,014,858	625,546	1.62	
2.00	5113.55	3.92	548.80	5666.27	42,497	1,019,929	625,546	1.63	
3.00	5004.04	2.90	500.15	5507.09	41,303	991,276	625,546	1.58	
4.00	4811.73	2.93	577.99	5392.65	40,445	970,677	625,546	1.55	
5.00	4844.46	3.01	696.88	5544.35	41,583	997,983	625,546	1.60	
6.00	5070.74	11.74	627.89	5710.37	42,828	1,027,867	625,546	1.64	
7.00	4961.40	50.03	736.34	5747.77	43,108	1,034,599	625,546	1.65	
8.00	4928.32	52.69	909.19	5890.20	44,177	1,060,236	625,546	1.69	
9.00	4998.03	54.00	948.11	6000.14	45,001	1,080,025	625,546	1.73	
10.00	4864.63	55.70	1019.58	5939.91	44,549	1,069,184	625,546	1.71	
11.00	5309.23	56.14	1112.64	6478.01	48,585	1,166,042	625,546	1.86	
12.00	5291.18	55.03	1132.81	6479.02	48,593	1,166,224	625,546	1.86	
13.00	4941.23	53.88	1103.44	6098.55	45,739	1,097,739	625,546	1.75	
14.00	4994.84	54.50	1042.23	6091.57	45,687	1,096,483	625,546	1.75	
15.00	5043.14	55.15	1050.19	6148.48	46,114	1,106,726	625,546	1.77	
16.00	4846.76	54.07	1062.22	5963.05	44,723	1,073,349	625,546	1.72	
17.00	4981.93	54.50	1105.21	6141.64	46,062	1,105,495	625,546	1.77	
18.00	4572.71	55.48	1138.47	5766.66	43,250	1,037,999	625,546	1.66	
19.00	5472.88	45.37	1169.79	6688.04	50,160	1,203,847	625,546	1.92	
20.00	5375.19	9.65	1167.49	6552.33	49,142	1,179,419	625,546	1.89	
21.00	5324.09	3.59	1255.95	6583.63	49,377	1,185,053	625,546	1.89	
22.00	5526.13	5.11	1309.20	6840.44	51,303	1,231,279	625,546	1.97	
23.00	5289.23	2.91	1005.25	6297.39	47,230	1,133,530	625,546	1.81	
Total	121449.32	750.91	22674.10						

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RESIDENTIAL CLASS MAXIMUM DAY DEMAND

As previously stated, meters were read on a daily basis for 204 residential customers during the months of June, July, August and September in order to estimate the maximum day demand factor for the residential customer class. The number of customers whose meters were read on a daily basis varied from 188 to 204 but 204 customers were monitored on approximately 85 percent of the days and 188 customers were monitored approximately 5 percent of the days. The remaining number of customers monitored on 10 percent of the days were 202 or 203.

The information required to calculate the maximum day demands for the residential customers is shown on Schedule 6 which begins on report page 53. The maximum day demands for the months of June, July, August and September are calculated on pages 1, 2, 3, and 4 of Schedule 6. The total average annual daily usage for the customers that were monitored on each day from June through September is calculated on pages 5 and 6 of Schedule 6. The total annual usage for the year ending November 1999 for each of the 204 customers that were monitored is shown on pages 7 and 8 of Schedule 6. The account sequence number and the 12 months total usage are shown on pages 7 and 8 for each customer. The total annual usage for all 204 customers, 16,035 CCF, is shown on page 8. The total annual usage for the customers that were not monitored on various days during the months of June, July and August are shown on page 9 of Schedule 6. During the month of September, all 204 customers were monitored. The numbers on page 9 are used on pages 5 and 6 to calculate the average daily usage for the customers that were monitored.

The five highest maximum day demands for the residential customers occurred on June 8, July 19, August 5, June 22, and September 2. The maximum day usage ratios were 1.77, 1.66, 1.64, 1.59 and 1.57. The average of the five highest days is 1.65. The highest maximum day demand, 1.77 on June 8, was calculated as follows.

The number of customer monitored on June 8 was 188 as shown on Schedule 6 page 1/9. The total usage on June 8 for the 188 monitored customers, 7,297 cu. ft./day, was provided by KAWC and was calculated based on daily meter readings. The total average annual daily usage for the 188 monitored customers, 4,120 cu. ft./day, was calculated on page 5/9 as follows. The total 12 month usage for the 204 customers that were monitored is 16,035 CCF as shown on page 8/9. The annual usage, 998 CCF for the 16 (204-188) customers that were not monitored on June 8 is shown on page

9/9. The balance for the customers that were monitored on June 8 is 15,037 CCF (16,035 - 998). The average daily usage for the monitored customers is 4,120 cu. ft./day ($15,037/365 \times 100$). The maximum day usage ratio on June 8, 1.77 as shown on page 1/9 was calculated by dividing the total usage on June 8 for the 188 monitored customers by the average annual daily usage for the 188 monitored customers ($7,297/4,120 = 1.77$).

As previously stated on page 1 of the report, water use restrictions during the summer of 1999 actually lowered the maximum day demands for the residential customers. Therefore, you can justify increasing the 1999 residential customer class maximum day demand factor in a range of 10 to 20 percent. As previously stated, the average of the five highest maximum day demand factors was 1.65 which is equal to 165 percent and if the average was increased by 15 percent the maximum day demand would be 190 percent (165×1.15). As we previously stated, normally the residential customer class maximum day demand is about 200 percent.

							Page 1/9
KAWC -- CUSTOMER DEMAND STUDY							
SCHEDULE 6							12/28/99
RESIDENTIAL USER CLASS - MAX DAY DEMAND							
		Tot. Average					
		Annual		Average		Avg. Annual	
	Number of	Total Usage	Usage for	Max Day			
June	Customers	Monit. Custs	Monit. Custs	Usage	Usage for	Usage for	
1999	Monitored	Cu. Ft. / Day	Cu. Ft. / Day	Ratios	Gals. / Day	Gals. / Day	
							Pg. 5/9
1							
2	188	4,276	4,120	1.04	171		164
3	188	4,038	4,120	0.98	161		164
4	188	4,072	4,120	0.99	162		164
5							
6							
7							
8	188	7,297	4,120	1.77	291		164
9	204	5,263	4,393	1.20	193		162
10	204	5,778	4,393	1.32	212		162
11	204	5,093	4,393	1.16	187		162
12	204	5,978	4,393	1.36	220		162
13	204	4,781	4,393	1.09	176		162
14	204	5,461	4,393	1.24	201		162
15	204	4,946	4,393	1.13	182		162
16	204	4,585	4,393	1.04	169		162
17	204	5,161	4,393	1.17	190		162
18	204	4,967	4,393	1.13	183		162
19							
20							
21							
22	204	6,986	4,393	1.59	257		162
23	204	6,207	4,393	1.41	228		162
24	204	5,376	4,393	1.22	198		162
25	204	4,432	4,393	1.01	163		162
26	204	4,266	4,393	0.97	157		162
27	204	4,567	4,393	1.04	168		162
28	204	5,093	4,393	1.16	187		162
29	203	3,973	4,341	0.92	147		160
30	203	4,398	4,341	1.01	162		160

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							Page 2 / 9
KAWC -- CUSTOMER DEMAND STUDY							
SCHEDULE 6							12/28/99
RESIDENTIAL USER CLASS - MAX DAY DEMAND							
		Tot. Average					
		Annual		Average		Avg. Annual	
	Number of	Total Usage	Usage for	Max Day			
July	Customers	Monit. Custs	Monit. Custs	Usage	Usage for	Usage for	
1999	Monitored	Cu. Ft. / Day	Cu. Ft. / Day	Ratios	Gals. / Day	Gals. / Day	
							Pg. 5/9
1	204	5,107	4,393	1.16	188	162	
2	204	4,099	4,393	0.93	151	162	
3							
4							
5							
6							
7	203	5,207	4,379	1.19	192	162	
8	203	5,157	4,379	1.18	191	162	
9	203	5,931	4,379	1.35	219	162	
10	202	5,866	4,370	1.34	218	162	
11	203	4,417	4,385	1.01	163	162	
12	204	5,068	4,393	1.15	186	162	
13	204	4,978	4,393	1.13	183	162	
14	204	5,996	4,393	1.36	220	162	
15	204	5,654	4,393	1.29	208	162	
16	204	6,148	4,393	1.40	226	162	
17	203	5,570	4,375	1.27	206	162	
18	203	6,787	4,375	1.55	251	162	
19	204	7,290	4,393	1.66	268	162	
20	204	6,114	4,393	1.39	225	162	
21	204	4,258	4,393	0.97	157	162	
22	204	4,335	4,393	0.99	159	162	
23	204	4,725	4,393	1.08	174	162	
24	204	4,558	4,393	1.04	168	162	
25	204	5,489	4,393	1.25	202	162	
26	204	6,146	4,393	1.40	226	162	
27	204	5,692	4,393	1.30	209	162	
28	204	4,882	4,393	1.11	179	162	
29	204	5,697	4,393	1.30	209	162	
30	204	6,311	4,393	1.44	232	162	
31	204	5,155	4,393	1.17	190	162	

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KAWC -- CUSTOMER DEMAND STUDY							Page 3 / 9
SCHEDULE 6							12/28/99
RESIDENTIAL USER CLASS - MAX DAY DEMAND							
			Tot. Average				
			Annual		Average		Avg. Annual
August	Number of	Total Usage	Usage for	Max Day	Usage for	Usage for	
1999	Customers	Monit. Custs	Monit. Custs	Usage	Monit. Custs	Monit. Custs	
	Monitored	Cu. Ft. / Day	Cu. Ft. / Day	Ratios	Gals. / Day	Gals. / Day	
			Pg. 6/9				
1	204	5,885	4,393	1.34	216		162
2	204	6,002	4,393	1.37	221		162
3	204	5,879	4,393	1.34	216		162
4	204	5,577	4,393	1.27	205		162
5	204	7,187	4,393	1.64	264		162
6	204	6,810	4,393	1.55	250		162
7	204	5,935	4,393	1.35	218		162
8	204	5,206	4,393	1.19	191		162
9	204	4,244	4,393	0.97	156		162
10	204	4,650	4,393	1.06	171		162
11	203	5,250	4,393	1.20	194		162
12	204	6,295	4,393	1.43	231		162
13	204	4,431	4,393	1.01	163		162
14	204	4,189	4,393	0.95	154		162
15	204	3,715	4,393	0.85	137		162
16	204	5,027	4,393	1.14	185		162
17	204	4,094	4,393	0.93	151		162
18	204	4,261	4,393	0.97	157		162
19	204	4,149	4,393	0.94	153		162
20	204	3,702	4,393	0.84	136		162
21	204	3,478	4,393	0.79	128		162
22	204	4,397	4,393	1.00	162		162
23	204	5,119	4,393	1.17	188		162
24	204	3,606	4,393	0.82	133		162
25	204	3,572	4,393	0.81	131		162
26	204	3,632	4,393	0.83	134		162
27	204	3,966	4,393	0.90	146		162
28							
29							
30							
31	204	4,656	4,393	1.06	171		162

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KAWC -- CUSTOMER DEMAND STUDY							Page 4 / 9
SCHEDULE 6							12/28/99
RESIDENTIAL USER CLASS - MAX DAY DEMAND							
Tot. Average							
Annual							Average
Usage for							Avg. Annual
Max Day							Usage for
Usage							Monit. Custs
Monit. Custs							Monit. Custs
Gals. / Day							Gals. / Day
Pg. 6/9							
1	204	6,662	4,393	1.52		245	162
2	204	6,908	4,393	1.57		254	162
3	204	6,032	4,393	1.37		222	162
4	204	5,455	4,393	1.24		201	162
5	204	6,481	4,393	1.48		238	162
6	204	5,680	4,393	1.29		209	162
7	204	4,794	4,393	1.09		176	162
8	204	4,375	4,393	1.00		161	162
9	204	4,831	4,393	1.10		178	162
10	204	4,919	4,393	1.12		181	162
11							
12							
13							
14	204	4,115	4,393	0.94		151	162
15	204	3,590	4,393	0.82		132	162
16	204	4,094	4,393	0.93		151	162
17	204	3,723	4,393	0.85		137	162
18							
19							
20							
21	204	3,602	4,393	0.82		132	162
22	204	3,639	4,393	0.83		134	162
23	204	3,684	4,393	0.84		135	162
24	204	4,340	4,393	0.99		160	162
25							
26							
27							
28	204	3,894	4,393	0.89		143	162
29	204	3,696	4,393	0.84		136	162
30	204	3,823	4,393	0.87		141	162

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RESIDENTIAL USER CLASS - MAX DAY DEMAND											12/28/99
SCHEDULE 6											
	Number of	Tot. 12 Mo.	Deduct				Number of	Tot. 12 Mo.	Deduct		
June	Customers	Usage , 204	Custs. Not		Average	July	Customers	Usage , 204	Custs. Not	Average	
1999	Monitored	Customers	Monitored	Balance	Usage	1999	Monitored	Customers	Monitored	Balance	Usage
		CCF	CCF	CCF	Cu. Ft. / Day			CCF	CCF	CCF	Cu. Ft. / Day
		Pg. 8/9	Pg. 9/9					Pg. 8/9	Pg. 9/9		
1						1	204	16035	0	16035	4393
2	188	16035	998	15037	4120	2	204	16035	0	16035	4393
3	188	16035	998	15037	4120	3					
4	188	16035	998	15037	4120	4					
5						5					
6						6					
7						7	203	16035	53	15982	4379
8	188	16035	998	15037	4120	8	203	16035	53	15982	4379
9	204	16035	0	16035	4393	9	203	16035	53	15982	4379
10	204	16035	0	16035	4393	10	202	16035	83	15952	4370
11	204	16035	0	16035	4393	11	203	16035	30	16005	4385
12	204	16035	0	16035	4393	12	204	16035	0	16035	4393
13	204	16035	0	16035	4393	13	204	16035	0	16035	4393
14	204	16035	0	16035	4393	14	204	16035	0	16035	4393
15	204	16035	0	16035	4393	15	204	16035	0	16035	4393
16	204	16035	0	16035	4393	16	204	16035	0	16035	4393
17	204	16035	0	16035	4393	17	203	16035	68	15967	4375
18	204	16035	0	16035	4393	18	203	16035	68	15967	4375
19						19	204	16035	0	16035	4393
20						20	204	16035	0	16035	4393
21						21	204	16035	0	16035	4393
22	204	16035	0	16035	4393	22	204	16035	0	16035	4393
23	204	16035	0	16035	4393	23	204	16035	0	16035	4393
24	204	16035	0	16035	4393	24	204	16035	0	16035	4393
25	204	16035	0	16035	4393	25	204	16035	0	16035	4393
26	204	16035	0	16035	4393	26	204	16035	0	16035	4393
27	204	16035	0	16035	4393	27	204	16035	0	16035	4393
28	204	16035	0	16035	4393	28	204	16035	0	16035	4393
29	203	16035	190	15845	4341	29	204	16035	0	16035	4393
30	203	16035	190	15845	4341	30	204	16035	0	16035	4393
						31	204	16035	0	16035	4393

RESIDENTIAL USER CLASS - MAX DAY DEMAND											
SCHEDULE 6											
August 1999						September 1999					
Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers	Deduct Custs. Not Monitored	Balance CCF	Average Usage Cu. Ft. / Day		Number of Customers Monitored	Tot. 12 Mo. Usage , 204 Customers	Deduct Custs. Not Monitored	Balance CCF	Average Usage Cu. Ft. / Day	
Pg. 8/9	Pg. 9/9					Pg. 8/9					
1	204	16035	0	16035	4393	1	204	16035	0	16035	4393
2	204	16035	0	16035	4393	2	204	16035	0	16035	4393
3	204	16035	0	16035	4393	3	204	16035	0	16035	4393
4	204	16035	0	16035	4393	4	204	16035	0	16035	4393
5	204	16035	0	16035	4393	5	204	16035	0	16035	4393
6	204	16035	0	16035	4393	6	204	16035	0	16035	4393
7	204	16035	0	16035	4393	7	204	16035	0	16035	4393
8	204	16035	0	16035	4393	8	204	16035	0	16035	4393
9	204	16035	0	16035	4393	9	204	16035	0	16035	4393
10	204	16035	0	16035	4393	10	204	16035	0	16035	4393
11	203	16035	23	16012	4387	11					
12	204	16035	0	16035	4393	12					
13	204	16035	0	16035	4393	13					
14	204	16035	0	16035	4393	14	204	16035	0	16035	4393
15	204	16035	0	16035	4393	15	204	16035	0	16035	4393
16	204	16035	0	16035	4393	16	204	16035	0	16035	4393
17	204	16035	0	16035	4393	17	204	16035	0	16035	4393
18	204	16035	0	16035	4393	18					
19	204	16035	0	16035	4393	19					
20	204	16035	0	16035	4393	20					
21	204	16035	0	16035	4393	21	204	16035	0	16035	4393
22	204	16035	0	16035	4393	22	204	16035	0	16035	4393
23	204	16035	0	16035	4393	23	204	16035	0	16035	4393
24	204	16035	0	16035	4393	24	204	16035	0	16035	4393
25	204	16035	0	16035	4393	25					
26	204	16035	0	16035	4393	26					
27	204	16035	0	16035	4393	27					
28						28	204	16035	0	16035	4393
29						29	204	16035	0	16035	4393
30						30	204	16035	0	16035	4393
31	204	16035	0	16035	4393						

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RESIDENTIAL USER CLASS - MAX DAY DEMAND

SCHEDULE 6

Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF	Sequence Number	12 Months Tot. Usage CCF
100	60	560	29	1190	30	1730	90
110	52	570	48	1200	44	1740	190
120	23	580	178	1210	39	1750	41
130	9	590	2	1220	23	1760	76
150	49	600	58	1230	44	1770	22
160	127	800	98	1240	130	1780	266
170	106	810	115	1250	91	1790	47
180	113	820	262	1260	67	1800	63
190	36	830	196	1270	53	1810	96
200	60	840	103	1280	106	1820	75
210	119	850	142	1290	28	1830	102
220	29	860	304	1400	113	1840	75
230	3	870	116	1410	26	1850	133
240	3	880	242	1420	59	1860	68
250	121	890	211	1430	82	1870	22
260	63	900	143	1440	61	1880	106
270	35	910	182	1450	69	1890	58
280	31	920	56	1460	103	1900	69
290	67	930	135	1470	56	1910	95
400	160	940	248	1480	90	1920	21
410	94	950	227	1490	85	1930	30
420	97	960	214	1500	60	1940	58
430	30	970	123	1510	71	1950	14
440	41	980	125	1520	60	1960	128
450	159	990	218	1530	94	1970	79
470	70	1100	17	1540	112	1980	137
480	18	1110	236	1550	53	1990	12
490	23	1120	53	1560	44	2000	28
500	86	1130	82	1570	114	2010	23
510	23	1140	98	1580	92	2020	25
520	42	1150	30	1590	74	2030	25
530	32	1160	53	1700	134	2040	31
540	31	1170	50	1710	67	2050	26
550	19	1180	35	1720	121	2060	22
Sub. Total	2031	Sub. Total	4429	Sub. Total	2495	Sub. Tot.	2353

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12/28/99

RESIDENTIAL USER CLASS - MAX DAY DEMAND

SCHEDULE 6

Sequence Number	12 Months Tot. Usage	Sequence Number	12 Months Tot. Usage
	CCF		CCF
2070	31	2410	50
2080	20	2420	25
2090	23	2430	24
2100	26	2440	63
2110	95	2450	26
2120	43	2460	55
2130	48	2470	76
2140	153	2480	71
2150	67	2490	23
2160	32	2500	102
2170	34	2510	147
2180	37	2520	90
2190	282	2530	88
2200	52	2540	84
2210	182	2700	16
2220	51	2710	48
2230	130	2720	88
2240	79	2730	98
2250	46	2740	77
2260	34	2750	51
2270	80	2760	83
2280	124	2770	68
2290	131	2780	57
2300	28	2790	30
2310	25	2800	92
2320	34	2810	62
2330	71	2820	75
2340	50	2830	113
2350	160	2840	20
2360	173	2850	61
2370	109	2860	11
2380	60	2870	68
2390	27	2880	38
2400	47	2890	63
Sub. Total	2584	Sub. Total	2143
		CCF Grand Total , 204 Custs. =	16,035

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RESIDENTIAL USER CLASS - MAX DAY DEMAND

12/14/99

SCHEDULE 6

JUNE		JULY		AUGUST		SEPT.	
Seq. Num.	12 Mo. Total Usage , CCF	Seq. Num.	12 Mo. Total Usage , CCF	Seq. Num.	12 Mo. Total Usage , CCF	Seq. Num.	12 Mo. Total Usage , CCF
2390	27	1270	53	2010	23		
2400	47						
2410	50						
2420	25	1190	30				
2430	24	1270	53				
2440	63		83				
2450	26						
2460	55	1190	30				
2470	76						
2480	71						
2490	23	2770	68				
2500	102						
2510	147						
2520	90						
2530	88						
2540	84						
Total	998						
1740	190						

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KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Constance E. Heppenstall

77. Refer to the Heppenstall Testimony, page 10, lines 3–4. Provide a copy of the meter capacity ratios that were used to determine the larger-sized service charges and the calculation of each of these service charges.

Response:

The meter capacity ratios are based on the AWWA M1 Manual, Principles of Water Rates, Fees and Charges, Seventh Edition. See attached page. The ratios used are the same ratios reflected for the Company's present service charges. As a result, all service charges were increase under proposed rates by the same percentage.

Kentucky American Water

Meter Size	Maximum-Rated Safe Operating Flow, gpm	Meter Equivalent Ratio
5/8 in. displacement	20	1.0
3/4 in. displacement	30	1.5
1 in. displacement	50	2.5
1.5 in. displacement	100	5.0
2 in. displacement	160	8.0
3 in. singlejet	320	16.0
3 in. compound, class I	320	16.0
3 in. turbine, class I	350	17.5
4 in. singlejet	500	25.0
4 in. compound, class I	500	25.0
4 in. turbine, class I	630	31.5
6 in. singlejet	1,000	50.0
6 in. compound, class I	1,000	50.0
6 in. turbine, class I	1,300	65.0
8 in. compound, class I	1,600	80.0
8 in. turbine, class II	2,800	140.0
10 in. turbine, class II	4,200	210.0
12 in. turbine, class II	5,300	265.0

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Constance E. Heppenstall

- 78.** Refer to the Heppenstall Testimony, page 9, lines 16–18. Provide a copy of the minimum system analysis that was used to determine the readiness to serve as a portion of their service charge calculation.

Response:

See attached schedule.

KENTUCKY AMERICAN WATER
 READINESS TO SERVE CALCULATON

Line			
(1)	Footage of Mains - 4-inch or less		1,678,383
(2)	Rate Base - 4-inch or less	\$	11,670,721
(3)	Rate Base per Foot of Small Mains - Line (2) divided by Line (1)	\$	6.954
(4)	Total Footage of all Mains		10,758,355
(5)	Total Readiness to Serve Rate Base - Line (4) X Line (3)	\$	74,808,764
(6)	Total Rate Base		441,122,362
(7)	Percentage of Rate Base - Line (5) divided by Line (6)		16.96%
(8)	Return and taxes		44,016,309
(9)	Readiness to service Return and Taxes - Line (8) X Line (6)		7,464,608
(10)	Depreciation Expense - 4-Inch or Less		225,851
(11)	Depreciation per Foot - Line (10) divided by Line (1)	\$	0.13
(12)	Total Readiness to Service Depreciation - Line (11) X Line (4)		1,447,692
(13)	Total Readiness to Serve Costs - Line (9) + Line (12)	\$	8,912,301

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Constance E. Heppenstall

79. Provide all differences in the cost-of-service model in the instant case and in Case No. 2015-00418.

Response:

There are no differences in the cost of service model in the instant case as compared to the model in Case No. 2015-00418 other the following two items:

1. The addition of the calculation of readiness to service costs in the calculation of the customer charge.
2. The change in Factor 4 to reduce the allocation of distribution mains to the Industrial class as discuss on page 5, lines 20-23 of my direct testimony in this proceeding.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Melissa L. Schwarzell

- 80.** Refer to the Schwarzell Testimony, page 10, line 15. Provide support for the additional 1008 annual customers per year.

Response:

The forecast of 1008 customer additions was based on a projected two year average of the changes experienced and expected in 2017 and 2018. (September through December 2018 were forecasted when the analysis was performed.) Please see the attached spreadsheet which shows this calculation, as well as an updated two year average, based on 2018 actual growth, which continues to decelerate. The updated average would be 975. Please see attached for details.

KY American Water Residential Customer Count Projection

	2013	2014	2015	2016	2017	2018 Forecast ¹	2018 Actual ²	2019 Forecast
Jan	110,286	113,816	114,636	116,119	117,337	118,548	118,548	119,298
Feb	110,430	113,795	114,766	116,247	117,359	118,468	118,468	119,335
Mar	110,601	113,580	115,014	116,397	117,658	118,586	118,586	119,458
Apr	110,770	113,585	115,157	116,599	117,991	118,769	118,769	119,636
May	112,842	113,550	115,174	116,819	118,171	118,815	118,815	119,724
Jun	112,909	113,659	115,527	116,944	118,262	118,853	118,853	119,871
Jul	112,957	113,591	115,691	116,893	118,218	118,856	118,856	119,872
Aug	113,608	114,292	115,882	117,139	118,378	119,022	119,022	120,173
Sep	113,783	114,408	116,068	117,276	118,437	119,157	118,973	120,303
Oct	113,723	114,505	116,091	117,385	118,485	119,200	119,017	120,369
Nov	113,691	114,440	116,144	117,324	118,442	119,170	119,049	120,339
Dec	113,777	114,534	116,165	117,366	118,448	119,220	118,958	120,383
AVG	112,448	113,980	115,526	116,876	118,099	118,889	118,826	119,897
YOY Change ³		1,532	1,547	1,349	1,223	790	727	1,008
Two Year Average Change ⁴						1,007	975	

¹ Actual January through August, Forecasted September through December. To isolate organic changes, excludes East Rockcastle customers in Feb thru Aug at average 591/month

² 2018 shows the actual customer count for Jan thru Dec. excluding E. Rockcastle. E. Rockcastle has customer count 578 in Dec or average 588 in 2018.

³ YOY avg customer change for actual '18 is 727. Lower by 63 comparing with forecast increase 790.

⁴ AVG YOY customer change for actual '17 & '18 as forecasted was 1,007. Actual AVG YOY change is 975.

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Witness: Ann E. Bulkley

- 81.** Refer to the application, the Direct Testimony of Ann E. Bulkey (Bulkey Testimony), page 12, line 13 through page 13, line 8, which states that using projected market data is very important.
- a. Some analysts believe that the current interest rate is the most efficient as it contains the most relevant information and since many interest rate forecasts are incorrect, using the current rate is most applicable. Provide Kentucky-American's position regarding this opinion.
 - b. Confirm that the expectations of increased interest rates are just that, an expectation and not a guarantee.

Response:

- a. As discussed in Ms. Bulkley's Direct Testimony, the cost of equity is a forward-looking concept and therefore it is important to consider differences that may occur between current market conditions and projected market conditions. Ms. Bulkley's testimony cites analysts that recognize utility stock valuations are high and have warned investors to proceed with caution on this sector. Furthermore, the Federal Reserve is pursuing a policy normalization by increasing the federal funds rate and unwinding its balance sheet. The desired effect of the Federal Reserve's policy is to increase interest rates. Finally, as shown in Figure 7 on page 28 of Ms. Bulkley's Direct Testimony, interest rates have increased as the yield on the 30-year Treasury Bond has increased 83 basis points since the Commission approved the settlement in the Company's last rate case in August 2016.

Based on these factors, the Company's cost of equity must consider the forward-looking market conditions. If interest rates continue to increase as is projected in Figure 5 on page 25 of Ms. Bulkley's Direct Testimony, relying on current interest rates and current market data will have the effect of understating the cost of equity for KAWC during the time period that the Company's rates will be in effect. As a result, given current and prospective market conditions, the Company believes it is more appropriate to rely on projected interest rates when estimating the cost of equity for KAWC.

- b. Confirmed, however estimating the ROE in this context is intended to reflect investors' expectations. Therefore, it is important to reflect these expectations in the ROE estimation models.

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Witness: Ann E. Bulkley

- 82.** Refer to the Bulkey Testimony, page 17, lines 21–22. Provide any workpapers or studies that support the conclusion that using historical market data in a DCF model results in an understated ROE.

Response:

It is important to note that Ms. Bulkley's testimony on the referenced page specifically refers to the market conditions over the last several years and analysts' expectations that those conditions would be changing over a forward-looking period. Please see Ms. Bulkley's testimony beginning at page 16, line 9 through page 17 line 17 for Value Line's review of the water utility industry. As noted in those quotations, Value Line reported that utility stocks, in particular water utility stocks, experienced high valuations and seemed "expensive". Value Line also noted the flattening of the yield curve, poor long-term total return prospects and the changing interest rate environment as reasons that investors should "proceed with caution when evaluating this group".

Please see also Ms. Bulkley's testimony at page 47, line 12 through page 52, line 18 for a summary of regulatory jurisdictions that have determined that the DCF models have been affected by market conditions.

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Witness: Ann E. Bulkley

- 83.** Refer to the Bulkley Testimony page 32, lines 10–11. Provide all water companies, if any, who have experienced a downgrade related to cash flow metrics resulting from tax reform.

Response:

Ms. Bulkley is not aware of any water companies that have currently received a credit rating downgrade as a result of the impact of tax reform on cash flow metrics. However, please see the table below for a list of the water companies who have experienced a credit outlook downgrade as a result of the impact of tax reform on cash flows. As discussed on page 32 lines 2 to 7 of Ms. Bulkley's testimony, Moody's indicates that a credit outlook downgrade from stable to negative indicates a higher likelihood of a credit rating downgrade that on average usually occurs within a year of the change in outlook.

Furthermore, as discussed on page 31 lines 7 to 15 of Ms. Bulkley's testimony, Moody's issued a report in June of 2018 in which the credit rating agency downgraded the outlook for the entire regulated utility industry citing concerns over the impact on cash flows of regulated utilities as a result of tax reform. Moody's affirmed the negative outlook for the regulated utility industry in a report in November of 2018 which discussed the credit agency's outlook for regulated utilities in 2019.¹ Thus, the negative impact of tax reform on the cash flows of regulated utilities is still very concerning to credit rating agencies over the near term. This highlights the importance of solutions aimed at offsetting the cash flow impacts of tax reform, some of which, as discussed on page 34 lines 22 to 25 of Ms. Bulkley's testimony, include increasing either the authorized ROE or equity ratio.

Water Utility	Rating Agency	Credit Outlook before TCJA	Credit Outlook after TCJA	Date
American Water Works Company, Inc.	Moody's	Stable	Negative	1/19/2018 (Changed) 1/4/2019 (Affirmed)
Aqua Pennsylvania, Inc.	S&P	Stable	Negative	7/9/2018
Connecticut Water Service, Inc.	S&P	Stable	Negative	1/25/2018

¹ Moody's Investors Service, Research Announcement: Moody's: US regulated utilities sector outlook for 2019 remains negative, November 8, 2018.

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Witness: Ann E. Bulkley

- 84.** Refer to the Bulkey Testimony, page 60. Provide an update to Figure 10 using the means as opposed to the medians.

Response:

Please see the table below for a revised version of Figure 10 from page 60 of Ms. Bulkley's testimony which, as requested, presents the mean DCF results for the Water and Combined Utility Proxy Groups as opposed to the median DCF results.

Figure 10: Summary of Constant Growth DCF Results

	Mean Low	Mean	Mean High
Water Proxy Group			
Including AWK			
30-Day Average	8.66%	9.04%	10.61%
90-Day Average	8.66%	9.07%	10.64%
180-Day Average	8.70%	9.14%	10.70%
Excluding AWK			
30-Day Average	8.02%	8.60%	10.22%
90-Day Average	8.00%	8.62%	10.24%
180-Day Average	8.02%	8.70%	10.31%
Combined Utility Proxy Group			
Including AWK			
30-Day Average	9.03%	10.14%	13.30%
90-Day Average	9.08%	10.20%	13.36%
180-Day Average	9.20%	10.32%	13.48%
Excluding AWK			
30-Day Average	8.90%	10.08%	13.40%
90-Day Average	8.95%	10.14%	13.46%
180-Day Average	9.08%	10.27%	13.59%

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Witness: Ann E. Bulkley

- 85.** Refer to the Bulkey Testimony, page 61, lines 16–17. Identify orders entered in any Kentucky Public Service Commission case that utilized the projected annualized dividends and stock prices in the ROE analysis.

Response:

Ms. Bulkley is not aware of any orders issued by the Kentucky Public Service Commission (“Commission”) that utilized projected annualized dividends and stock prices in the ROE analysis. However, Ms. Bulkley notes that the projected DCF analysis can be very informative for the Commission as the analysis illustrates the effect that increases in interest rates may have on the cost of equity for KAWC over the period in which KAWC’s rates will be in effect.

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Witness: Ann E. Bulkley

- 86.** Refer to the Bulkey Testimony, page 66, lines 9–16.
- a. Kentucky-American estimated the market risk premium based on the expected total return on the S&P 500 less the 30-year Treasury bond yield. Provide the Capital Asset Pricing Model (CAPM) analysis using a historical market risk premium.
 - b. Refer to Figure 12 on page 69. Provide an update to Figure 12 using the results from 64a. above.

Response:

- a. Please see KAW_R_PSCDR2_NUM086_Attachment 1 for a revised version of Attachments AEB-9 and AEB-10 which, as requested, reflect the CAPM results using a historical market risk premium for the Water and Combined Utility Proxy Groups.
- b. Please see the table below for a revised version of Figure 12 on page 69 of Ms. Bulkley's testimony which, as requested, presents the CAPM results using a historical market risk premium.

Figure 12: CAPM Results

	Current Risk-Free Rate (3.09%)	2018-2019 Projected Risk- Free Rate (3.52%)	2020-2024 Projected Risk- Free Rate (4.20%)	Mean Result
Water Proxy Group				
Including AWK				
Bloomberg Beta	8.71%	9.13%	9.81%	9.22%
Value Line Beta	8.56%	8.98%	9.67%	9.07%
Excluding AWK				
Bloomberg Beta	8.96%	9.38%	10.07%	9.47%
Value Line Beta	8.77%	9.20%	9.88%	9.28%
Combined Utility Proxy Group				
Including AWK				
Bloomberg Beta	7.92%	8.34%	9.02%	8.43%
Value Line Beta	8.18%	8.61%	9.29%	8.69%
Excluding AWK				
Bloomberg Beta	7.94%	8.36%	9.04%	8.45%
Value Line Beta	8.22%	8.65%	9.33%	8.73%

CAPITAL ASSET PRICING MODEL -- WATER PROXY GROUP INCLUDING AWK

$$K = R_f + \beta (R_m - R_f)$$

	[4]	[5]	[6]	[7]	[8]
	Risk-Free Rate (R_f)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Proxy Group Average Bloomberg Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.791	12.10%	7.10%	8.71%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.791	12.10%	7.10%	9.13%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.791	12.10%	7.10%	9.81%
Average					9.22%
Proxy Group Average Value Line Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.770	12.10%	7.10%	8.56%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.770	12.10%	7.10%	8.98%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.770	12.10%	7.10%	9.67%
Average					9.07%
Overall Average					9.14%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2

[3] Source: Blue Chip Financial Forecasts, Vol. 37, No. 6, June 1, 2018, at 14

[4] See Notes [1], [2], and [3]

[5] Source: Attachment AEB-6

[6] Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2018, Exhibit 2.3. Average return on large company stocks from 1926-2017 - 12.10%.

[7] Equals [6] - 5% (Average income only return on long-term government bonds from 1926-2017)

[8] Equals [4] + [5] x [7]

CAPITAL ASSET PRICING MODEL -- WATER PROXY GROUP EXCLUDING AWK

$$K = R_f + \beta (R_m - R_f)$$

	[4]	[5]	[6]	[7]	[8]
	Risk-Free Rate (R_f)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Proxy Group Average Bloomberg Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.826	12.10%	7.10%	8.96%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.826	12.10%	7.10%	9.38%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.826	12.10%	7.10%	10.07%
Average					9.47%
Proxy Group Average Value Line Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.800	12.10%	7.10%	8.77%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.800	12.10%	7.10%	9.20%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.800	12.10%	7.10%	9.88%
Average					9.28%
Overall Average					9.38%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2

[3] Source: Blue Chip Financial Forecasts, Vol. 37, No. 6, June 1, 2018, at 14

[4] See Notes [1], [2], and [3]

[5] Source: Attachment AEB-6

[6] Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2018, Exhibit 2.3. Average return on large company stocks from 1926-2017 - 12.10%.

[7] Equals [6] - 5% (Average income only return on long-term government bonds from 1926-2017)

[8] Equals [4] + [5] x [7]

CAPITAL ASSET PRICING MODEL -- COMBINED UTILITY PROXY GROUP INCLUDING AWK

$$K = R_f + \beta (R_m - R_f)$$

	[4]	[5]	[6]	[7]	[8]
	Risk-Free Rate (R_f)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Proxy Group Average Bloomberg Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.679	12.10%	7.10%	7.92%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.679	12.10%	7.10%	8.34%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.679	12.10%	7.10%	9.02%
Average					8.43%
Proxy Group Average Value Line Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.717	12.10%	7.10%	8.18%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.717	12.10%	7.10%	8.61%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.717	12.10%	7.10%	9.29%
Average					8.69%
Overall Average					8.56%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2

[3] Source: Blue Chip Financial Forecasts, Vol. 37, No. 6, June 1, 2018, at 14

[4] See Notes [1], [2], and [3]

[5] Source: Attachment AEB-7

[6] Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2018, Exhibit 2.3. Average return on large company stocks from 1926-2017 - 12.10%.

[7] Equals [6] - 5% (Average income only return on long-term government bonds from 1926-2017)

[8] Equals [4] + [5] x [7]

CAPITAL ASSET PRICING MODEL -- COMBINED UTILITY PROXY GROUP EXCLUDING AWK

$$K = R_f + \beta (R_m - R_f)$$

	[4]	[5]	[6]	[7]	[8]
	Risk-Free Rate (R_f)	Beta (β)	Market Return (R_m)	Market Risk Premium ($R_m - R_f$)	ROE (K)
Proxy Group Average Bloomberg Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.682	12.10%	7.10%	7.94%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.682	12.10%	7.10%	8.36%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.682	12.10%	7.10%	9.04%
Average					8.45%
Proxy Group Average Value Line Beta					
Current 30-day average of 30-year U.S. Treasury bond yield [1]	3.09%	0.723	12.10%	7.10%	8.22%
Near-term projected 30-year U.S. Treasury bond yield (Q4 2018 - Q1 2020) [2]	3.52%	0.723	12.10%	7.10%	8.65%
Projected 30-year U.S. Treasury bond yield (2020 - 2024) [3]	4.20%	0.723	12.10%	7.10%	9.33%
Average					8.73%
Overall Average					8.59%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Blue Chip Financial Forecasts, Vol. 37, No. 10, October 1, 2018, at 2

[3] Source: Blue Chip Financial Forecasts, Vol. 37, No. 6, June 1, 2018, at 14

[4] See Notes [1], [2], and [3]

[5] Source: Attachment AEB-7

[6] Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2018, Exhibit 2.3. Average return on large company stocks from 1926-2017 - 12.10%.

[7] Equals [6] - 5% (Average income only return on long-term government bonds from 1926-2017)

[8] Equals [4] + [5] x [7]

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Ann E. Bulkley

- 87.** Refer to the Bulkley Testimony, page 78, lines 15–19.
- a. Kentucky-American's ROE analysis concludes a reasonable range is from 10.00 percent to 10.80 percent and proposes an ROE of 10.80. Confirm that this proposed ROE is at the maximum of the proposed range.
 - b. Explain whether Kentucky-American's proposed ROE of 10.80 percent is still recommended if the proposed QIP is approved.
 - c. Confirm that no flotation costs were added to the ROE estimates.

Response:

- a. Confirmed. As discussed on page 78, line 18 through page 79 line 6 of Ms. Bulkley's Direct Testimony, the high end of the range was selected to reflect (a) the business risk of Kentucky-American as compared to the proxy group and (b) the impact of the current low interest rate environment on the ROE estimation models and the market's expectation for higher interest rates during the time period when Kentucky-American's rates will be in effect.
- b. Ms. Bulkley's recommendation assumes that the proposed QIP will be approved by the Kentucky Public Service Commission. However, as discussed on page 73 lines 15 through 18 of Ms. Bulkley's Direct Testimony, Kentucky-American's risk as compared to the proxy group would be significantly increased if the Company were unable to recover infrastructure replacement costs through a capital tracking mechanism given the prevalence of capital tracking mechanisms in the operating jurisdictions of the proxy group companies.
- c. Confirmed.

**KENTUCKY-AMERICAN WATER COMPANY
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Witness: Ann E. Bulkley

- 88.** Refer to the Bulkey Testimony, Attachments AEB-1, AEB-2, AEB-3, and AEB-4. Provide an update using the mean as opposed to the median.

Response:

Please see KAW_R_PSCDR2_NUM088_012519_Attachment 1 for a revised version of Attachments AEB-1 through AEB-4 which, as requested, reflects the mean DCF results for the Water and Combined Utility Proxy Groups.

30-DAY CONSTANT GROWTH DCF -- WATER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
													Excluding Low-End Outliers		
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
American States Water Co	AWR	\$1.10	\$60.33	1.82%	1.87%	6.00%	4.00%	6.00%	5.33%	5.86%	7.21%	7.88%		7.21%	7.88%
American Water	AWK	\$1.82	\$88.33	2.06%	2.15%	10.00%	8.10%	7.80%	8.63%	9.94%	10.78%	12.16%	9.94%	10.78%	12.16%
California Water Service Group	CWT	\$0.75	\$41.39	1.81%	1.89%	9.50%	9.80%	7.00%	8.77%	8.88%	10.66%	11.70%	8.88%	10.66%	11.70%
Middlesex Water Company	MSEX	\$0.90	\$46.85	1.91%	1.96%	8.00%	2.70%	n/a	5.35%	4.64%	7.31%	9.99%		7.31%	9.99%
York Water Company	YORW	\$0.67	\$30.24	2.20%	2.28%	9.00%	4.90%	n/a	6.95%	7.16%	9.23%	11.30%	7.16%	9.23%	11.30%
Mean				1.96%	2.03%	8.50%	5.90%	6.93%	7.01%	7.29%	9.04%	10.61%	8.66%	9.04%	10.61%
Mean excluding AWK				1.94%	2.00%	8.13%	5.35%	6.50%	6.60%	6.63%	8.60%	10.22%	8.02%	8.60%	10.22%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-day average as of September 28, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
- [12] Equals [9] if greater than 7%
- [13] Equals [10] if greater than 7%
- [14] Equals [11] if greater than 7%

90-DAY CONSTANT GROWTH DCF -- WATER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
													Excluding Low-End Outliers		
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
American States Water Co	AWR	\$1.10	\$59.01	1.86%	1.91%	6.00%	4.00%	6.00%	5.33%	5.90%	7.25%	7.92%		7.25%	7.92%
American Water	AWK	\$1.82	\$86.21	2.11%	2.20%	10.00%	8.10%	7.80%	8.63%	9.99%	10.84%	12.22%	9.99%	10.84%	12.22%
California Water Service Group	CWT	\$0.75	\$40.67	1.84%	1.92%	9.50%	9.80%	7.00%	8.77%	8.91%	10.69%	11.73%	8.91%	10.69%	11.73%
Middlesex Water Company	MSEX	\$0.90	\$44.82	2.00%	2.05%	8.00%	2.70%	n/a	5.35%	4.72%	7.40%	10.08%		7.40%	10.08%
York Water Company	YORW	\$0.67	\$31.22	2.13%	2.21%	9.00%	4.90%	n/a	6.95%	7.09%	9.16%	11.23%	7.09%	9.16%	11.23%
Mean				1.99%	2.06%	8.50%	5.90%	6.93%	7.01%	7.32%	9.07%	10.64%	8.66%	9.07%	10.64%
Mean excluding AWK				1.96%	2.02%	8.13%	5.35%	6.50%	6.60%	6.66%	8.62%	10.24%	8.00%	8.62%	10.24%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-day average as of September 28, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))
- [12] Equals [9] if greater than 7%
- [13] Equals [10] if greater than 7%
- [14] Equals [11] if greater than 7%

180-DAY CONSTANT GROWTH DCF -- WATER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
													Excluding Low-End Outliers		
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
American States Water Co	AWR	\$1.10	\$56.58	1.94%	2.00%	6.00%	4.00%	6.00%	5.33%	5.98%	7.33%	8.00%		7.33%	8.00%
American Water	AWK	\$1.82	\$83.98	2.17%	2.26%	10.00%	8.10%	7.80%	8.63%	10.05%	10.89%	12.28%	10.05%	10.89%	12.28%
California Water Service Group	CWT	\$0.75	\$39.86	1.88%	1.96%	9.50%	9.80%	7.00%	8.77%	8.95%	10.73%	11.77%	8.95%	10.73%	11.77%
Middlesex Water Company	MSEX	\$0.90	\$41.55	2.15%	2.21%	8.00%	2.70%	n/a	5.35%	4.88%	7.56%	10.24%		7.56%	10.24%
York Water Company	YORW	\$0.67	\$31.19	2.14%	2.21%	9.00%	4.90%	n/a	6.95%	7.09%	9.16%	11.23%	7.09%	9.16%	11.23%
Mean				2.06%	2.13%	8.50%	5.90%	6.93%	7.01%	7.39%	9.14%	10.70%	8.70%	9.14%	10.70%
Mean Excluding AWK				2.03%	2.10%	8.13%	5.35%	6.50%	6.60%	6.73%	8.70%	10.31%	8.02%	8.70%	10.31%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 180-day average as of September 28, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))
- [12] Equals [9] if greater than 7%
- [13] Equals [10] if greater than 7%
- [14] Equals [11] if greater than 7%

30-DAY CONSTANT GROWTH DCF -- COMBINED UTILITY PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
													Excluding Low-End Outliers		
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
American States Water Co	AWR	\$1.10	\$60.33	1.82%	1.87%	6.00%	4.00%	6.00%	5.33%	5.86%	7.21%	7.88%		7.21%	7.88%
American Water	AWK	\$1.82	\$88.33	2.06%	2.15%	10.00%	8.10%	7.80%	8.63%	9.94%	10.78%	12.16%	9.94%	10.78%	12.16%
Atmos Energy Corporation	ATO	\$1.94	\$93.25	2.08%	2.15%	7.50%	6.95%	6.50%	6.98%	8.65%	9.14%	9.66%	8.65%	9.14%	9.66%
California Water Service Group	CWT	\$0.75	\$41.39	1.81%	1.89%	9.50%	9.80%	7.00%	8.77%	8.88%	10.66%	11.70%	8.88%	10.66%	11.70%
Middlesex Water Company	MSEX	\$0.90	\$46.85	1.91%	1.96%	8.00%	2.70%	n/a	5.35%	4.64%	7.31%	9.99%		7.31%	9.99%
New Jersey Resources Corporation	NJR	\$1.17	\$46.24	2.53%	2.63%	9.50%	7.10%	7.00%	7.87%	9.62%	10.50%	12.15%	9.62%	10.50%	12.15%
Northwest Natural Gas Company	NWN	\$1.89	\$66.31	2.85%	3.04%	30.50%	4.50%	4.30%	13.10%	7.21%	16.14%	33.79%	7.21%	16.14%	33.79%
ONE Gas, Inc.	OGS	\$1.84	\$80.44	2.29%	2.37%	10.50%	5.50%	5.70%	7.23%	7.85%	9.60%	12.91%	7.85%	9.60%	12.91%
South Jersey Industries, Inc.	SJI	\$1.12	\$34.14	3.28%	3.47%	9.50%	12.00%	12.20%	11.23%	12.94%	14.70%	15.68%	12.94%	14.70%	15.68%
Southwest Gas Corporation	SWX	\$2.08	\$79.47	2.62%	2.69%	9.00%	4.00%	4.00%	5.67%	6.67%	8.36%	11.74%		8.36%	11.74%
Spire, Inc.	SR	\$2.25	\$75.06	3.00%	3.07%	7.50%	3.53%	4.00%	5.01%	6.58%	8.08%	10.61%		8.08%	10.61%
York Water Company	YORW	\$0.67	\$30.24	2.20%	2.28%	9.00%	4.90%	n/a	6.95%	7.16%	9.23%	11.30%	7.16%	9.23%	11.30%
Mean				2.37%	2.46%	10.54%	6.09%	6.45%	7.68%	8.00%	10.14%	13.30%	9.03%	10.14%	13.30%
Mean excluding AWK				2.40%	2.49%	10.59%	5.91%	6.30%	7.59%	7.82%	10.08%	13.40%	8.90%	10.08%	13.40%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-day average as of September 28, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
- [12] Equals [9] if greater than 7%
- [13] Equals [10] if greater than 7%
- [14] Equals [11] if greater than 7%

90-DAY CONSTANT GROWTH DCF -- COMBINED UTILITY PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
													Excluding Low-End Outliers		
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
American States Water Co	AWR	\$1.10	\$59.01	1.86%	1.91%	6.00%	4.00%	6.00%	5.33%	5.90%	7.25%	7.92%		7.25%	7.92%
American Water	AWK	\$1.82	\$86.21	2.11%	2.20%	10.00%	8.10%	7.80%	8.63%	9.99%	10.84%	12.22%	9.99%	10.84%	12.22%
Atmos Energy Corporation	ATO	\$1.94	\$90.93	2.13%	2.21%	7.50%	6.95%	6.50%	6.98%	8.70%	9.19%	9.71%	8.70%	9.19%	9.71%
California Water Service Group	CWT	\$0.75	\$40.67	1.84%	1.92%	9.50%	9.80%	7.00%	8.77%	8.91%	10.69%	11.73%	8.91%	10.69%	11.73%
Middlesex Water Company	MSEX	\$0.90	\$44.82	2.00%	2.05%	8.00%	2.70%	n/a	5.35%	4.72%	7.40%	10.08%		7.40%	10.08%
New Jersey Resources Corporation	NJR	\$1.17	\$45.21	2.59%	2.69%	9.50%	7.10%	7.00%	7.87%	9.68%	10.56%	12.21%	9.68%	10.56%	12.21%
Northwest Natural Gas Company	NWN	\$1.89	\$63.82	2.96%	3.16%	30.50%	4.50%	4.30%	13.10%	7.33%	16.26%	33.91%	7.33%	16.26%	33.91%
ONE Gas, Inc.	OGS	\$1.84	\$76.73	2.40%	2.48%	10.50%	5.50%	5.70%	7.23%	7.96%	9.72%	13.02%	7.96%	9.72%	13.02%
South Jersey Industries, Inc.	SJI	\$1.12	\$33.42	3.35%	3.54%	9.50%	12.00%	12.20%	11.23%	13.01%	14.77%	15.76%	13.01%	14.77%	15.76%
Southwest Gas Corporation	SWX	\$2.08	\$77.91	2.67%	2.75%	9.00%	4.00%	4.00%	5.67%	6.72%	8.41%	11.79%		8.41%	11.79%
Spire, Inc.	SR	\$2.25	\$72.58	3.10%	3.18%	7.50%	3.53%	4.00%	5.01%	6.68%	8.19%	10.72%		8.19%	10.72%
York Water Company	YORW	\$0.67	\$31.22	2.13%	2.21%	9.00%	4.90%	n/a	6.95%	7.09%	9.16%	11.23%	7.09%	9.16%	11.23%
Mean				2.43%	2.52%	10.54%	6.09%	6.45%	7.68%	8.06%	10.20%	13.36%	9.08%	10.20%	13.36%
Mean excluding AWK				2.46%	2.55%	10.59%	5.91%	6.30%	7.59%	7.88%	10.14%	13.46%	8.95%	10.14%	13.46%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-day average as of September 28, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
- [12] Equals [9] if greater than 7%
- [13] Equals [10] if greater than 7%
- [14] Equals [11] if greater than 7%

180-DAY CONSTANT GROWTH DCF -- COMBINED UTILITY PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
													Excluding Low-End Outliers		
Company		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
American States Water Co	AWR	\$1.10	\$56.58	1.94%	2.00%	6.00%	4.00%	6.00%	5.33%	5.98%	7.33%	8.00%		7.33%	8.00%
American Water	AWK	\$1.82	\$83.98	2.17%	2.26%	10.00%	8.10%	7.80%	8.63%	10.05%	10.89%	12.28%	10.05%	10.89%	12.28%
Atmos Energy Corporation	ATO	\$1.94	\$86.98	2.23%	2.31%	7.50%	6.95%	6.50%	6.98%	8.80%	9.29%	9.81%	8.80%	9.29%	9.81%
California Water Service Group	CWT	\$0.75	\$39.86	1.88%	1.96%	9.50%	9.80%	7.00%	8.77%	8.95%	10.73%	11.77%	8.95%	10.73%	11.77%
Middlesex Water Company	MSEX	\$0.90	\$41.55	2.15%	2.21%	8.00%	2.70%	n/a	5.35%	4.88%	7.56%	10.24%		7.56%	10.24%
New Jersey Resources Corporation	NJR	\$1.17	\$42.59	2.75%	2.86%	9.50%	7.10%	7.00%	7.87%	9.84%	10.72%	12.38%	9.84%	10.72%	12.38%
Northwest Natural Gas Company	NWN	\$1.89	\$60.69	3.11%	3.32%	30.50%	4.50%	4.30%	13.10%	7.48%	16.42%	34.09%	7.48%	16.42%	34.09%
ONE Gas, Inc.	OGS	\$1.84	\$72.34	2.54%	2.64%	10.50%	5.50%	5.70%	7.23%	8.11%	9.87%	13.18%	8.11%	9.87%	13.18%
South Jersey Industries, Inc.	SJI	\$1.12	\$31.21	3.59%	3.79%	9.50%	12.00%	12.20%	11.23%	13.26%	15.02%	16.01%	13.26%	15.02%	16.01%
Southwest Gas Corporation	SWX	\$2.08	\$74.21	2.80%	2.88%	9.00%	4.00%	4.00%	5.67%	6.86%	8.55%	11.93%		8.55%	11.93%
Spire, Inc.	SR	\$2.25	\$70.87	3.18%	3.25%	7.50%	3.53%	4.00%	5.01%	6.76%	8.26%	10.79%		8.26%	10.79%
York Water Company	YORW	\$0.67	\$31.19	2.14%	2.21%	9.00%	4.90%	n/a	6.95%	7.09%	9.16%	11.23%	7.09%	9.16%	11.23%
Mean				2.54%	2.64%	10.54%	6.09%	6.45%	7.68%	8.17%	10.32%	13.48%	9.20%	10.32%	13.48%
Mean Excluding AWK				2.57%	2.68%	10.59%	5.91%	6.30%	7.59%	8.00%	10.27%	13.59%	9.08%	10.27%	13.59%

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 180-day average as of September 28, 2018
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])
- [12] Equals [9] if greater than 7%
- [13] Equals [10] if greater than 7%
- [14] Equals [11] if greater than 7%

PROJECTED CONSTANT GROWTH DCF – WATER PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		Excluding Low-End Outliers															
Company	Annualized Dividend (2021 - 2023)	Stock Price (2021 - 2023)			Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE	
American States Water Co	AWR	\$1.45	\$60.00	\$45.00	\$52.50	2.76%	2.84%	6.00%	4.00%	6.00%	5.33%	6.82%	8.17%	8.84%		8.17%	8.84%
American Water	AWK	\$2.60	\$115.00	\$75.00	\$95.00	2.74%	2.85%	10.00%	8.10%	7.80%	8.63%	10.64%	11.49%	12.87%	10.64%	11.49%	12.87%
California Water Service Group	CWT	\$1.02	\$50.00	\$35.00	\$42.50	2.40%	2.51%	9.50%	9.80%	7.00%	8.77%	9.48%	11.27%	12.32%	9.48%	11.27%	12.32%
Middlesex Water Company	MSEX	\$1.11	\$50.00	\$35.00	\$42.50	2.61%	2.68%	8.00%	2.70%	n/a	5.35%	5.35%	8.03%	10.72%		8.03%	10.72%
York Water Company	YORW	\$1.00	\$45.00	\$30.00	\$37.50	2.67%	2.76%	9.00%	4.90%	n/a	6.95%	7.63%	9.71%	11.79%	7.63%	9.71%	11.79%
Mean						2.64%	2.73%	8.50%	5.90%	6.93%	7.01%	7.98%	9.73%	11.31%	9.25%	9.73%	11.31%
Mean excl AWK						2.61%	2.70%	8.13%	5.35%	6.50%	6.60%	7.32%	9.30%	10.92%	8.56%	9.30%	10.92%

Notes:

- [1] Source: Value Line Reports; dated July 13, 2018
- [2] Source: Value Line Reports; dated July 13, 2018
- [3] Source: Value Line Reports; dated July 13, 2018
- [4] Source: Value Line Reports; dated July 13, 2018
- [5] Equals [1] / [4]
- [6] Equals [5] x (1 + 0.50 x [10])
- [7] Source: Value Line
- [8] Source: Yahoo! Finance
- [9] Source: Zacks
- [10] Equals Average ([7], [8], [9])
- [11] Equals [5] x (1 + 0.50 x Minimum ([7], [8], [9]) + Minimum ([7], [8], [9]))
- [12] Equals [6] + [10]
- [13] Equals [5] x (1 + 0.50 x Maximum ([7], [8], [9]) + Maximum ([7], [8], [9]))
- [14] Equals [11] if greater than 7%
- [15] Equals [12] if greater than 7%
- [16] Equals [13] if greater than 7%

PROJECTED CONSTANT GROWTH DCF -- COMBINED UTILITY PROXY GROUP

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	
														<u>Excluding Low-End Outliers</u>			
	Annualized Dividend (2021 - 2023)	Stock Price (2021 - 2023)			Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Mean ROE			
Company		High	Low	Mean										Low ROE	ROE	High ROE	
American States Water Co	AWR	\$1.45	\$60.00	\$45.00	\$52.50	2.76%	2.84%	6.00%	4.00%	6.00%	5.33%	6.82%	8.17%	8.84%	8.17%	8.84%	
American Water	AWK	\$2.60	\$115.00	\$75.00	\$95.00	2.74%	2.85%	10.00%	8.10%	7.80%	8.63%	10.64%	11.49%	12.87%	10.64%	11.49%	12.87%
Atmos Energy Corporation	ATO	\$2.50	\$120.00	\$100.00	\$110.00	2.27%	2.35%	7.50%	6.95%	6.50%	6.98%	8.85%	9.34%	9.86%	8.85%	9.34%	9.86%
California Water Service Group	CWT	\$1.02	\$50.00	\$35.00	\$42.50	2.40%	2.51%	9.50%	9.80%	7.00%	8.77%	9.48%	11.27%	12.32%	9.48%	11.27%	12.32%
Middlesex Water Company	MSEX	\$1.11	\$50.00	\$35.00	\$42.50	2.61%	2.68%	8.00%	2.70%	n/a	5.35%	5.35%	8.03%	10.72%	8.03%	10.72%	
New Jersey Resources Corporation	NJR	\$1.24	\$55.00	\$45.00	\$50.00	2.48%	2.58%	9.50%	7.10%	7.00%	7.87%	9.57%	10.44%	12.10%	9.57%	10.44%	12.10%
Northwest Natural Gas Company	NWN	\$2.20	\$65.00	\$55.00	\$60.00	3.67%	3.91%	30.50%	4.50%	4.30%	13.10%	8.05%	17.01%	34.73%	8.05%	17.01%	34.73%
ONE Gas, Inc.	OGS	\$2.50	\$125.00	\$90.00	\$107.50	2.33%	2.41%	10.50%	5.50%	5.70%	7.23%	7.89%	9.64%	12.95%	7.89%	9.64%	12.95%
South Jersey Industries, Inc.	SJI	\$1.35	\$40.00	\$30.00	\$35.00	3.86%	4.07%	9.50%	12.00%	12.20%	11.23%	13.54%	15.31%	16.29%	13.54%	15.31%	16.29%
Southwest Gas Corporation	SWX	\$2.60	\$105.00	\$70.00	\$87.50	2.97%	3.06%	9.00%	4.00%	4.00%	5.67%	7.03%	8.72%	12.11%	7.03%	8.72%	12.11%
Spire, Inc.	SR	\$2.50	\$105.00	\$75.00	\$90.00	2.78%	2.85%	7.50%	3.53%	4.00%	5.01%	6.36%	7.86%	10.38%	7.86%	10.38%	
York Water Company	YORW	\$1.00	\$45.00	\$30.00	\$37.50	2.67%	2.76%	9.00%	4.90%	n/a	6.95%	7.63%	9.71%	11.79%	7.63%	9.71%	11.79%
Mean						2.79%	2.90%	10.54%	6.09%	6.45%	7.68%	8.43%	10.58%	13.75%	9.19%	10.58%	13.75%
Mean excl AWK						2.80%	2.91%	10.59%	5.91%	6.30%	7.59%	8.23%	10.50%	13.82%	9.00%	10.50%	13.82%

Notes:

- [1] Source: Value Line Reports; dated July 13, 2018 (Water) and August 31, 2018 (Natural Gas)
- [2] Source: Value Line Reports; dated July 13, 2018 (Water) and August 31, 2018 (Natural Gas)
- [3] Source: Value Line Reports; dated July 13, 2018 (Water) and August 31, 2018 (Natural Gas)
- [4] Source: Value Line Reports; dated July 13, 2018 (Water) and August 31, 2018 (Natural Gas)
- [5] Equals [1] / [4]
- [6] Equals [5] x (1 + 0.50 x [10])
- [7] Source: Value Line
- [8] Source: Yahoo! Finance
- [9] Source: Zacks
- [10] Equals Average ([7], [8], [9])
- [11] Equals [5] x (1 + 0.50 x Minimum ([7], [8], [9]) + Minimum ([7], [8], [9]))
- [12] Equals [6] + [10]
- [13] Equals [5] x (1 + 0.50 x Maximum ([7], [8], [9]) + Maximum ([7], [8], [9]))
- [14] Equals [11] if greater than 7%
- [15] Equals [12] if greater than 7%
- [16] Equals [13] if greater than 7%

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Ann E. Bulkley

- 89.** Refer to the Bulkey Testimony, Attachment AEB-5.
- a. Provide any updates to the Value Line ROE Projections.
 - b. For each proxy group company, provide the most recently authorized ROE awards and the date of this award.

Response:

- a. Please see KAW_R_PSCDR2_NUM089_012519_Attachment 1 for a revised version of Attachment AEB-5 updated using the Value Line Reports as of January 11, 2019 for the Water Utility Proxy Group.
- b. Please see KAW_R_PSCDR2_NUM089_012519_Attachment 2 for the most recently authorized ROE awards of the utility operating subsidiaries of the companies in the Water Utility Proxy Group.

VALUE LINE ROE PROJECTIONS -- WATER PROXY GROUP

Company	Ticker	2019	2021-2023
American States Water Co	AWR	13.00%	14.00%
American Water Works Co, Inc.	AWK	10.50%	10.50%
California Water Service Group	CWT	11.00%	11.50%
Middlesex Water Company	MSEX	13.00%	13.00%
York Water Company	YORW	10.50%	13.50%
	Median	11.00%	13.00%
	Median excl AWK	12.00%	13.25%

Source: Value Line Reports; dated January 11, 2019

AUTHORIZED ROE ANALYSIS -- WATER PROXY GROUP

Company	Ticker	Type	States of Operation	Date	Authorized Return on Equity
American States Water Co	AWR				
Golden State Water Co.	AWR	Water	California	3/22/2018	8.90%
American Water Works Co, Inc.	AWK				
California American Water	AWK	Water	California	3/22/2018	9.20%
Georgia American Water [2]	AWK	Water	Georgia	N/A	N/A
Hawaii American Water [2]	AWK	Water	Hawaii	11/21/2011	10.20%
Illinois American Water	AWK	Water	Illinois	12/13/2016	9.79%
Indiana American Water	AWK	Water	Indiana	1/28/2015	9.75%
Iowa American Water	AWK	Water	Iowa	2/27/2017	9.60%
Kentucky American Water [2], [3]	AWK	Water	Kentucky	8/28/2016	9.70%
Maryland American Water	AWK	Water	Maryland	5/26/2015	10.00%
Michigan American Water [2]	AWK	Water	Michigan	N/A	N/A
Missouri American Water [2], [3]	AWK	Water	Missouri	5/28/2018	10.00%
New Jersey American Water [2]	AWK	Water	New Jersey	10/29/2018	9.60%
New York American Water	AWK	Water	New York	5/18/2017	9.10%
Pennsylvania American Water [2], [3]	AWK	Water	Pennsylvania	1/1/2018	10.00%
Tennessee American Water	AWK	Water	Tennessee	11/20/2012	10.00%
Virginia American Water	AWK	Water	Virginia	5/24/2017	9.25%
West Virginia American Water	AWK	Water	West Virginia	2/24/2016	9.75%
California Water Service Group	CWT				
California Water Service Co.	CWT	Water	California	3/22/2018	8.90%
Waikoloa Water	CWT	Water	Hawaii	2/19/2015	9.89%
Kona Water Service	CWT	Water	Hawaii	6/29/2015	10.10%
Hawaii Water Service K'Anapali Division	CWT	Water	Hawaii	9/12/2016	10.10%
Middlesex Water Company	MSEX				
Tidewater Utilities, Inc.	MSEX	Water	Delaware	8/19/2014	9.75%
Middlesex Water Co.	MSEX	Water	New Jersey	3/24/2018	9.60%
York Water Company	YORW				
The York Water Co.	YORK	Water	Pennsylvania	1/9/2014	NA

Notes:

[1] Source: SNL Financial

[2] Source: Company provided data.

[3] The ROE listed is the Company's view of the ROE allowed in the case, the ROE was not disclosed in the Order or the applicable settlement agreement.

[4] Operating Subsidiaries with rate cases not covered by SNL Financial were excluded from the analysis.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Ann E. Bulkley

- 90.** Refer to the Bulkey Testimony, Attachment AEB-7.
- a. Provide any updates to the Value Line ROE Projections.
 - b. For each proxy group company, provide the most recently authorized ROE awards and the date of this award.

Response:

- a. Attachment AEB-7 contains the beta coefficients for the Combined Utility Proxy Group. Ms. Bulkley did not provide the Value Line ROE projections for the Combined Utility Proxy Group as part of her Direct Testimony. Please see KAW_R_PSCDR2_NUM089_012519_Attachment 1 for updated Value Line ROE projections for the water utilities that are in both the Water and Combined Utility Proxy Groups.
- b. Please see KAW_R_PSCDR2_NUM090_012519_Attachment 1 for the most recently authorized ROE awards of the utility operating subsidiaries of the natural gas companies in the Combined Utility Proxy Group. For the most recently authorized ROE awards of the utility operating subsidiaries of the water utility companies in the Combined Utility Proxy Group, please see KAW_R_PSCDR2_NUM089_012519_Attachment 2.

AUTHORIZED ROE ANALYSIS -- COMBINED UTILITY PROXY GROUP - NATURAL GAS UTILITIES

Company	Ticker	Type	States of Operation	Date	Authorized Return on Equity
Atmos Energy Corporation	ATO				
Atmos Energy Corporation	ATO	Natural Gas	Colorado [2]	5/3/2018	9.45%
Atmos Energy Corporation	ATO	Natural Gas	Kentucky	5/3/2018	9.70%
Atmos Energy Corporation	ATO	Natural Gas	Tennessee	12/4/2018	9.80%
New Jersey Resources Corporation	NJR				
New Jersey Natural Gas Co.	NJR	Natural Gas	New Jersey	9/23/2016	9.75%
Northwest Natural Gas Company	NWN				
Northwest Natural Gas Co.	NWN	Natural Gas	Oregon	10/26/2018	9.40%
Northwest Natural Gas Co.	NWN	Natural Gas	Washington	12/26/2008	10.10%
ONE Gas, Inc.	OGS				
Oklahoma Natural Gas Co	OGS	Natural Gas	Oklahoma	1/6/2016	9.50%
Texas Gas Service Co.	OGS	Natural Gas	Texas	9/27/2016	9.50%
South Jersey Industries, Inc.	SJI				
South Jersey Gas Co.	SJI	Natural Gas	New Jersey	10/20/2017	9.60%
Elizabethtown Gas Co.	SJI	Natural Gas	New Jersey	6/30/2017	9.60%
Southwest Gas Corporation	SWX				
Southwest Gas Corp.	SWX	Natural Gas	Arizona	4/11/2017	9.50%
Southwest Gas Corp.	SWX	Natural Gas	California (SoCal)	6/12/2014	10.10%
Southwest Gas Corp.	SWX	Natural Gas	California (NoCal)	6/12/2014	10.10%
Southwest Gas Corp.	SWX	Natural Gas	California (LkTah)	6/12/2014	10.10%
Southwest Gas Corp.	SWX	Natural Gas	Nevada (Northern)	12/24/2018	9.25%
Southwest Gas Corp.	SWX	Natural Gas	Nevada (Southern)	12/24/2018	9.25%
Spire, Inc.	SR				
Missouri Gas Energy	SR	Natural Gas	Missouri	2/21/2018	9.80%
Spire Missouri Inc.	SR	Natural Gas	Missouri	2/21/2018	9.80%

Notes:

[1] Source: SNL Financial

[2] Source: Commission Order in Atmos Energy - Colorado's 2017 Rate Case (Proceeding No. 17AL-0429G).

[3] Operating Subsidiaries with rate cases not covered by SNL Financial were excluded from the analysis.

[4] Operating Subsidiaries with rate cases that were silent with respect to traditional rate case parameters were excluded from the analysis.

[5] Excludes Operating Subsidiaries with most recent rate case prior to 2002.

**KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION**

Witness: Ann E. Bulkley

- 91.** Refer to the Bulkey Testimony. Provide all exhibits in Excel spreadsheet format with all formulas unprotected and all rows and columns fully accessible.

Response:

Please see KAW_R_PSCDR2_NUM091_012519_Attachment 1 for an Excel version of Attachments AEB-1 through AEB-13.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Scott W. Rungren

- 92.** Provide the monthly ROE for American Water and for Kentucky-American for January 2017 to the most current month available. This should be considered an ongoing request.

Response:

Please see the table below. The return on equity for American Water is not reported on a monthly basis. The returns on equity that American Water has publicly reported during the period requested are provided. For KAWC, the common equity balance used to compute each earned return shown below is the average balance for the respective twelve-month period. Starting in September 2017, KAWC's annual returns on equity reflect the impact of a land sale booked in September 2017.

<u>Month/Yr</u>	<u>American Water Earned ROE</u>	<u>KAWC Earned ROE</u>
Jan-17	N/A	9.99%
Feb-17	N/A	10.11%
Mar-17	9.7%	10.25%
Apr-17	N/A	10.39%
May-17	N/A	10.07%
Jun-17	9.4%	10.22%
Jul-17	N/A	10.23%
Aug-17	N/A	10.21%
Sep-17	9.4%	12.26%
Oct-17	N/A	11.91%
Nov-17	N/A	11.49%
Dec-17	9.9%	10.94%
Jan-18	N/A	10.97%
Feb-18	N/A	10.95%
Mar-18	10.0%	10.89%
Apr-18	N/A	10.19%
May-18	N/A	10.33%
Jun-18	N/A	10.20%
Jul-18	N/A	10.04%
Aug-18	N/A	9.85%
Sep-18	9.9%	7.93%
Oct-18	N/A	8.39%

Nov-18	N/A	8.08%
Dec-18	N/A	9.54%

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Scott W. Rungren

- 93.** Refer to the application, the Direct Testimony of Scott W. Rungren (Rungren Testimony), page 7, line 19. Provide any updates to the expected interest rate of 4.55 percent for the issuance of the \$16 million in long-term debt.

Response:

Based on Bloomberg data as of January 11, 2019, the forward curve analysis indicates that the projected rate for a 30-year Treasury at May 15, 2019, the estimated issuance date for KAWC's \$16 million debt issuance, is 3.10%. Adding the 1.12 percent spread at which American Water Capital Corp. ("AWCC"), KAWC's financing affiliate, is expected to issue above the 30-year Treasury rate results in an overall updated interest rate of 4.22 percent.

KENTUCKY-AMERICAN WATER COMPANY
CASE NO. 2018-00358
COMMISSION STAFF'S SECOND REQUEST FOR INFORMATION

Witness: Scott W. Rungren

- 94.** Refer to the Rungren Testimony, page 8, line 11. Provide support for the 1.12 percent spread.

Response:

KAWC's planned May 2019 debt financing is expected to be placed through American Water's financing subsidiary, American Water Capital Corp. ("AWCC"), which is an affiliate of KAWC. This debt issuance is expected to have a 30-year term. To determine the expected spread at which AWCC will issue above the projected 30-year Treasury rate in May 2019, Mr. Rungren used the spread at which AWCC's 30-year Senior Notes were issued at in August 2018. That spread was 1.12 percent. This spread is shown on the term sheet that American Water/AWCC filed with the SEC on August 6, 2018, the relevant portion of which is contained in the screen shot on the following page.

Free Writing Prospectus
 Filed Pursuant to Rule 433
 Registration Statement Nos.
 333-224558 and 333-224558-01

August 6, 2018

American Water Capital Corp.
 American Water Works Company, Inc.

\$625,000,000 3.750% Senior Notes due 2028
 \$700,000,000 4.200% Senior Notes due 2048

Term Sheet

Issuer:	American Water Capital Corp.
Support Provider:	American Water Works Company, Inc.
Security:	3.750% Senior Notes due 2028 (the "2028 Notes") 4.200% Senior Notes due 2048 (the "2048 Notes")
Size:	\$625,000,000 for the 2028 Notes \$700,000,000 for the 2048 Notes
Trade Date:	August 6, 2018
Settlement Date:	August 9, 2018 (T+3)*
Maturity Date:	September 1, 2028 for the 2028 Notes September 1, 2048 for the 2048 Notes
Benchmark Treasury:	UST 2.875% due May 15, 2028 for the 2028 Notes UST 3.000% due February 15, 2048 for the 2048 Notes
Benchmark Treasury Yield:	2.932% for the 2028 Notes 3.083% for the 2048 Notes
Spread to Benchmark Treasury:	+82 bps for the 2028 Notes +112 bps for the 2048 Notes
Yield to Maturity:	3.752% for the 2028 Notes 4.203% for the 2048 Notes
Coupon:	3.750% for the 2028 Notes 4.200% for the 2048 Notes
Price to Public:	99.981% for the 2028 Notes 99.946% for the 2048 Notes
Interest Payment Dates:	2028 Notes: March 1 and September 1 of each year, beginning on March 1, 2019 2048 Notes: March 1 and September 1 of each year, beginning on March 1, 2019
Redemption Provisions:	
Make whole call:	Adjusted Treasury Rate +15 bps for the 2028 Notes Adjusted Treasury Rate +20 bps for the 2048 Notes
Par call:	On or after June 1, 2028, for the 2028 Notes On or after March 1, 2048, for the 2048 Notes
CUSIP:	2028 Notes: 03040W AS4 2048 Notes: 03040W AT2
ISIN:	2028 Notes: US03040WAS44 2048 Notes: US03040WAT27
Ratings (I):	A3 (negative) / A (stable outlook) (Moody's/S&P)