PENNSYLVANIA AMERICAN WATER

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VIA eFiling

September 29, 2025

Matthew L. Homsher, Secretary
Commonwealth of Pennsylvania
Pennsylvania Public Utility Commission
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120

Re: Petition of Pennsylvania-American Water Company for Approval of a Lead Service Line Replacement Program, Related Tariff Changes, and Modification of Long-Term Infrastructure Improvement Plan

Docket No. P-2024-3050263

Dear Secretary Homsher:

In response to the Pennsylvania Public Utility Commission's Order entered August 14, 2025, in the above-referenced proceeding, specifically Ordering Paragraph 5, Pennsylvania-American Water Company ("Company") filed a copy of the Company's Water Long-Term Infrastructure Improvement Plan II for the Period January 1, 2022 through December 31, 2026 dated September 1, 2021 (Revised October 20, 2021) (Second Revised July 22, 2024) ("Second Revised Water LTIIP II"). The Company's Second Long-Term Infrastructure Improvement Plan and supplements are filed at Docket No. P-2021-3028300 ("2021 Docket").

As part of the July 22, 2024 filing at the 2021 Docket, the Company filed a red-lined version comparing the Company's Revised Water LTIIP II (dated October 20, 2021) to the Company's Second Revised Water LTIIP II (dated July 22, 2024) ("2024 Red-Lined Version PAWC Water LTIIP").

To assist in the review of the filing by the Bureau of Technical Utility Services ("TUS"), Pennsylvania-American Water Company is filing a copy of the 2024 Red-Lined Version PAWC Water LTIIP for their review of the Company's Lead Service Line Replacement Program at the above-reference docket. The Company is also providing the 2024 Red-Lined Version PAWC Water LTIIP in Word® and accompanying schedules in Excel® formats to TUS.

As shown on the enclosed Certificate of Service, a copy of the 2024 Red-Lined Version PAWC Water LTIIP is being served on all active parties in this proceeding.

Re: Petition of Pennsylvania-American Water Company for Approval of a Lead Service Line Replacement Program, Related Tariff Changes, and Modification of Long-Term Infrastructure Improvement Plan; Docket No. P-2024-3050263

Should you have any questions concerning this filing, please contact me.

Sincerely,

Erin K. Fure

Enclosures

cc: Certificate of Service
Matthew T. Lamb, P.E., Bureau of Technical Utility Services w/Encs. (**VIA** E-Mail)
Kenneth Shaffer, Bureau of Technical Utility Services w/Encs. (**VIA** E-Mail)

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of Pennsylvania-American Water Company for Approval of a Lead Service Line Replacement Program, Related Tariff Changes, and Modification of Long-Term Infrastructure Improvement Plan	:	Docket No. P-2024-3050263

CERTIFICATE OF SERVICE

I hereby certify that I have on this day served a true copy of the following document, 2024 Red-Lined Version PAWC Water LTIIP, upon the persons and in the manner indicated below, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a party).

VIA Electronic Delivery

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Dated: September 29, 2025

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Pennsylvania-American Water Company's

Water Long-Term Infrastructure Improvement Plan II

For the Period

January 1, 2022 through December 31, 2026
September 1, 2021
(Revised October 20, 2021)
(Second Revised July 22, 2024)

TABLE OF CONTENTS

INTRODUCTION

Pursuant to 66 Pa. C.S. §§1350 – 1360, 52 Pa. Code §§ 121.1-121.8, and the Pennsylvania Public Utility Commission's Supplemental Implementation Order for the Implementation of Act 11 of 2012, Docket No. M-2012-2293611 (Order entered September 21, 2016) Pennsylvania-American Water Company ("Company" or "PAWC") submitted its second Water Long-Term Infrastructure Improvement Plan ("Water LTIIP II") for the calendar years 2022-2026 on September 1, 2021 (Docket No. P-2021-3028300). On September 30, 2021, the Office of Consumer Advocate submitted comments in response to PAWC's proposed Water LTIIP II. On October 20, 2021, the Company filed revisions to Water LTIIP II. On December 16, 2021, the Commission entered an Opinion and Order approving PAWC's Revised Water LTIIP II.~~is submitting its second Water Long-Term Infrastructure Improvement Plan ("Water LTIIP II") for the calendar years 2022-2026. If approved, PAWC Water LTIIP II will be effective for the period from January 1, 2022 through December 31, 2026, which is the five-year period immediately following the expiration of PAWC's currently approved Water LTIIP I.~~[1]

During the timeframe of the Water LTIIP II, the anticipated DSIC spend profile increased for several reasons. The first is that expenses have increased due to inflation, supply chain disruptions, and restoration requirements. As an example of this increase, Table 1A shows the annual percent increase in ductile iron pipe price between 2020 and 2024. The historic annual increase of approximately 4.5% jumped and led to an increase of approximately 80% over the last 3 years. Another factor is that PAWC increased the level of investment to benefit the long-term health of the distribution networks. A Nessi Curve is presented in figures 9 and 10 of the approved Water LTIIP II and shows the theoretical need to increase replacement rates up to 140 miles per

~~[1] PAWC previously submitted and operated under existing Water LTIIP ("Water LTIIP I") approved by the Pennsylvania Public Utility Commission on May 18, 2017 at Docket No. P-2017-2585707.~~

year by 2026 or approximately 1.4%. The increased investment allowed PAWC to average close to a 1% replacement rate over 2023 and 2024, we plan to maintain this replacement rate throughout the remainder of the LTIIP period.

Table 1A – Annual increases in DI pipe costs

	2020	2021	2022	2023	2024
Percent Increase over Previous Year	5%	3.86%	20-25%	50%	6%

PAWC plans to maintain DSIC spend profile in 2025 and 2026 that is flat in comparison to 2024 with spending roughly ~~35~~50% above the LTIIP projections.

Based on the foregoing, and in accordance with PAWC's response to the 2023 AAOP data request TUS-2-M-1, PAWC submits its Second Water LTIIP II which revises Section 5 and includes PAWC's Lead Service Line Replacement Program in Appendix B in accordance with 52 Pa. Code. § 65.54(b).

PAWC, a wholly owned subsidiary American Water Works Company, Inc, ("AW"), is a Pennsylvania public utility that provides water and wastewater services to residents in Pennsylvania. As of May 31, 2021, PAWC provided water service to approximately 674,783 customers, or a population of approximately 2.3 million people. The composition of PAWC's water customer base its approximately 92% residential, 7% commercial, and 1% industrial/other. PAWC's water service territory is shown on Figure 1.

PAWC owns and operates 91 water and wastewater systems across Pennsylvania within over 409 communities in 37 counties. The water distribution system includes 39,500 hydrants, 191,600 valves and 674,000 customer meters and approximately 10,200 miles of pipe as shown on Table 1.

Figure 1 – PAWC Water Service Territory as of May 31, 2021

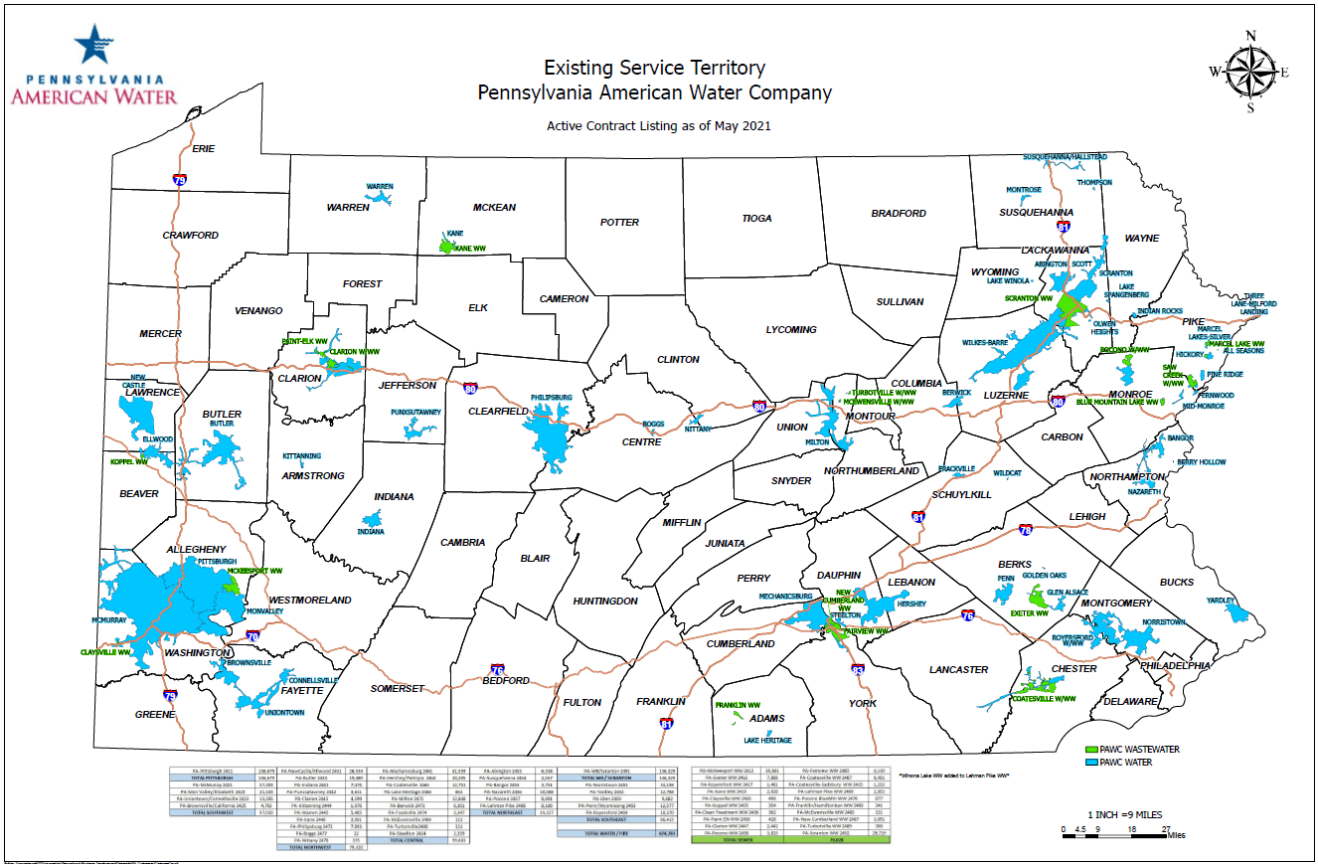


Table 1 - Water District, Areas Served, Customer Connections and Miles of Main

Water District	Areas Served	Number of Customer Connections as of EOY 2020	Miles of Main EOY 2020
Pittsburgh	The City of Pittsburgh [29th, 30th, 31st and 32nd wards and portions of the 16th, 18th, 19th, 20th and 28th wards], the Boroughs of Baldwin, Bethel Park, Brentwood, Bridgeville, Carnegie, Castle Shannon, Crafton, Dormont, Dravosburg, Green Tree, Heidelberg, Homestead, Ingram, Jefferson, Mount Oliver, Oakdale, Munhall, Pleasant Hills, Rosslyn Farms, Thornburg, West Homestead, West Mifflin, Whitaker and Whitehall and the Townships of Baldwin, Collier, Mt. Lebanon, Scott, South Fayette, South Park, Union and	136,223	1,551

	Upper St. Clair and portions of Cecil, Peters, Robinson and Nottingham Townships.		
McMurray	The City of Washington; the Boroughs of Burgettstown, Canonsburg, East Washington, Frankfort Springs, Houston, McDonald, Midway and West Middletown; the Townships of Amwell, Buffalo, Canton, Chartiers, Cross Creek, Hopewell, Independence, Jefferson, Mount Pleasant, North Franklin, North Strabane, and South Strabane; and portions of the Townships of Cecil, North Fayette, Nottingham, Fallowfield, Hanover (Washington County), Hanover (Beaver County), Peters, Robinson, Smith, Somerset, South Fayette, South Franklin, Borough of Claysville, and the Townships of Donegal and East Finley.	56,975	1,154
Elizabeth (MonValley)	The Cities of Clairton and Monongahela; the Boroughs of Elizabeth, Glassport, Jefferson, Liberty, Lincoln, New Eagle, and West Elizabeth; and the Townships of Carroll, Elizabeth, and Forward.	21,510	379
Uniontown/Connellsville	The City of Uniontown; and portions of Dunbar, Menallen, North Union, South Union and German Townships. The City of Connellsville; South Connellsville Borough; Connellsville Township and a portion of Bullskin Township.	13,567	231
Brownsville	The Boroughs of Brownsville, West Brownsville, California, Coal Center, and the Townships of Brownsville, Luzerne, Jefferson, and Redstone and East Pike Run.	4,714	111
New Castle/Ellwood	Lawrence County The City of New Castle and the Boroughs of New Beaver and South New Castle and the Townships of Hickory, Neshannock, Shenango, Taylor and Union; and portions of the Townships of Mahoning and North Beaver County The Boroughs of Ellwood City, Koppel and portions of the Borough of Big Beaver and the Townships of Franklin and portions of the Township of North Sewickley Lawrence County The Boroughs of Ellport and Ellwood City and portions of the Townships of Perry and Wayne.	26,355	526

Butler	The City of Butler; the Boroughs of East Butler; Connoquenessing, and Saxonburg; and portions of Butler, Center, Connoquenessing, Donegal, Forward, Franklin, Oakland, Jackson, Jefferson, Lancaster, Penn, Clinton and Summit Townships.	19,423	327
Indiana	The Borough of Indiana; and portions of White Township.	7,480	119
Punxsatawney	The Boroughs of Punxsutawney and Big Run, and portions of Bell, Gaskill, Young and McCalmont Townships.	3,614	86
Clarion	The Boroughs of Clarion, Shippensville, Sligo and Strattanville, the Township of Clarion and portions of Elk, Limestone, Knox, Monroe, Paint, Piney and Farmington Townships.	4,233	127
Kittanning	The Boroughs of Kittanning and Applewold, and portions of Manor and Rayburn Townships.	1,963	21
Warren	The City of Warren and portions of the Townships of Conewango, Meade, Glade and Pleasant.	5,444	88
Kane	The Borough of Kane and a portion of Wetmore Township.	2,077	42
Philipsburg	The Boroughs of Philipsburg, South Philipsburg, Wallaceton, Chester Hill, and Osceola Mills; and portions of Rush, Morris, Decatur, Graham, Walker, Bradford, and Boggs Townships.	7,848	299
Mechanicsburg	The Boroughs of Camp Hill, Lemoyne, New Cumberland, Shiremanstown, West Fairview and Wormleysburg; the Townships of East Pennsboro, Hampden, Lower Allen and portions of the Townships of Silver Spring, Fairview, Newberry and Upper Allen.	41,484	535
Hershey/Palmyra	The Borough of Palmyra and portions of the Townships of Annville, North and South Annville, North and South Londonderry, all in Lebanon County. In Dauphin County, portions of the Townships of South Hanover, West Hanover, Londonderry, Conewago and Derry.	20,142	318

Lake Heritage	A private community of Lake Heritage, which includes portions of the Townships of Mt. Joy, Mt. Pleasant and Straban in Adams County.	860	13
Steelton	Borough of Steelton and portions of Swatara Township.	2,354	28
Milton	Boroughs of Lewisburg, Milton, Northumberland and Watsontown; and in all of East and West Chillisquaque, Kelly, Buffalo, East Buffalo, Turbot, White Deer, Point, and Delaware Townships; and portions of Upper Augusta and Gregg Townships.	12,809	238
Berwick	Berwick, Nescopeck, and Briar Creek Boroughs and Briar Creek and Salem Townships.	6,303	82
Frackville (Incl. Wildcat)	The Borough of Frackville and portions of West Mahonay, Mahonay, New Castle, Butler, and Walker Townships.	2,341	27
McEwensville	Borough of McEwensville.	131	3
Turbotville	Borough of Turbotville and portions of Lewis Township.	322	5
Boggs	Boggs Township, Centre County.	22	4
Nittany	Portions of Walker and Porter Townships, Centre County.	572	15
Abington	The Boroughs of Clarks Summit, Clarks Green and Dalton; and portions of Abington, South Abington and Glenburn, Waverly and Overfield Townships.	6,288	136
Susquehanna	The Boroughs of Susquehanna, Lanesboro, Hallstead, Great Bend, Montrose and Thompson; and portions of Harmony, Oakland, Great Bend and Bridgewater Townships.	2,536	62
Bangor	The Boroughs of Bangor and Roseto and portions of Washington, Plainfield, Lower Mount Bethel, and Upper Mount Bethel Townships.	3,747	57
Nazareth	The Boroughs of Nazareth, Wind Gap, Pen Argyl, Stockertown, Tatamy, Belfast, and portions of the adjacent Townships of Ross, Bushkill, Plainfield, Forks, Upper and Lower Nazareth, and parts of Palmer.	10,060	154

Pocono	Pocono Country Place, Pocono Farms East, Pocono Farms, Stillwater Lake Estates, Lexington Woods, the Village of Tobyhanna and Mt. Pocono Borough.	8,453	156
Lehman Pike	Pike County - portions of Delaware, Lehman and Westfall Townships. Monroe County- Middle Smithfield Township, a portion of Stroud and Smithfield Townships. All Seasons, Birch Acres, Blue Mountain Lakes, Country Club of the Poconos, Fernwood, Marcel Lakes, Milford Landing, Mt. Top Estates, Pine Ridge, Saw Creek Estates, Wild Acres Developments.	7,961	173
Wilkes Barre/Scranton	The Cities of Carbondale and Scranton. The Boroughs of Archbald, Blakely, Dickson City, Dunmore, Jermyn, Jessup, Mayfield, Moosic, Old Forge, Olyphant, Taylor, Throop, and Vandling. The Townships of Carbondale, North Abington, South Abington, and Scott. A portion of the Township of Roaring Brook. The Villages of Richmondale (Fell Twp.) and Simpson (Fell Twp.) The Cities of Nanticoke, Pittston and Wilkes Barre. The Boroughs of Ashley, Avoca, Courtdale, Dallas, Dupont, Duryea, Edwardsville, Exeter, Forty Fort, Hughestown, Kingston, Laflin, Larksville, Laurel Run, Luzerne, Plymouth Pringle, Shickshinny, Sugar Notch, Swoyersville, Warrior Run, West Pittston, West Wyoming, Wyoming, and Yatesville. The Townships of Fairview, Hanover, Hunlock, Jenkins, Kingston, Newport, Pittston, Plains, Plymouth, Rice, Wilkes Barre, Wright, and portions of the Townships of Conyngham, Jackson, Jefferson, Salem and Union. The Borough of Forest City. The Village of Browndale (Clinton Twp.).	136,219	1766
Norristown	The Boroughs of Norristown and Bridgeport, part of the Townships of Whitpain, West Norriton, Worcester, Plymouth, Lower Providence, East Norriton, East Pikeland, Upper Merion, Perkiomen and Whitemarsh.	33,149	383
Yardley	The Borough of Yardley and adjacent territory in Lower Makefield and Falls Townships.	12,764	191

Glen Alsace (incl. Golden Oaks)	Berks County - the Borough of St. Lawrence. The Townships of Amity, Exeter and Ruscombmanor.	9,462	143
Penn/Wyomissing	Berks County - the Boroughs of Sinking Spring and Wyomissing Hills. The Townships of Spring, Lower Heidelberg, South Heidelberg and Cumru.	12,502	161
Royersford	Montgomery County - the Borough of Royersford. The Townships of Upper Providence and Limerick and a portion of the Township of Lower Pottsgrove. Chester County - the Borough of Spring City. The Townships of East Vincent, West Vincent, East Pikeland and Schuylkill.	18,218	279
Coatesville (includes Valley Township Water System's 22 mi of main/1,671 customers)	The City of Coatesville. The Boroughs of Parkesburg, Atglen and South Coatesville and portions of the Townships of Sadsbury, Caln, East Fallowfield, Valley, West Sadsbury and West Caln. The Borough of Quarryville and the Townships of Bart, Colerain, Eden and Sadsbury.	14,341	220
TOTAL		**674,466**	**10,213**

Note: The tentative acquisition of Valley Township Water System by PAWC is anticipated to add approximately 1,671 customers and 21.84 miles of water main in November 2021.

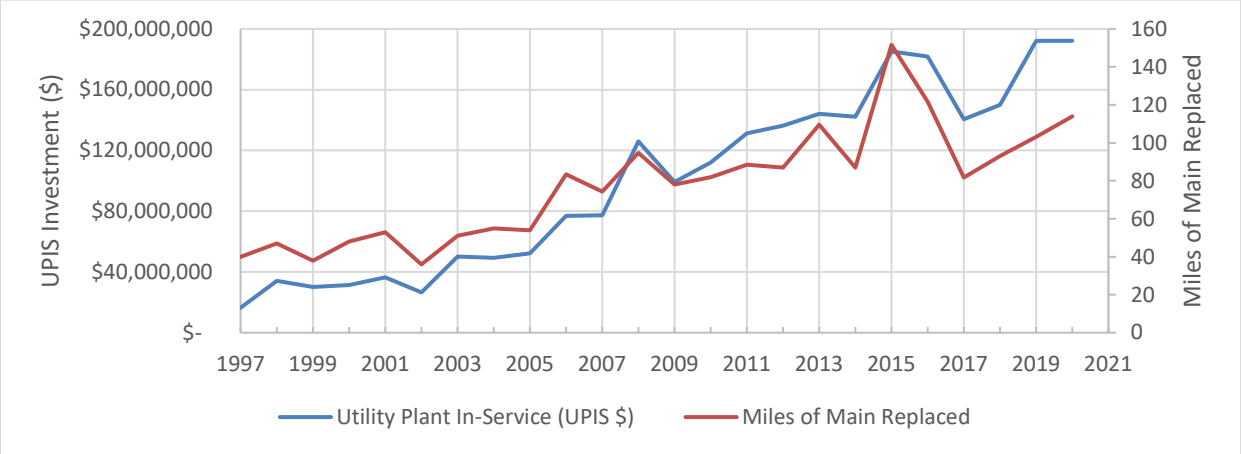
The condition of the water systems varies, depending on age, material, local conditions and quality of initial design or installation. Some systems require significant capital investment to maintain adequate, efficient, safe, reliable and reasonable service for existing customers. While some systems contain newer infrastructure and thereby require less investment, making capital infrastructure investment at the right time will maintain desired service levels and avoid replacements while repairs are still cost-effective. As the water system begins to reach the end of its useful life, factors such as increased main break frequencies, water quality degradation, loss of hydraulic capacity or pressure, and facility failures can occur which will diminish customer service quality and satisfaction, reliability, and can impact safety and regulatory compliance. As indicated in the Company's Water LTIIP I, age is not the only criteria. In many cases, very old pit-cast, cast

iron pipe is still in good condition and reliable; while newer spun cast pipe, sees a higher main break rate.

By Order entered August 26, 1996, the Commission permitted PAWC to establish its water DSIC program in order to accelerate the rehabilitation or replacement of aging infrastructure and improve customer service. *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement Establishing a Distribution System Improvement Charge*, Docket No. P-00961031. The Commission's authority to authorize the implementation of DSIC was confirmed by the General Assembly when it enacted into law Section 1307(g) of the Pennsylvania Public Utility Code under the Act of December 18, 1996, P.L. 1061, No. 156, § 1. PAWC implemented its DSIC program, effective January 1, 1997, with a cap of 5.0% of billed revenues. By Order entered August 14, 2007, the Commission permitted PAWC to increase its DSIC cap to 7.5% of billed revenues. *Petition of Pennsylvania-American Water Company for Approval to Implement a Tariff Supplement to Tariff Water-Pa P.U.C. No. 4 Revising Distribution System Improvement Charge*, Docket No. P-00062241.

As previously ordered by the Commission, PAWC has focused on smaller diameter mains and increased main replacement in the Pittsburgh district. Water LTIIP II continues to follow the guidance and requirements of the Commission. As shown on Figure 2 below, capital investment levels and the miles of pipe replaced has steadily increased over the past 20 years. The increase in footage replaced is consistent, though somewhat short of the NESSIE Model presented later in this plan.

Figure 2 – Historical Main Replacement (1997 – 2021)

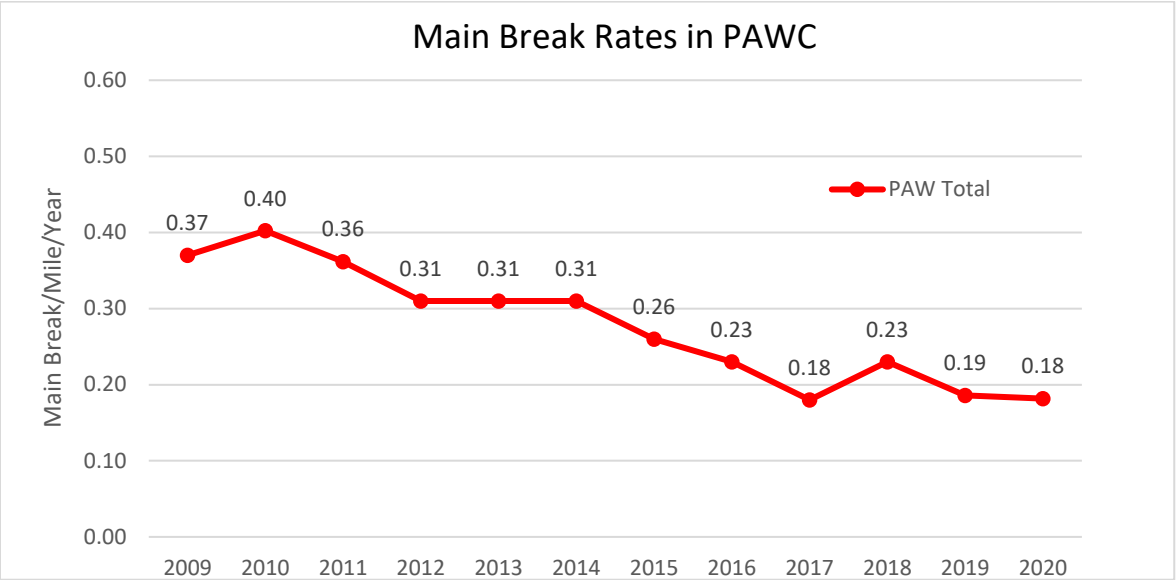


Because yearly capital investment fluctuations occur due to other non-DSIC related needs and Utility Plant In-Service spend (UPIS $) are reflective of expenditures recognized when the property is placed in service, and not always on a calendar year basis, a rolling 4-year average, as shown on Figure 2, is utilized to demonstrate the steady acceleration of capital investment from approximately $20 Million in 1997, to the current DSIC investment level of over $160 Million based on a rolling 4-year average. This is an eight-fold increase over a 20-year timeframe.

While the overall impact has been positive, it is important to note the changes relative of the UPIS and Miles of Main lines. This issue is also notable in the Figure 2 with the divergence of Miles of Main Replaced against the UPIS line. The cost per foot or per mile has escalated significantly. This cost escalation, in part, has been noted in the news with the significant recent escalation in cost of material. However, that is only a portion of the issue. Many municipalities have begun requiring full curb-to-curb replacement of asphalt; where historically, the Company has been able to restore the trench area with perhaps a two-foot area on each side of the trench. The curb-to-curb requirement results in more cost to repave and restore than the pipe installation cost.

Still, notably over the 2009-2020 timeframe, the total system-wide main break frequency, expressed in main breaks per mile of main per year, has decreased by roughly 50% as shown on Figure 3 below. While a great improvement, the average is still well above the national average break rate of 0.14 breaks/mile/year (Utah State Study 2018 Steven Folkman). Therefore, the continued efforts to replace pipe is important to continue lowering the break rate.

Figure 3 – Historical Main Breaks Per Mile Per Year (2009 - 2020)



Building on this progress, the Water LTIIP II will establish how PAWC plans to continue to maintain a previously accelerated rate of infrastructure replacement to rehabilitate, improve, and replace aging infrastructure. Discussed in Water LTIIP II are the types and age of property eligible for water DSIC recovery; schedule for its planned rehabilitation and replacement; location of eligible property; reasonable estimate of the quantity of infrastructure to be improved; projected annual expenditures and measures to ensure cost effectiveness; manner in which replacement of aging infrastructure will maintain safe and reliable service; workforce management and training program; and description of outreach to other utilities, PennDOT, and other governmental agencies to coordinate work and minimize disruptions to customers.

Section 1 – Identification of Types and Age of Eligible Property Owned and Operated by the Utility for Which it is Seeking DSIC Recovery

An inventory of all eligible property, as defined in 66 Pa. C.S. § 1351 - (4), is provided in this section. PAWC has developed and is applying MapCall as the work order management system and Geographic Information Systems (GIS) as the spatial component and record of issues related to specific mains as part of its Enterprise Asset Management (EAM) Program. Water assets, such as mains, valves, hydrants, meter pits, curb stops, and customer premises are spatially located and attributed with information about the asset. GIS and MapCall data are linked and updated continuously to include system changes, such as replacement of pipes or expansion of the water system.

GIS and MapCall workorder data are used to assist in identifying types and age of eligible assets. Records of main breaks by location and type of pipe are used to identify specific mains and areas of main that are less reliable.

Water DSIC-eligible property consists of the following categories, with recoverable costs incurred to rehabilitate, or replace eligible property completed and placed in service as noted below:

- Mains and Valves
- Services
- Meters
- Fire Hydrants
- Main cleaning and relining
- Unreimbursed highway relocation costs
- Main Extensions to eliminate dead ends

- Main Extensions to solve regional water supply problems that have documented significant health and safety concerns

The following tables and figures summarize eligible property for each water district:

Table 2 – Pipe Material Type by District

Table 3 – Finished Water Main / Pipe Diameter by District

Table 4 – Number of Customer Meters by District

Table 5 – Hydrants and Valves by District

Figure 4 – Pipe Material as a Percentage of Total Length

Figure 5 – Pipe Size as a Percentage of Total Length

Figure 6 – Pipe Material Type by Percentage

Figure 7 – Pipe Age Distribution as a Percentage of Total Length

Table 2 – Pipe Material Type by District

DISTRICT	TOTAL LENGTH OF MATERIAL TYPE (Mile)											
	TR	CEM	CI	COPPER	DI	GALV	HDPE	PLASTIC-OTHER	PVC	ST	OTH	TOTAL (Mile)
Abington	0.49%		27.85%	0.15%	68.58%	0.09%	0.86%	0.51%	0.87%	0.02%	0.57%	136
Bangor	6.58%		53.94%		37.76%		0.10%	1.22%	0.40%			57
Berwick	10.86%		49.47%	0.08%	39.14%	0.10%		0.05%	0.24%		0.07%	82
Boggs					98.49%				1.51%			4
Brownsville	1.04%		20.73%	1.55%	65.64%	0.24%	4.57%		6.24%			111
Butler	18.38%	0.39%	20.26%	0.07%	51.79%		0.69%		8.36%		0.05%	327
Clarion	9.12%	0.32%	2.23%	0.16%	77.67%	0.06%	0.51%	0.42%	9.43%		0.07%	127
Coatesville and Valley	8.61%		15.95%	0.10%	69.29%	0.04%	0.24%	0.03%	5.68%		0.06%	220
Connellsville/Uniontown	4.45%		26.59%	0.72%	61.90%	0.23%	1.89%		4.20%		0.02%	231
Elizabeth (Mon-Valley)	2.68%	1.54%	41.54%	1.16%	51.33%	0.18%	0.93%		0.55%	0.07%	0.02%	379
Frackville	9.45%	0.45%	27.02%	0.35%	58.61%				4.00%		0.12%	27
Glen Alsace	0.62%		16.52%	0.13%	81.99%	0.07%		0.47%	0.20%			143
Hershey	5.05%		21.40%	0.13%	71.75%	0.11%		0.14%	1.42%			318
Indiana	30.56%	0.89%	17.61%	0.37%	50.22%		0.04%	0.05%	0.18%		0.09%	119
Kane	27.72%		17.06%	0.94%	53.47%		0.59%		0.22%			43
Kittanning	8.14%		59.16%	0.16%	28.55%		2.13%	1.07%	0.79%			21
Lake Heritage			95.68%		4.32%							13
Lehman Pike			7.58%	0.74%	36.84%			5.67%	44.86%		4.31%	173
McEwensville			2.28%	0.35%	0.01%				97.36%			3
McMurray	3.30%	2.63%	17.54%	0.42%	71.72%	0.10%	2.03%		2.14%	0.11%		1,154
Mechanicsburg	6.11%	1.99%	26.08%	0.20%	65.05%	0.15%		0.02%	0.37%	0.02%		535
Milton	12.90%	1.92%	27.58%	0.31%	54.61%	0.01%	0.12%		2.23%		0.29%	238
Nazareth	1.18%	0.11%	49.79%	0.76%	47.53%	0.15%	0.03%	0.16%	0.21%		0.07%	154
New Castle/Ellwood	5.59%	1.27%	26.94%	0.22%	63.27%	0.10%	0.67%	0.03%	1.77%	0.13%		526
Nittany	21.71%			2.20%	33.08%	1.30%			41.71%			15
Norristown	8.15%	0.72%	28.44%	0.18%	62.36%		0.01%		0.11%	0.02%		383
Penn	0.52%		31.60%	0.04%	67.60%	0.08%		0.06%	0.10%			161
Philipsburg	9.73%	0.46%	4.57%	0.19%	70.46%	0.09%	0.08%	0.03%	14.25%		0.14%	299
Pittsburgh	0.19%	4.63%	32.29%	0.22%	57.74%	0.17%	0.80%		0.07%	0.05%	3.84%	1,551
Pocono	4.08%		0.68%	0.07%	41.47%				53.41%		0.30%	156
Punxsutawney	5.85%		20.00%	1.18%	65.97%	0.06%	0.15%		6.67%		0.13%	86
Royersford	4.32%		4.22%		91.28%	0.07%			0.04%		0.07%	279
Steelton			52.76%	0.16%	46.99%	0.09%						28
Susquehanna/Hallstead	13.26%		24.59%	0.72%	61.06%	0.08%	0.08%		0.21%			62
Turbotville	6.68%		59.08%		26.37%				7.88%			5
Warren	31.63%	0.18%	17.04%	0.08%	50.16%		0.36%				0.56%	88
Wilkes-Barre/Scranton	0.01%	0.02%	53.19%	0.14%	44.40%	0.03%	0.04%	0.04%	1.82%	0.17%	0.14%	1,766
Yardley	22.37%		2.45%	0.06%	75.12%							191
TOTAL (Miles)	496	138	2,940	30	6,053	9	60	15	371	6	73	10,212

Table 3 – Finished Water Main / Pipe Diameter by District

DISTRICT	TOTAL LENGTH BY DIAMETER (Mile)						
	≤ 2"	> 2" and ≤ 4"	6"	8"	10" and 12"	≥ 14"	TOTAL (Mile)
Abington	2.34%	3.30%	18.23%	65.22%	10.11%	0.79%	**136**
Bangor	2.27%	6.00%	39.27%	36.64%	12.19%	3.63%	**57**
Berwick	2.92%	22.70%	21.21%	35.10%	13.87%	4.21%	**82**
Blue Mountain/Nazareth	2.07%	6.85%	25.95%	37.42%	19.94%	7.77%	**154**
Boggs	1.80%	0.12%	4.68%	3.73%	88.44%	1.23%	**4**
Brownsville	8.28%	8.16%	11.40%	41.70%	23.71%	6.74%	**111**
Butler	1.87%	3.80%	19.53%	45.13%	23.74%	5.94%	**327**
Clarion	1.45%	0.48%	11.93%	41.71%	41.41%	3.01%	**127**
Coatesville	0.19%	2.89%	14.49%	44.47%	24.51%	13.45%	**220**
Connellsville/Uniontown	5.53%	5.94%	16.27%	45.36%	20.71%	6.18%	**231**
Elizabeth (Mon-Valley)	6.23%	2.85%	27.25%	40.67%	15.21%	7.80%	**379**
Frackville	2.36%	9.91%	18.48%	48.62%	20.63%		**27**
Glen Alsace	0.25%	3.10%	17.04%	49.10%	28.57%	1.93%	**143**
Hershey	0.76%	3.26%	18.42%	36.67%	31.19%	9.70%	**318**
Indiana	1.09%	6.12%	17.55%	58.19%	12.30%	4.75%	**119**
Kane	1.37%	1.92%	11.35%	73.30%	11.83%	0.23%	**43**
Kittanning	3.33%	8.47%	32.85%	32.10%	20.45%	2.79%	**21**
Lake Heritage		41.79%	35.89%	22.31%			**13**
Lehman Pike	4.11%	23.12%	35.51%	32.97%	4.22%	0.06%	**173**
McEwensville	0.86%	32.35%	65.20%			1.60%	**3**
McMurray	2.89%	3.50%	9.26%	47.61%	29.22%	7.52%	**1,154**
Mechanicsburg	0.68%	3.03%	20.03%	41.73%	23.29%	11.24%	**535**
Milton	0.88%	0.99%	21.37%	41.94%	21.34%	13.47%	**238**
New Castle/Ellwood	2.35%	3.30%	22.69%	41.82%	20.82%	9.01%	**526**
Nittany	21.96%	16.48%	22.85%	21.23%	17.49%		**15**
Norristown	0.53%	3.41%	16.49%	54.81%	17.46%	7.30%	**383**
Penn	0.18%	3.93%	29.87%	39.99%	24.97%	1.06%	**161**
Philipsburg	3.93%	6.08%	14.36%	56.64%	16.32%	2.67%	**299**
Pittsburgh	3.79%	2.64%	15.48%	59.04%	8.46%	10.60%	**1,551**
Pocono	6.13%	38.48%	19.56%	25.84%	9.96%	0.02%	**156**
Punxsutawney	5.52%	6.87%	13.83%	40.49%	33.30%		**86**
Royersford	0.06%	1.92%	8.20%	47.64%	37.38%	4.81%	**279**
Steelton	0.25%	7.93%	27.11%	35.64%	24.47%	4.60%	**28**
Susquehanna/Hallstead	2.93%	7.60%	13.72%	39.79%	35.48%	0.48%	**62**
Turbotville	5.60%	15.07%	74.40%	4.93%			**5**
Warren	1.21%	7.74%	27.77%	40.88%	12.92%	9.49%	**88**
Wilkes-Barre/Scranton	1.85%	7.02%	21.38%	40.22%	17.11%	12.42%	**1,766**
Yardley	0.13%	0.86%	21.61%	56.91%	15.88%	4.62%	**191**
TOTAL (Miles)	**255**	**532**	**1,865**	**4,711**	**1,987**	**840**	**10,212**

Table 4 – Number of Customer Meters by District

DISTRICT	NUMBER OF METERS
Abington	6,282
Bangor	3,748
Berwick	6,301
Boggs	24
Brownsville	4,687
Butler	19,370
Clarion	4,229
Coatesville and Valley	14,333
Connellsville/Uniontown	13,566
Elizabeth (Mon-Valley)	21,514
Frackville	2,335
Glen Alsace	9,484
Hershey	20,291
Indiana	7450
Kane	2079
Kittanning	1962
Lake Heritage	861
Lehman Pike	7843
McEwensville	130
McMurray	56,951
Mechanicsburg	41,646
Milton	12,844
Nazareth	10,026
New Castle/Ellwood	26,317
Nittany	568
Norristown	33,172
Penn	12,415
Philipsburg	7,873
Pittsburgh	136,465
Pocono	8,469
Punxsutawney	3,604
Royersford	18,116
Steelton	2,362
Susquehanna/Hallstead	2,535
Turbotville	321
Warren	5,421
Wilkes-Barre/Scranton	135,673
Yardley	12,793
TOTAL	**674,060**

Table 5 – Hydrants and Valves by District

DISTRICT	NUMBER OF PUBLIC HYDRANTS	NUMBER OF VALVES
Abington	386	2,210
Bangor	176	1,032
Berwick	238	1,637
Boggs	15	51
Brownsville	400	1,872
Butler	1,415	5,421
Clarion	501	1,937
Coatesville and Valley	1,025	3,642
Connellsville/Uniontown	715	4,601
Elizabeth (Mon-Valley)	1,509	5,953
Frackville	127	647
Glen Alsace	841	2,825
Hershey	1,316	7,622
Indiana	327	2,312
Kane	163	832
Kittanning	98	490
Lake Heritage	0	124
Lehman Pike	303	2,483
McEwensville	9	69
McMurray	4,282	16,211
Mechanicsburg	2,236	11,923
Milton	796	4,740
Nazareth	624	3,114
New Castle/Ellwood	1,888	8,944
Nittany	32	147
Norristown	1,651	7,421
Penn	725	3,199
Philipsburg	439	4,102
Pittsburgh	6,724	30,957
Pocono	168	1,581
Punxsutawney	211	1,229
Royersford	1,519	5,677
Steelton	211	754
Susquehanna/Hallstead	169	946
Turbotville	24	81
Warren	324	1,605
Wilkes-Barre/Scranton	7,171	39,266
Yardley	745	4,033
TOTAL	**39,503**	**191,690**

Figure 4 – Pipe Material as a Percentage of Total Length

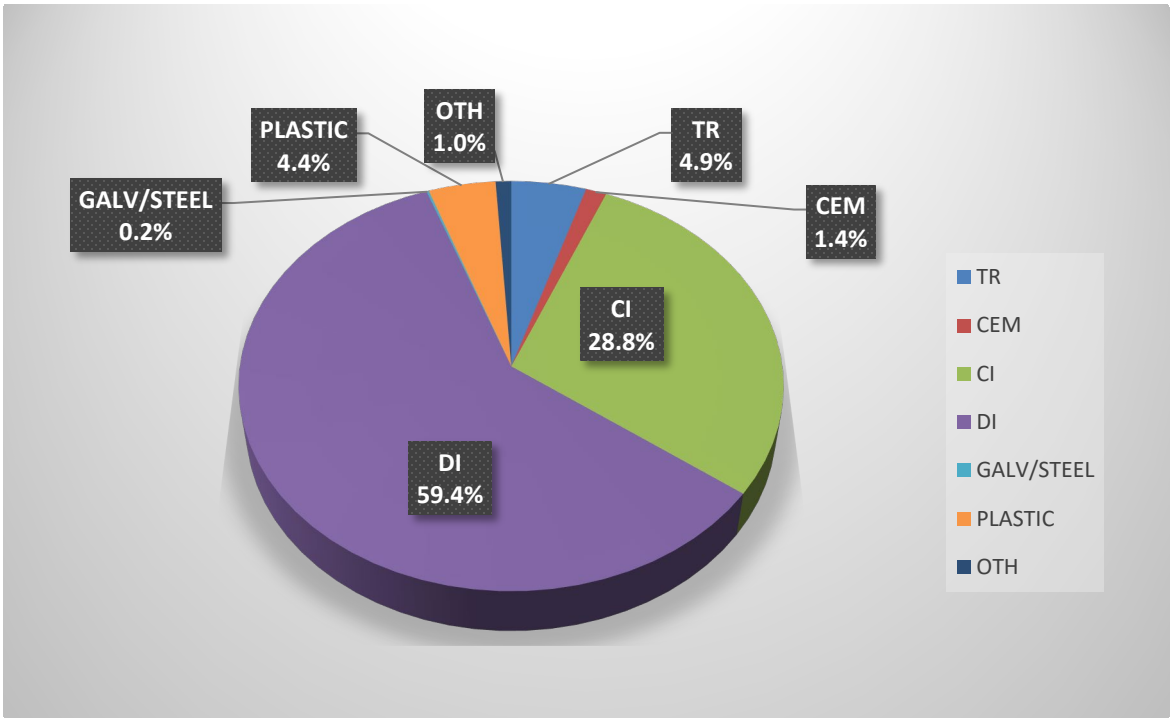
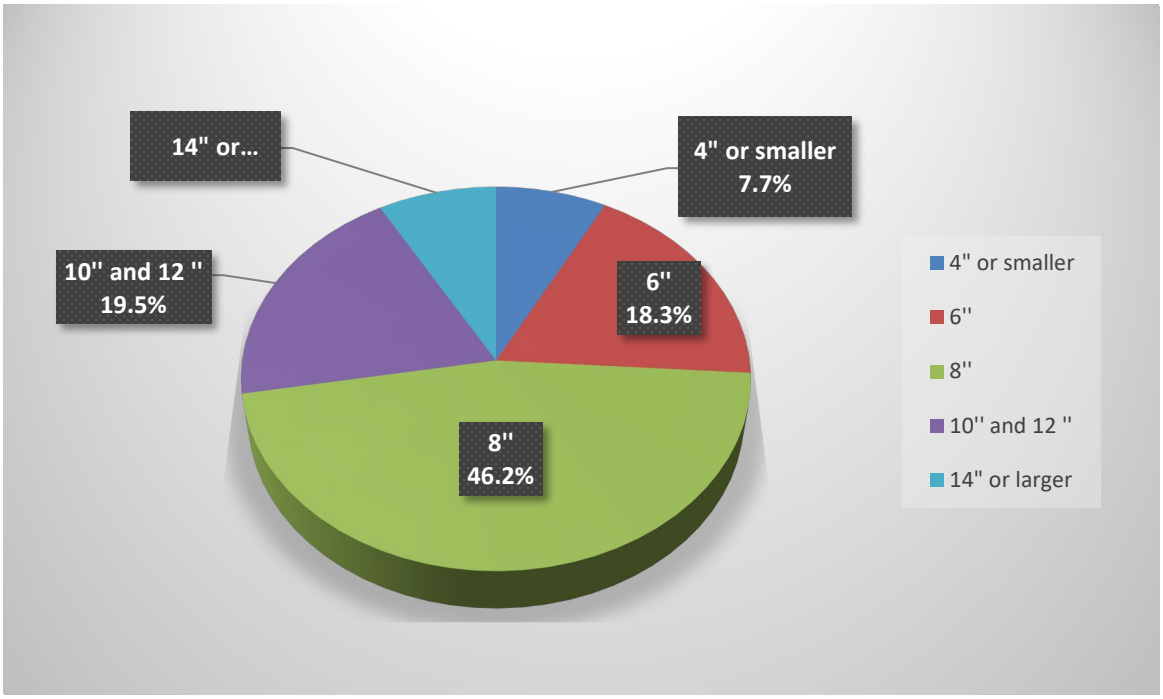


Figure 5 – Pipe Size as a Percentage of Total Length



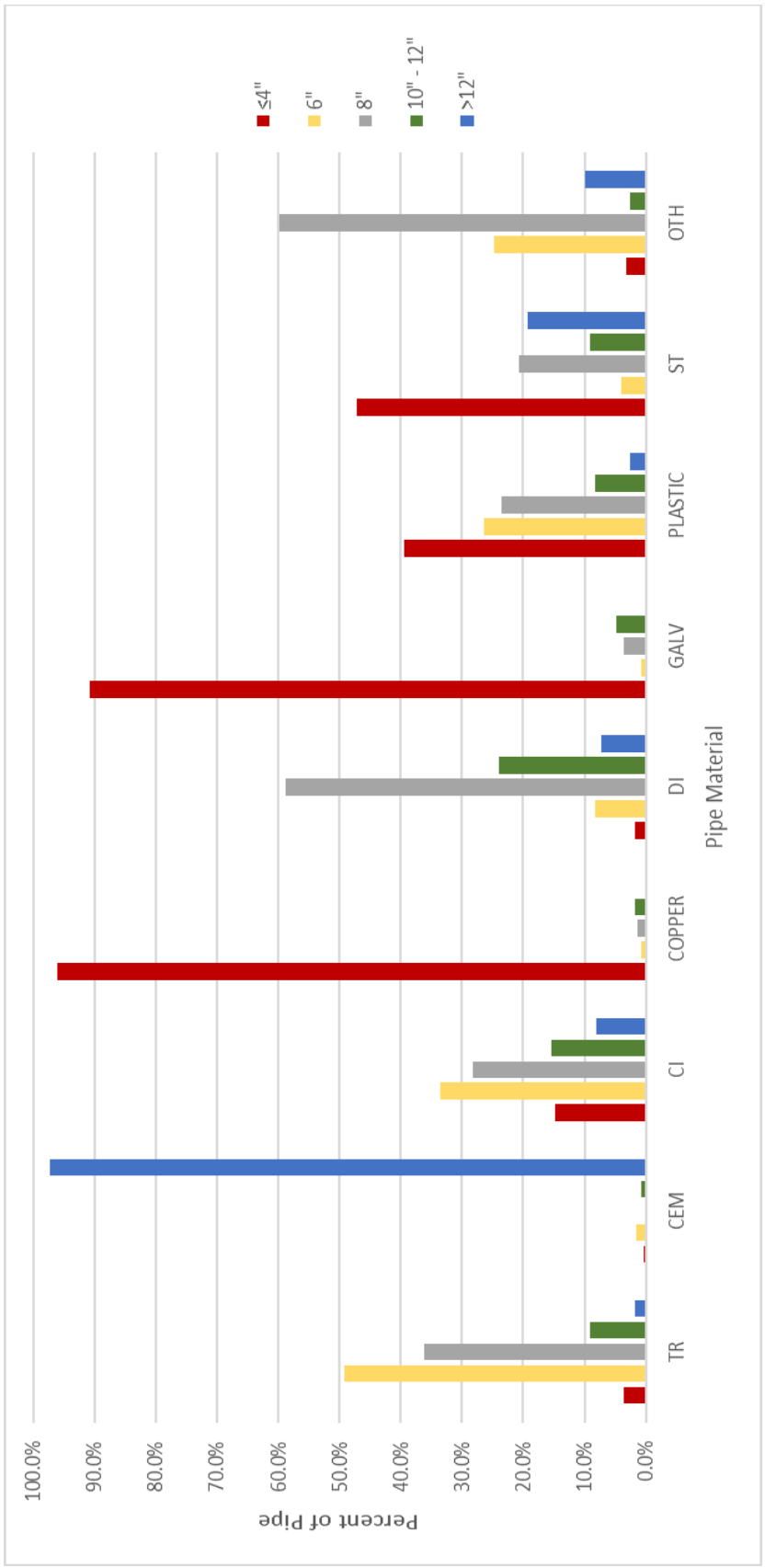


Figure 6 – Pipe Material Type by Percentage

Over 59% of the distribution system piping is comprised of ductile iron ("DI") pipe. Cast iron ("CI") pipe accounts for approx. 28.8% by length, and the remainder of the system consists of other material types such as galvanized/steel, plastic, transite ("TR"), and concrete.

Over the last 10 years, the accelerated main replacement program has changed both the size and material composition of the distribution systems. The amount of small diameter mains has decreased from 35% to 7.7%, and the percentage of DI pipe has increased from 40.6% to 59.4%. Correspondingly over the same timeframe, the amount of CI pipe has decreased from 42.6% to 28.8% along with a five-fold decrease in the amount of galvanized pipe.

Figure 7 – Pipe Age Distribution as a Percentage of Total Length

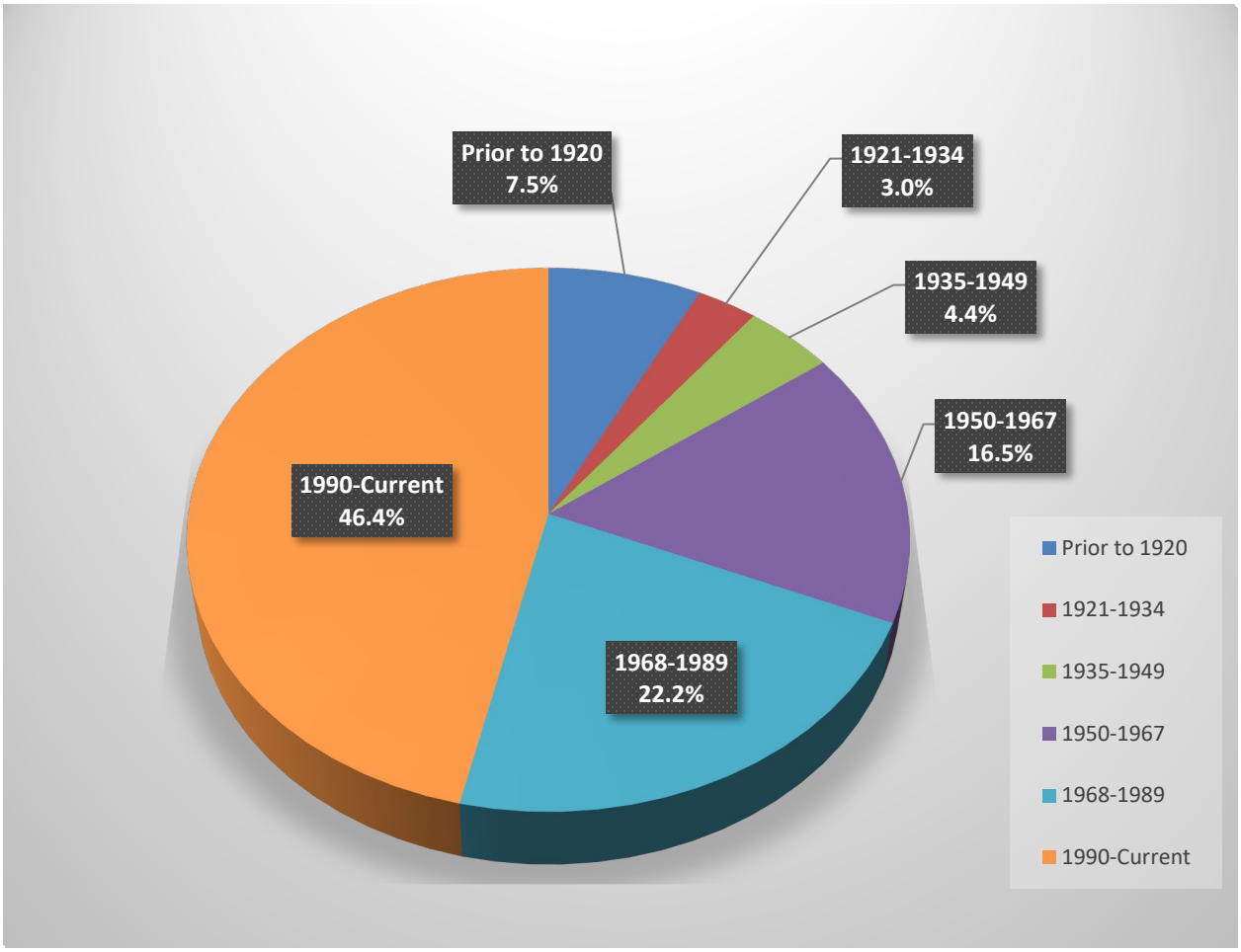


Table 6 – Pipe Age by District

DISTRICT	1848-1920	1921-1934	1935-1949	1950-1959	1960-1967	1968-1976	1977-1989	1990-Current	TOTAL (Mile)
Abington	0.1%		3.7%	1.9%	15.4%	13.5%	14.0%	49.5%	**136**
Bangor	5.0%	2.9%	10.4%	17.9%	20.1%	6.3%	15.0%	22.0%	**57**
Berwick	7.7%	25.5%	4.8%	11.3%	8.4%	5.9%	5.5%	30.4%	**82**
Blue Mountain/Nazareth	5.9%	11.7%	8.6%	10.0%	6.1%	9.4%	3.9%	43.4%	**154**
Boggs						98.2%	1.5%	0.3%	**4**
Brownsville			4.5%	8.3%	9.7%	7.9%	10.3%	59.5%	**111**
Butler	0.5%	2.2%	5.2%	8.4%	6.0%	15.3%	12.7%	49.1%	**327**
Clarion	0.9%	0.7%	1.1%	3.9%	1.7%	11.0%	4.7%	74.9%	**127**
Coatesville	8.2%		2.6%	5.9%	1.5%	12.6%	5.2%	62.4%	**198**
Connellsville/Uniontown	4.0%	2.1%	14.5%	5.4%	2.9%	4.8%	18.4%	47.1%	**231**
Elizabeth (Mon-Valley)			2.1%	37.8%	7.1%		6.6%	46.1%	**379**
Frackville	7.8%	10.4%	1.3%	2.4%	4.1%	7.6%	17.7%	48.3%	**27**
Glen Alsace				3.6%	6.5%	7.5%	14.7%	66.9%	**143**
Hershey			7.3%	7.7%	8.6%	1.8%	14.4%	59.8%	**318**
Indiana			12.3%	9.7%	12.2%	18.5%	9.7%	36.8%	**119**
Kane	11.1%		1.8%	8.9%	9.1%	14.5%	5.2%	49.4%	**43**
Kittanning	32.3%	4.3%	7.8%	5.7%	5.7%	12.1%	10.3%	21.7%	**21**
Lake Heritage					97.7%			2.3%	**13**
Lehman Pike				0.2%	14.3%	34.5%	12.8%	37.3%	**173**
McEwensville						0.1%	83.3%	16.5%	**3**
McMurray	0.2%	0.1%	0.5%	9.0%	9.1%	9.9%	10.8%	59.0%	**1,154**
Mechanicsburg	1.7%	0.8%	3.9%	12.2%	8.0%	9.6%	15.7%	48.0%	**535**
Milton	11.0%	1.3%	5.1%	10.7%	10.1%	9.9%	13.6%	38.3%	**238**
New Castle/Ellwood	10.4%	3.1%	5.9%	7.1%	5.1%	4.2%	6.2%	56.7%	**526**
Nittany				1.2%	23.1%		33.6%	42.2%	**15**
Norristown	8.5%	6.2%	3.7%	10.0%	9.9%	10.4%	16.7%	33.5%	**383**
Penn				2.4%	4.0%	19.8%	20.7%	53.0%	**161**
Philipsburg		0.4%	4.4%	1.0%	8.0%	6.0%	19.2%	60.9%	**299**
Pittsburgh	6.1%	5.2%	9.3%	10.9%	7.6%	8.2%	15.1%	36.6%	**1,551**
Pocono	0.2%					65.1%	0.4%	34.1%	**156**
Punxsutawney	9.0%	8.4%	1.6%	1.3%	6.2%	9.4%	24.9%	38.1%	**86**
Royersford	1.0%	0.5%	0.7%	1.5%	2.2%	2.5%	7.9%	83.6%	**279**
Steelton	16.1%	14.6%		0.9%	0.8%	21.3%	9.6%	36.7%	**28**
Susquehanna/Hallstead	8.6%	2.7%	10.9%	5.8%	7.1%	3.3%	12.5%	48.9%	**62**
Turbotville								3.1%	**5**
Warren	0.5%	1.8%	8.8%	24.7%	3.7%	13.7%	25.3%	20.9%	**88**
Wilkes-Barre/Scranton	26.1%	5.4%	2.5%	3.1%	10.2%	7.5%	10.1%	34.6%	**1,766**
Yardley	0.1%		2.6%	17.2%	3.4%	5.9%	32.4%	37.9%	**191**
TOTAL (Mile)	**763**	**299**	**446**	**859**	**808**	**973**	**1,273**	**4,694**	**10,191**

Table 7 – Pittsburgh Main Break Percentages (2016 - 2020)

			Diameters														
Material	Number of Main Breaks (2016-2020)	Main Break/Mile	2.5" or smaller	3"	4"	6"	8"	10"	12"	16"	18"	20"	24"	30"	36"	42"	48"
Galvanized	168	62.3	98.2%	0.6%		0.6%	0.6%										
Copper	23	6.6	87.0%				13.0%										
Plastic	24	1.8	75.0%				16.7%			4.2%			4.2%				
Cast Iron	1856	3.7	25.9%		4.9%	40.7%	23.3%	1.0%	3.1%	0.3%		0.8%		0.1%			
Steel	7	8.9	71.4%	14.3%			14.3%										
Ductile Iron	581	0.65	5.0%		1.7%	23.6%	63.2%	0.2%	4.8%	0.5%			0.5%	0.3%			0.2%
Transite	36	12.3	2.8%			36.1%	61.1%										
CEM-PCCP	14	0.20	28.6%				14.3%			28.6%		7.1%	7.1%	7.1%			7.1%

Table 8 – Wilkes-Barre/Scranton Main Break Percentages (2016 - 2020)

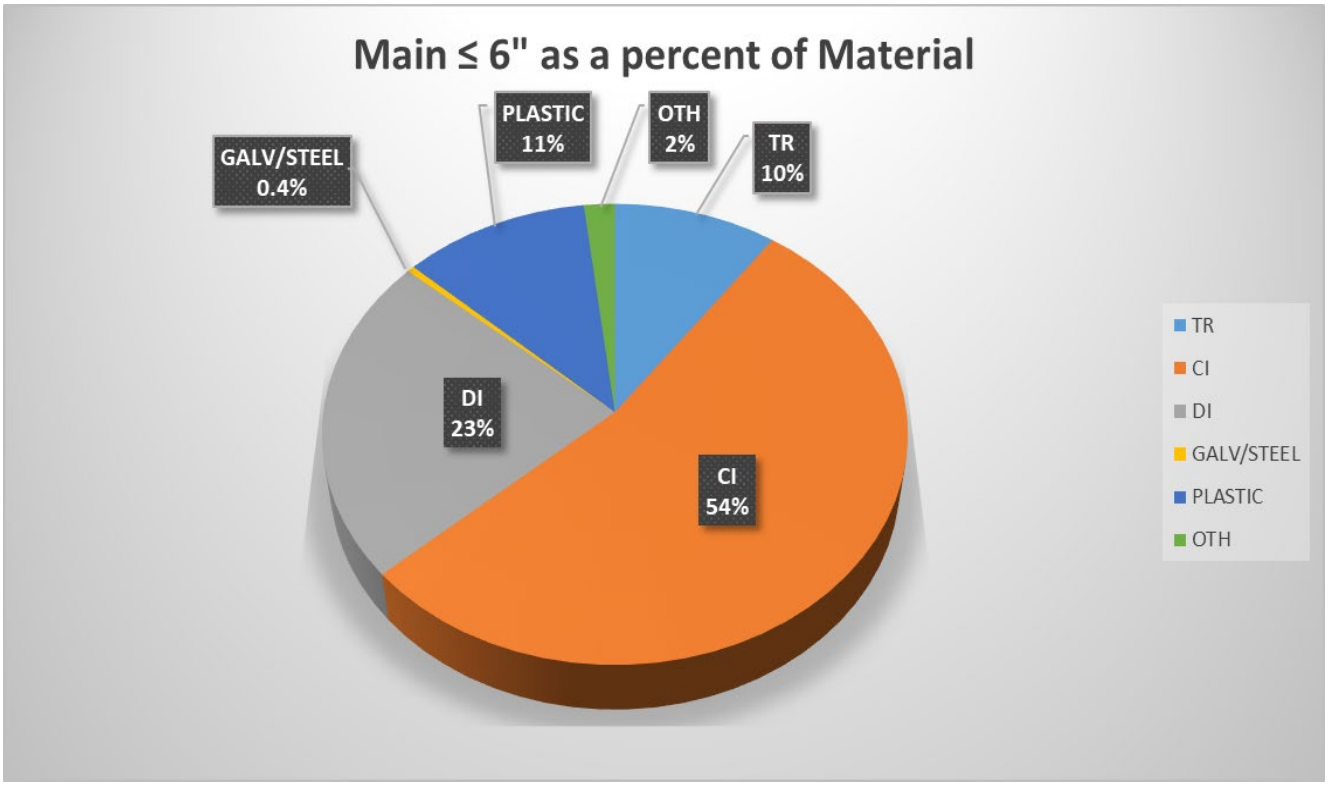
Material	Number of Main Breaks (2016-2020)	Main Break/Mile	Diameters													
			2.5" or smaller	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	36"	42"
Galvanized	42	76.4	100%													
Copper	7	2.9	100%													
Plastic	88	2.6	86%	1.1%		5.7%	6.8%									
Cast Iron	934	1.0	6.4%	1.8%	21%	41%	19%	5.1%	3.1%	0.4%	1.1%	0.5%	0.4%	0.1%		
Steel	15	5.0	13%		13%	20%	33%		13%			7%				
Ductile Iron	162	0.21		0.6%	2.5%	32%	54%	2.5%	4.9%	0.6%	2.5%					

The findings of this analysis are as follows:

Small diameter mains (≤ 6" diameter) continue to have the greatest number of breaks per mile. These are primarily service line leaks. In both districts, the main break frequency rate of galvanized pipe (2" and under) is at least 5-10 times greater than any other pipe. The greatest number of breaks (at least 72%) occur on cast iron pipe, with at least 70% of those breaks occurring on pipe diameters ≤ 6". In the Wilkes Barre/Scranton district, over 60% of the cast iron main breaks occur on 4" and 6" diameter CI mains. The 2" and under size range in the Wilkes Barre/Scranton district exhibits the highest main break frequency rate compared to all other sizes of pipe. In the Pittsburgh district, over 70% of the cast iron main breaks occur on ≤ 2" and 6" diameter CI mains. While the magnitude of breaks or break frequencies will vary between various districts, this trend of a greater number of main breaks on small diameter mains is generally found across the PAWC's water distribution systems. Over the past 20 years, focused replacement efforts have been undertaken to replace the small diameter CI and galvanized mains resulting in a reduction in the number of main breaks and a reduction in the statewide main break frequency rate. The current percent of material which is ≤ 6" in diameter in the PAWC's water system is shown in Figure 8. While it may not seem like much, the 54% of small diameter cast iron main constitutes

over 1,400 miles of pipe. Even if that were the only pipe the Company replaced, it would still take years to replace.

Figure 8 - Breakdown of Small Diameter Mains



PAWC will continue to focus on the replacement of small diameter mains (≤ 6" diameter) of various pipe material/age cohorts associated with CI, galvanized, steel, TR, and plastic which have the most number of breaks and the highest break frequency rates. Segments of pipe to be replaced will be selected based on their performance characteristics, namely main break frequency rates, and expected level of service unless there are other overriding factors such as structural, water quality, or hydraulic capacity concerns. The physical attributes of the pipe (such as material type, size, year of installation) do not directly determine the replacement timing for the asset but are used as an indicator to facilitate analysis of pipe areas. Additionally, the Company will be evaluating areas of main and not merely individual streets. Historically, there have been times where a main on a street was replaced only to come back in subsequent years to replace similar

aged pipe on neighboring streets. This practice caused greater disruption to the customers and greater damage to streets due to heavy construction traffic year by year. By also factoring in where it makes sense to replace all the pipe in a neighborhood, the Company saves mobilization cost and improves customer experience. The following have proven to be the material and vintages with the highest break rates:

Galvanized and unprotected steel pipes (all vintages)
CI pipe – unlined centrifugally CI pipe with lead/leadite joints
"Early years" DI pipe (vintage 1960s)
TR pipe (vintage late 1950s thru 1960s)
Thin walled plastic pipe (vintage 1970s)

Water quality and hydraulic capacity concerns are typically isolated to small, localized portions of the distribution system. Once the issue is investigated, if an operational measure is unable to remedy the concern, then a pipe replacement or rehabilitation option is explored. In some areas, the problem could be more widespread and caused by multiple segments of low performance pipe and the remedy could take several years to implement fully.

By Order entered October 13, 2019, the Commission permitted PAWC to establish its customer-owned lead service line replacement program. *Petition of Pennsylvania-American Water Company for Approval of Tariff Changes and Accounting and Rate Treatment Related Replacement of Lead Customer-Owned Service Pipes,* Docket No. P-2017-2606100. The COVID-19 pandemic impacted PAWC's LSL Replacement Plan activities for the 2020 calendar year and only a minimal number of lead service lines were replaced.

PAWC estimates that over 18,000 customer-side lead service lines exist across the state and is planning to replace them over the coming years in accordance with the PAWC Commission approved tariff. See Appendix A for Tariff Water-PA P.U.C. No. 5, Rule 4.9.1.

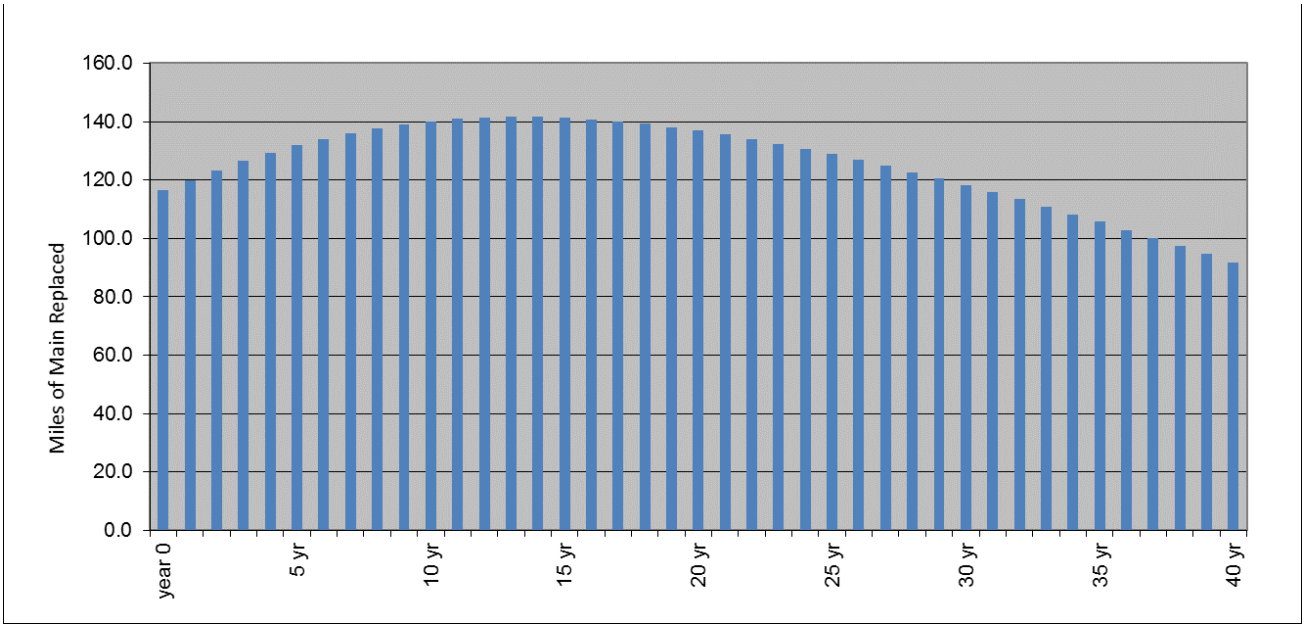
Water LTIIP II will be monitored and evaluated on a regular basis and any updates to the plan will be reported to the Commission when the Company files its Annual Asset Optimization Plan.

Section 2 – An Initial Schedule for Planned Repair and Replacement of Eligible Property

In Water LTIIP I, NESSIE curve analysis was conducted to forecast the expected replacement needs for water pipelines across the PAWC system. This Australian-based model provides a forecast of the amount of infrastructure that will need to be replaced each year over a future time period. The estimated capital investment level associated with the recommended replacement amount is quantified in terms of current value dollars. It relies on a bell curve of expected life age from classes of pipes (by age, diameter, and material). This may be based on actual experience with some pipe and projections on other pipes that have yet to experience substantial failure.

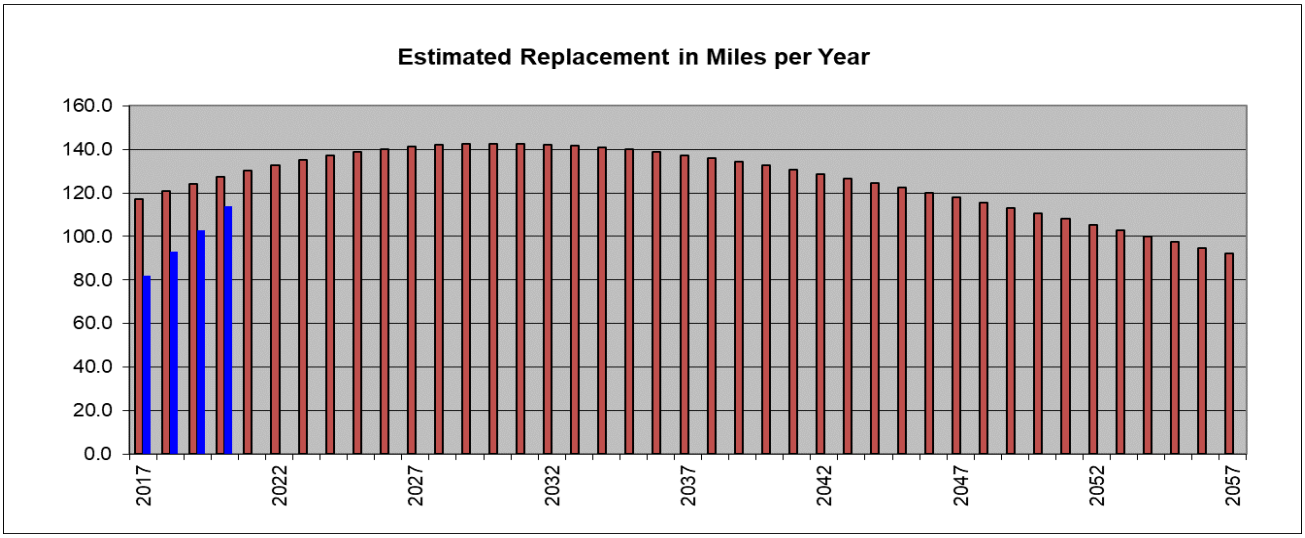
Figure 9 shows the results of the 40-year projection. The results appear to suggest that the planned level of main replacement and DSIC investment over the next 5 years is close to the projections suggested by the model. It also suggests there will be a need to increase the level of main replacement and spending over the next 25 years to meet the increasing number of pipes approaching the end of their life.

Figure 9 – Estimated Replacement in Miles Per Year
Note: Year 0 is 2017



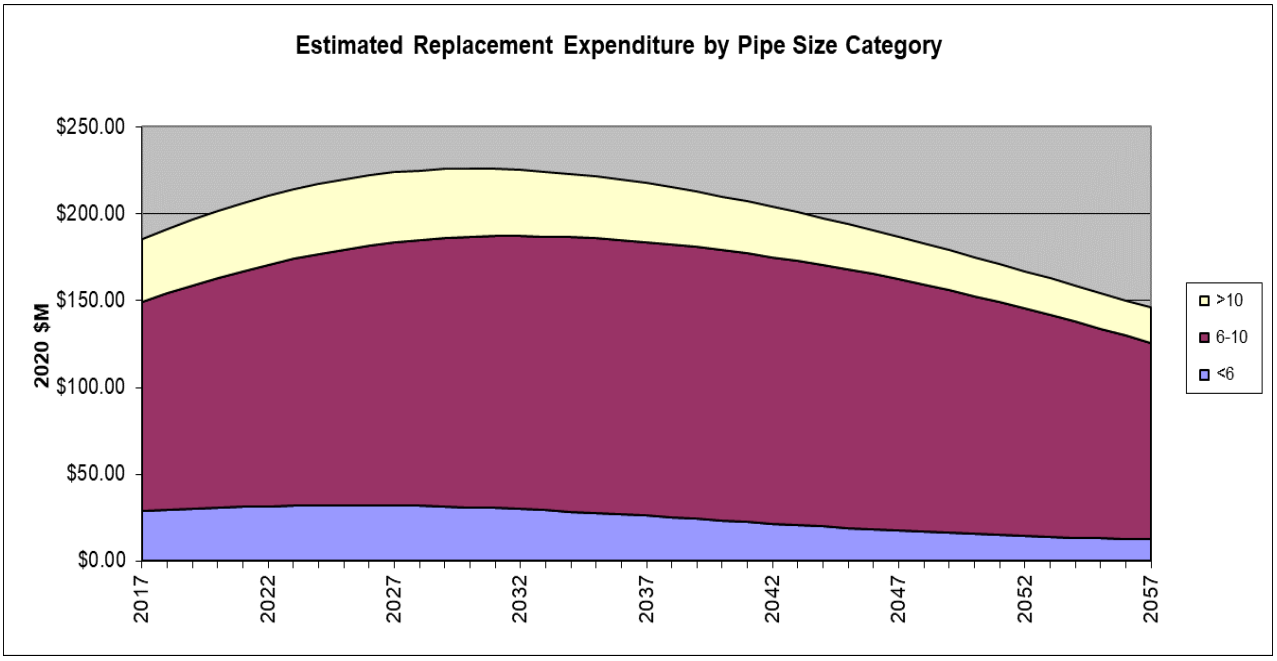
However, due to a variety of factors, the miles of pipe replaced did not keep up with the pace recommended by the model. These factors vary from very severe winter with higher than average main breaks to an increase in municipalities requiring curb-to-curb resurfacing for the restoration. The actuals miles installed compared to the model are shown in Figure 10 below:

Figure 10 - Miles of Main Installed vs the Recommended Volume of the Nessie Model



The model had indicated a need to increase the miles of pipe replaced in order to keep up with the aging infrastructure. While the program has continued to lower the number of main breaks, it is important to adjust the model to account for the lower replacement rates. Taking the cost of main installation into account, with the prioritization as outlined previously, and the miles per year, the expenditure average per year increases. Figure 11 below illustrates the need for additional investment and is aligned with the recommended miles per year.

Figure 11 - Investment Recommended by Size



Current Practice – Bottom Up Assessment

Another important component in the planning process is a more in-depth micro-level or bottom up analysis which is conducted to define local district needs. A detailed project list for the upcoming year is compiled by District Field Operations and Engineering. A primary focus of main replacement over the last few years has been the replacement or rehabilitation of small diameter

mains (6 inches and under) that have reached or are nearing the end of their useful life and larger diameter mains that are experiencing performance related issues.

The composite detailed project list is reviewed by the engineering planning group. Engineering evaluations are conducted as needed to confirm pipe size and material type, scope of the project, replacement vs. rehabilitation options, and synergies with other capital projects, etc. Project scope and costs are either confirmed or adjusted as necessary. Group meetings are then held with district personnel to review the prioritized project list and make final adjustments to scope, cost, or priority as necessary.

As shown on Figure 10, the factors used to evaluate pipeline projects include physical characteristics, performance issues/service levels, impact/consequences of failure, and cost/ease of addressing.

Physical Characteristics - Material - Size - Existing Diameter - Decade Installed	Performance Issues/Service Levels - Break Frequency - Complaint Frequency (Pressure & Water Quality) - Hydraulic Adequacy - Fire Flow Adequacy
Cost/Ease of Addressing - Repairing requirements - Traffic control - Coordinate w/other utilities & municipalities - Bundling of projects	Impact/Consequence of Failure - Number of Customers Affected - High Criticality Customer Impact (Schools, Hospitals, etc.) - Damage Claims - Difficulty of Repair/Restoration & Expense - Flooding, traffic disruption, other utilities

The prioritization process is also supported with a software, Innovyze. The data from the field is input into the Innovyze software along with data from the GIS system. Innovyze works by evaluating all pipes categorized for replacement based on a combination of frequency and severity of performance issues, which determines their risk level. For high risk pipes, where the performance of the pipe is poor, renewal would be considered a higher priority to mitigate the risk

and improve performance. Additionally, so the program is not merely reactive, the software evaluates the probability of main failure to add to the prioritization process thereby helping to avoid main breaks not just react to them. The software also incorporates the criticality of individual mains e.g., those serving medical facilities.

This performance-based management approach allows for proactive planning. For example, pipelines serving critical community services, such as hospitals and other critical care facilities, can be proactively assessed and managed to minimize potential service disruptions. Likewise, water main construction work can be coordinated with other roadwork such as road restoration, detours, and other utility work. Improvement projects can be better scheduled by area to achieve unit cost savings rather than reactive projects scattered across a system. From an overall perspective, if specific vintages of pipe (not necessarily the oldest pipe) are being replaced at a high rate due to break frequency, a proactive decision can be made to replace similar vintage of pipes exposed to similar operating conditions before such mains stop providing an acceptable level of service, generate a high volume of emergency repair work, cause significant traffic disruption, and potentially disrupt local businesses. Sufficient data about poor performing pipes, notably main breaks is important. Pipe failures can be caused by systematic factors such as soil conditions, pressure levels, or environmental conditions; or localized factors, such as pipe manufacture defects, construction damage, stray currents, and poor bedding.

In optimizing a capital improvement program, the element of risk has been recognized as a key factor in prioritizing main replacement. A common definition of risk used here is the product of the likelihood of failure ("LoF") and the consequence of the failure ("CoF"). The CoF of pipe can vary due to differences in the cost of repair, potential damage caused by the break to other infrastructure and private property, interruptions to traffic and commerce, and adverse public reaction.

Risk assessment models have multiple factors to consider. One of the key problems with a risk assessment model for large transmission mains is assigning a probability of failure with any degree of confidence which requires detailed condition assessment using inspection technologies. For most small pipes, there is sufficient history to determine an appropriate level of probability of failure.

In risk management practice, utilities measure the LoF in terms of pipeline's performance as it is related to failure modes of the pipeline. The prioritization rating criteria to determine the LoF includes factors such as pipe material, diameter, pipe age, pipe length, and pipe break data. A rating is assigned to the pipeline according to the rating criteria to indicate its LoF.

For CoF, factors related to customer impact, cost of repair and damage to other property are generally considered. These factors are impacted by pipe size, service interruption time, pipe alignment, physical location, land use, and public image, etc. For each factor considered either in estimating LoF or CoF, there is a rating value and correspondingly relative weight to calculate the risk. In determining the CoF, factors that can mitigate the CoF should be considered. For example, the availability of a redundant pipeline parallel to the critical line can reduce the CoF to a certain degree.

In the decision-making process, all the pipes are categorized based on their risk level. For high risk pipes, if the performance of the pipe is poor, then renewal must be considered to mitigate the risk and to improve the pipe performance.

For low risk pipes, the pipes with poor performance should be renewed; otherwise, the low risk pipe could change to high-risk pipe due to rise of customer complaints or risk of damage to others' property. For those pipes with fair performance, there is no urgency in renewal; they should be maintained and monitored. For low risk pipes with good performance, no action is required; maintenance and monitor should be conducted.

The schedule will follow a combination of the risk/needs assessment model together with the recommendations from the NESSIE Model. The planned investment by year is presented elsewhere in the Water LTIIP II.

Section 3 – A General Description of Location of Eligible Property

A description of the PAWC water system is provided in Section 1 with DSIC-eligible property outlined in Tables 2 through 5. This section will focus on the location of those DSIC-eligible categories that have the largest annual capital spend - namely mains and services.

As previously stated, main replacement activity will focus on small diameter mains (≤6" diameter) of various pipe material/age cohorts which have the greatest number of breaks and highest break frequency rate. The cohorts that have exhibited diminished performance are:

Galvanized and unprotected steel pipes (all vintages)
Cast Iron pipe-unlined centrifugally cast-iron pipe with lead/leadite joints
"Early years" ductile iron pipe (vintage 1960s)
Transite pipe (vintage late 1950s through 1960s)
Thin wall plastic pipe (vintage 1970s)

The selection of individual pipe segments for replacement will be based on their performance characteristics, namely main break frequency rates, and expected level of service unless there are other overriding factors such as structural, water quality, or hydraulic capacity issues.

Service replacement will be coordinated with the main replacement activity. Selected districts which were identified in Section 1 that exhibit high service leak rates will continue to be targeted. In addition, the Company anticipates fully implementing the customer-side lead service replacement program as described above. Targeted locations are still under development.

Meter replacement activity is typically driven by routine compliance change-out cycles. However, the length of service has historically been set at twenty years for the Company. With

newer AMI technology able to improve customer experience, the Company believes it is in the customer's best interest to slightly accelerate the adaptation of AMI technology. In many cases, this will not require the replacement of the entire meter but rather only the replacement of the end point transmitter to enable the AMI reading where the current AMR transmitter may not be powerful enough.

Valve and hydrant replacements are site specific and necessitated by operability and capacity issues unless the valve and hydrants are replaced along with a main replacement project. Projects that have addressed water quality or health and safety concerns have been location specific but over the past years have been less prevalent. Finally, projects that result in unreimbursed highway relocation costs are usually dictated by a third party such as PennDOT, with locations varying depending on the specific highway project.

The location of main and service replacement activity planned for the 2022-2026 timeframe is shown in Appendix B. Compliance meter change-out by location is also shown.

Section 4 – A Reasonable Estimate of Quantity of Eligible Property to be Improved or Repaired

The estimated quantities of property to be improved, miles of main, and number of services and meters are listed in Appendix B. To compile these estimates, the best available information was used regarding the infrastructure needs for each water district. Actual quantities and scheduling may change depending on the outcome of micro-level analysis or other planning studies at a district level, as described in Section 2 of Water LTIIP II.

It is important to note that the cost to install main has increased over the past few years beyond what can be readily attributed to normal inflation. Increasingly, municipalities are passing ordinances requiring full width street pavement replacement beyond the trench width that was

historically allowed. In some cases, this results in restoration costs that equal or even exceed the actual main replacement costs.

Section 5 – Projected Annual Expenditures and Means to Finance the Expenditures

The revised projected annual expenditures for 2022-2026 are shown in Appendix B. Figure 12 depicts the level of investment for maintaining the previously accelerated rate of infrastructure replacement based on a 4-year rolling average. These estimates are based on the quantities shown in Appendix B and recent, competitively-bid prices in Pennsylvania.

Figure 12 – Projected and Actual Annual and Rolling 4-year Average DSIC-eligible Expenditures (2022 – 2026)

~~Year~~	~~Projected Expenditures~~	~~Rolling 4-year Average~~
~~2012~~	~~136.31~~	~~119.74~~
~~2013~~	~~144.09~~	~~130.94~~
~~2014~~	~~142.29~~	~~138.49~~
~~2015~~	~~185.11~~	~~151.95~~
~~2016~~	~~181.78~~	~~163.32~~
~~2017~~	~~139.75~~	~~162.23~~
~~2018~~	~~148.03~~	~~163.67~~
~~2019~~	~~186.05~~	~~163.90~~
~~2020~~	~~180.99~~	~~163.71~~
~~2021~~	~~141.19~~	~~164.07~~
~~2022~~	~~188.27~~	~~174.12~~
~~2023~~	~~187.85~~	~~174.57~~
~~2024~~	~~181.87~~	~~174.79~~
~~2025~~	~~188.11~~	~~186.52~~
~~2026~~	~~190.22~~	~~187.01~~

Year	LTIIP Projected Annual Expenditures	Projected Rolling 4 Year Average Expenditures	Actual and Revised LTIIP Projected Annual Expenditures*	Actual Rolling 4 Year Average Expenditures
2012	$136.31	$119.74	$136.31	$119.74
2013	$144.09	$130.94	$144.09	$130.94
2014	$142.29	$138.49	$142.29	$138.49
2015	$185.11	$151.95	$185.11	$151.95
2016	$181.78	$163.32	$181.78	$163.32
2017	$139.75	$162.23	$140.57	$162.44

2018	$148.03	$163.67	$149.94	$164.35
2019	$186.05	$163.90	$192.15	$166.11
2020	$180.99	$163.71	$192.19	$168.71
2021	$141.19	$164.07	$139.05	$168.33
2022	$188.27	$174.12	$232.64	$189.01
2023	$187.85	$174.57	$307.57	$217.86
2024	$181.87	$174.79	**$279.75**	$239.75
2025	$188.11	$186.52	**$300.58**	$280.13
2026	$190.22	$187.01	**$265.54**	$288.36

*Revised LTIIP projections for years 2024, 2025, and 2026 are shown in **BOLD**.

In general, a 2% inflation rate has been added to determine yearly costs estimates. Starting with the pandemic in 2020 and associated supply chain disruptions, the cost of DI pipe increased close to 80% and unit costs for pipe replacement increased over 42% between 2020 and 2023. We expect that short term inflation will be reduced and less volatile through 2026 barring another disruptive event.

Increases in the estimated to actual costs are also due to other reasons. One of these is the additional restoration requirements, including full road resurfacing or sidewalk/ramp rehabilitation to meet new standards. Another is that larger investment ~~Other variations in the estimated costs shown are also due to specific larger project that are planned to fall in a specific year. The larger~~ projects have been spread across the five-year plan to levelize~~d~~ the investment profile. Some quantities may change depending on the results of engineering studies and water system evaluation studies. Cost may vary depending on the replacement/rehabilitation method selected during the final design. Certain assumptions were made about eligible properties to estimate these expenditures. While the Company has competitive bid pricing for pipe replacement work, pricing will vary with the pipe's diameter and depth, type of material excavated, and other unique site conditions. Therefore, unit costs for average depth, diameter, and typical site conditions were assumed to generate project costs. Annual expenditures may be subject to periodic fluctuation due

to the timing of larger non-DSIC related projects or other external factors unforeseeable at this time.

For all projects, a prudent and cost-effective method will be selected. Value engineering and constructability reviews are conducted on larger scale projects to optimize design and installation, which typically results in the most cost-effective approach. In addition, PAWC uses competitive bidding to ensure capital projects are completed in a cost-effective manner. Projects are bundled together during bidding to achieve economies of scale, improve workforce efficiency and contractor deployment. Inspection work is performed with either Company personnel or engineering consultants to ensure work is performed in accordance with Company plans and specifications and conducted in a safe and cost-effective manner. Contractors undergo a pre-qualification process and must meet established safety standards monitored by ISNET, a third-party entity which monitors safety performance. Company crews will also perform distribution work associated with mains, services, meters, hydrants, and valves depending on workforce availability.

Materials are procured through the Company's Supply Chain Department, which competitively bids materials used for this type of work. The vendors providing the best overall value to the Company are chosen. As pipe is a commodity, having multiple vendors helps protect against catastrophic failure on the part of a single supplier. Scrapped material is disposed of at local junkyards and salvage value is obtained by the Company.

Section 6 - A Description of the Manner in Which Infrastructure Replacement will be Accelerated and How Repair, Improvement or Replacement will Ensure and Maintain Adequate, Efficient, Safe, Reliable and Reasonable Service to Customers

As previously shown on Figure 2 of Water LTIIP II, PAWC has accelerated DSIC eligible investment over the last 15 years from approximately $30 Million in 2001 to $160 Million annually, based on a rolling 4-year average through the approved Water LTIIP II. The needs of the water systems require further increase in planned investment.

The focus of the main replacement program has been the replacement of small diameter water mains (≤ 6" diameter) which exhibit the most number of breaks and have the greatest break frequency rates. Selected pipe cohorts which exhibit diminished performance, together with pipes having structural, water quality, or hydraulic capacity issues are targeted for replacement. Maintaining this accelerated rate of infrastructure replacement will enable the Company to continue providing its customers with safe and reliable service.

Section 7 – A Workforce Management and Training Program Designed to Ensure that the Utility will Have Access to a Qualified Workforce to Perform Work in a Cost-Effective, Safe and Reliable Manner

To ensure system reliability and public safety, all water DSIC eligible projects will be constructed by qualified contractors or Company personnel. PAWC uses competitive bidding and maintains a pre-qualification process to ensure all contractors are qualified to perform work in a cost-effective, safe and reliable manner. PAWC utilizes the ISNET prequalification, screening and management service. This process helps PAWC certify and centralize contractor data, perform pre-project screening, and contractor pre-qualification. It also allows PAWC to manage its risk and contractors' performance more effectively. During the pre-qualification screening process, contractors and subcontractors are required to submit pertinent documentation, such as:

- Safety: Company policy, designated safety inspector, OSHA lost workdays and recordable incidents, OSHA violations
- Worker's Compensation Experience Ratings (Experience Modifier)
- Staffing information
- Annual value of work and percentage of work relevant to bid project
- Work experience schedule
- Bonding capacity
- Liability insurance coverage
- References

PAWC's safety policies and procedures are overseen by the Director of Operational Risk Management ("ORM"). The ORM Department tracks safety performance, administers safety programs and training sessions in support of the Company's health and safety manual, conducts internal inspections/safety audits, and emergency response and preparedness. Safety training is mandatory and related to specific tasks (i.e., terrain, structures, weather, etc.). The ORM staff conducts internal investigations/safety audits on distribution crews, job sites, and locations to evaluate compliance and identify any safety issues. Investigations classify safety issues as either critical or minor. Critical violations must be corrected immediately, and minor violations must be corrected before the next investigation. The Company distributes a daily email titled "Safety Talk" as a tool to maintain and emphasize the importance of safety throughout the organization. These emails contain weekly injury reports, general safety topics, department specific safety alerts, weather and current events related safety topics, and home safety tips.

All construction projects performed by independent contractors are properly inspected. PAWC employees are actively engaged in the direct supervision of project inspections. The project close-out process includes a punch-list to ensure all work is completed according to contract documents.

Section 8 – A Description of a Utility's Outreach and Coordination Activities with Other Utilities, Department of Transportation and Local Governments Regarding the Planned Maintenance/Construction Projects and Roadways that May Be Impacted by the LTIIP

The replacement of aging infrastructure proposed in Water LTIIP II will lead to disruptions as work is performed in the rights-of-way of the roadways and streets across the PAWC service area. Local municipalities and other utilities/agencies may be planning paving projects or underground infrastructure replacement projects located in the same right-of-way as PAWC's infrastructure. PAWC recognizes that coordination with other utilities minimizes disruption and ensures that infrastructure replacement is efficient and cost effective. Therefore, PAWC takes the following steps to reach out to customers about disturbances, and coordinate with other utilities, PennDOT, and other governmental agencies located within the PAWC service area:

- Utilize Pennsylvania's one-call system for "design notifications." "Design Notifications" are used during the initial design of a project to have other utilities physically mark on site the location of their buried utilities. This allows for accurate coordination of the design by avoiding conflicts with other buried utilities during construction.
- Maintain open communication with local municipalities to stay informed about planned utility and paving projects.
- Maintain communication with PennDOT Utility Administrators and review the "letting" schedule.
- Maintain communication/working relationships with other utilities operating within PAWC's service area with regard to coordinating work activity.
- Where applicable and cost-effective, use trenchless technologies to minimize roadway disturbance.
- Prior to working within a community, issue door-to-door notifications, press releases, and/or informational letters to notify those customers/community associations affected by the work.

To minimize street restoration costs, PAWC works closely with PennDOT, other governmental agencies, and utilities to align its Water LTIIP II work with construction that those entities are planning. When appropriate, we alter construction timeframes to allow the coordination of street openings with these other entities.

APPENDIX A

RULES AND REGULATIONS

4. Service Pipes (cont'd)

4.9.1 Replacement of Lead Service Pipes

4.9.1.1

Notwithstanding Rules 2.11, 2.12, 2.14 and 4.9, the Company shall, provided that the customer consents, replace lead Service Pipes pursuant to Parts 1 and 2 of its lead Service Pipe replacement plan (Replacement Plan), subject to the budgeted allotment of $6.0 million per year for all lead Service Line replacements under its Replacement Plan. Pursuant to its Replacement Plan – Part 1, the Company will replace lead Service Pipes it encounters when replacing its mains and/or Service Lines up to 1,800 lead Service Pipe replacements per year within a maximum amount of approximately $6.0 million per year. Pursuant to its Replacement Plan – Part 2, the Company will replace a lead Service Pipe at a Customer's request subject to the following conditions: (1) verification that the Customer has a lead Service Pipe; (2) the time when the replacement occurs will be determined by the Company based on factors determined by the Company including, without limitation, the number of customer requests for Service Pipe replacements in Company-designated geographic areas; (3) the annual cap of 1,800 lead Service Pipe; and (4) availability of funds not used for Part 1 replacements under the Company's budgeted allotment of $6.0 million per year. Lead Service Pipe replacements performed pursuant to Replacement Plan – Part 1 will have priority on the use of funds under the annual budget allotment and, therefore, in any year, funds will be used for lead Service Pipe replacements under Replacement Plan – Part 2 only to the extent that funds are available within the budget allotment and are not allocated to Part 1 replacements planned for that year. Portions of the annual budget allotment of $6.0 million that are not expended on lead Service Pipe replacements under Part 1 or Part 2 of the Replacement Plan in a year will roll-over to the next subsequent year, but use of the roll-over funds will still be subject to the requirement that priority be given to Part 1 replacements. If the Company does not use the excess budgetary allotment in the subsequent year, the excess budgetary allotment will not carry forward into the following year, i.e. excess budgetary allotments will not carryforward on a cumulative basis, subject to the cap on the number of lead Service Pipe replacements per year. The Company may, but shall not be required, to petition the Commission for approval to modify its annual budget allotment of $6.0 million if the Company, in its sole discretion, determines that its annual budget allotment no longer meets the future needs of administering both Parts of the Replacement Plan. However, no change may be made without prior Commission approval. Costs the Company incurs to replace lead Service Pipes under the Company's Replacement Plan shall be subject to the accounting and rate treatment approved by the Order of the Pennsylvania Public Utility Commission (Commission) entered October 3, 2019 and Settlement at Docket No. P-2017-2606100 (Approval Order). After a lead Service Pipe is replaced by the Company, the Customer shall own the Service Pipe and shall have full responsibility for the repair, replacement and maintenance of the new Service Pipe, which, upon installation, shall thereafter be subject to the terms of Rules 2.12, 2.14 and 4.9.

4.9.1.2

The Customer shall enter into an Agreement for Replacement of Lead Service Pipe, in a form provided by the Company, prior to the initiation of any work by the Company to replace a Customer's Service Pipe. The Company will provide a two-year warranty on workmanship and materials for any Customer lead Service Pipes it replaces.

Supplement No. 17 to
Tariff Water-PA P.U.C. No. 5
Original Page 47.2

RULES AND REGULATIONS

4. Service Pipes (cont'd)

4.9.1.3

The Company will verify whether the property for which a Replacement Plan - Part 2 replacement was requested has a lead Service Pipe, and if so, will test water from the tap of the dwelling within four weeks after receiving such a request from a Customer or property owner, as applicable. The Company will notify the Customer occupying such property within three days of obtaining the test results.

4.9.1.4

The Company will provide a 10-cup filtered water container to low-income residential Customers who request (or if the Customer occupies a rental property, the property-owner has made, or has authorized the Customer to make, such request) that the Company replace their LSPs under Part 2 of the Company's Replacement Plan, provided that:

1. The Customer's household income is at or below 150% of the Federal Poverty Income Guidelines as determined by the Dollar Energy Fund, which the Company will engage to make this determination based on information available to, or obtained by, Dollar Energy Fund in the same manner Dollar Energy Fund determines a residential Customer's low-income status for other low-income programs of the Company;
2. The Company has verified that the Customer has a lead Service Pipe; and
3. The Company's testing of water from the Customer's tap shows that the water has a lead level above the action level established by the Pennsylvania Department of Environmental Protection under the Environmental Protection Agency's Lead and Copper Rule.

4.9.1.5

If the Company, at the request of a Customer or property-owner (as applicable), visits a Customer's site and determines that the Service Pipe has been replaced at or within one-year of the date the Company commenced a project to replace lead Service Pipes and the Customer or property-owner (as applicable) provides the Company with a paid invoice, a certification from a certified plumber, and other documentation determined by the Company to be appropriate to verify the replacement, the Company will reimburse the Customer's or property-owner's (as applicable) reasonable costs up to an amount not to exceed 125% of the costs the Company would have incurred to perform the replacement of a similarly-sized Service Pipe in the project area. A lead Service Pipe project will commence on the date the Company begins physical main replacement work in the project area that includes the Customer's site or when the Company deploys a contractor crew to the geographic area of a Replacement Plan – Part 2 project to perform grouped work activity, whichever is sooner.

APPENDIX B

The Company has previously included its lead service line replacement activities in its Water LTIIP II. The Company is filing a petition with the Commission seeking approval of its Lead Service Line Replacement ("LSLR") Program in accordance with 52 Pa. Code §§ 65.51 *et seq.* Pursuant to 52 Pa. Code § 65.54, an entity that has a Commission-approved LTIIP shall include with its LSLR program petition a modified LTIIP containing an LSLR plan as a separate and distinct component of the entity's LTIIP. Appendix B conforms with the requirement of 52 Pa. Code § 65.54.

Projected Annual Expenditures for DSIC-eligible properties 2022-2026

Capital Investment		2022	2023	2024	2025	2026
1. Main Replacement	Millions	**$92.60**	**$98.67**	**$94.35**	**$96.36**	**$98.41**
Pittsburgh	Millions	$30.63	$32.64	$31.21	$31.87	$32.55
WB/Scranton	Millions	$16.41	$17.48	$16.72	$17.07	$17.44
Elizabeth	Millions	$4.22	$4.50	$4.30	$4.40	$4.49
NewCastle/Ellwood	Millions	$1.90	$2.03	$1.94	$1.98	$2.02
Uniontown/Connell	Millions	$2.14	$2.28	$2.18	$2.23	$2.28
Norristown	Millions	$3.01	$3.23	$3.07	$3.14	$3.20
NorthEast PA	Millions	$5.28	$5.62	$5.38	$5.49	$5.61
SouthEast PA	Millions	$1.49	$1.57	$1.51	$1.55	$1.58
Central PA	Millions	$7.62	$8.11	$7.76	$7.92	$8.09
SouthWest PA	Millions	$14.00	$14.91	$14.26	$14.57	$14.87
NorthWest PA	Millions	$5.90	$6.28	$6.01	$6.14	$6.27
2. Services	Millions	**$24.54**	**$24.91**	**$25.29**	**$25.67**	**$26.07**
Special Program - Lead Lined Service Lines	Millions	$6.00	$6.00	$6.00	$6.00	$6.00
Pittsburgh	Millions	$5.98	$6.10	$6.22	$6.34	$6.47
WB/Scranton	Millions	$5.64	$5.75	$5.87	$5.99	$6.10
NorthEast PA	Millions	$1.93	$1.97	$2.01	$2.05	$2.09
SouthEast PA	Millions	$2.30	$2.35	$2.40	$2.44	$2.49
Central PA	Millions	$1.02	$1.04	$1.06	$1.08	$1.10
SouthWest PA	Millions	$0.66	$0.67	$0.69	$0.70	$0.71
NorthWest PA	Millions	$1.01	$1.03	$1.05	$1.07	$1.09
3. Meters	Millions	**$16.07**	**$17.29**	**$19.18**	**$19.56**	**$19.95**
Pittsburgh	Millions	$2.54	$2.60	$2.94	$2.92	$2.95
WB/Scranton	Millions	$2.43	$2.90	$3.42	$3.64	$3.82
NorthEast PA	Millions	$1.97	$2.18	$2.33	$2.29	$2.27
SouthEast PA	Millions	$2.42	$2.64	$2.98	$3.12	$3.05
Central PA	Millions	$2.59	$2.78	$2.81	$2.96	$2.91
SouthWest PA	Millions	$2.17	$2.20	$2.44	$2.45	$2.75
NorthWest PA	Millions	$1.95	$1.99	$2.25	$2.19	$2.20
Statewide	Millions					
4. Mains - Unscheduled & Relocation	Millions	**$27.38**	**$27.30**	**$27.73**	**$28.17**	**$28.61**
5. Hydrants & Valve Replacement	Millions	**$7.08**	**$6.20**	**$6.33**	**$6.45**	**$6.58**
6. Investment Projects-Mains	Millions	**$20.61**	**$13.48**	**$9.00**	**$11.90**	**$10.60**
TOTAL	**Millions**	**$188.27**	**$187.85**	**$181.87**	**$188.11**	**$190.22**

	LTIP Update				
Capital Investment	**2022 ($M)**	**2023 ($M)**	**2024* ($M)**	**2025* ($M)**	**2026* ($M)**
1. Main Replacement	**$92.60**	**$98.67**	**$143.75**	**$141.53**	**$129.38**
Pittsburgh	$30.63	$32.64	$36.21	$50.87	$31.44
WB/Scranton	$16.41	$17.48	$23.79	$23.43	$24.35
Elizabeth	$4.22	$4.50	$3.34	$9.32	$1.75
NewCastle/Ellwood	$1.90	$2.03	$2.91	$2.06	$2.13
Uniontown/Connell	$2.14	$2.28	$2.07	$3.84	$0.09
Norristown	$3.01	$3.23	$13.57	$3.59	$0.84
NorthEast PA	$5.28	$5.62	$5.69	$7.69	$6.13
SouthEast PA	$1.49	$1.57	$18.42	$4.82	$22.41
Central PA	$7.62	$8.11	$12.98	$7.59	$21.63
SouthWest PA	$14.00	$14.91	$15.94	$21.30	$8.75
NorthWest PA	$5.90	$6.28	$8.84	$7.02	$9.86
2. Services	**$24.54**	**$24.91**	**$31.30**	**$54.06**	**$55.97**
ecial Program - Lead Lined Service Lines	$6.00	$6.00	$6.00	$22.80	$23.25
Pittsburgh	$5.98	$6.10	$7.55	$8.80	$9.00
WB/Scranton	$5.64	$5.75	$6.28	$10.05	$11.25
NorthEast PA	$1.93	$1.97	$1.58	$2.15	$2.16
SouthEast PA	$2.30	$2.35	$3.86	$4.29	$3.68
Central PA	$1.02	$1.04	$2.00	$3.48	$4.09
SouthWest PA	$0.66	$0.67	$2.16	$2.07	$2.12
NorthWest PA	$1.01	$1.03	$1.88	$0.43	$0.43
3. Meters	**$16.07**	**$17.29**	**$40.84**	**$25.46**	**$26.18**
Pittsburgh	$2.54	$2.60	$6.43	$2.51	$2.86
WB/Scranton	$2.43	$2.90	$9.15	$10.74	$11.38
NorthEast PA	$1.97	$2.18	$3.63	$1.24	$1.44
SouthEast PA	$2.42	$2.64	$14.38	$3.96	$3.91
Central PA	$2.59	$2.78	$2.06	$2.24	$2.59
SouthWest PA	$2.17	$2.20	$3.63	$3.69	$2.74
NorthWest PA	$1.95	$1.99	$1.57	$1.09	$1.27
Statewide					
4. Mains - Unscheduled & Relocation	**$27.38**	**$27.30**	**$36.30**	**$39.78**	**$33.43**
5. Hydrants & Valve Replacement	**$7.08**	**$6.20**	**$12.03**	**$12.93**	**$11.84**
6. Investment Projects-Mains	**$20.61**	**$13.48**	**$15.53**	**$26.82**	**$8.74**
TOTAL	**$188.27**	**$187.85**	**$279.75**	**$300.58**	**$265.54**

*** 2024, 2025, and 2026 projections are updated as of July 2023.**

Projected Quantities of Mains, Services, and Meters Replaced 2022-2026

Quantity		2022	2023	2024	2025	2026
1. Main Replacement	miles	**64.8**	**67.8**	**63.5**	**63.7**	**63.7**
Pittsburgh	miles	17.3	18.1	16.9	17.0	17.0
WB/Scranton	miles	12.4	13.0	12.2	12.2	12.2
Elizabeth	miles	3.1	3.3	3.1	3.1	3.1
NewCastle/Ellwood	miles	2.0	2.1	2.0	2.0	2.0
Uniontown/Connell	miles	1.6	1.7	1.6	1.6	1.6
Norristown	miles	1.6	1.7	1.6	1.6	1.6
NorthEast PA	miles	4.3	4.5	4.2	4.2	4.2
SouthEast PA	miles	0.9	0.9	0.9	0.9	0.9
Central PA	miles	6.5	6.7	6.3	6.3	6.3
SouthWest PA	miles	9.5	9.9	9.3	9.3	9.3
NorthWest PA	miles	5.7	5.9	5.6	5.6	5.6
2. Services	units	**13,190**	**13,575**	**12,961**	**12,950**	**12,941**
Special Program - Lead Lined Service Lines	units	1,091	1,070	1,049	1,028	1,008
Pittsburgh	units	2,891	3,001	2,840	2,843	2,846
WB/Scranton	units	2,525	2,604	2,488	2,490	2,492
NorthEast PA	units	1,020	1,048	1,008	1,008	1,009
SouthEast PA	units	1,088	1,104	1,081	1,082	1,082
Central PA	units	1,159	1,201	1,140	1,142	1,143
SouthWest PA	units	2,151	2,242	2,109	2,112	2,114
NorthWest PA	units	1,264	1,306	1,245	1,246	1,248
3. Meters	units	**51,552**	**54,855**	**58,688**	**59,594**	**63,957**
Pittsburgh	units	10,120	10,090	10,639	10,629	11,239
WB/Scranton	units	6,650	7,659	9,042	9,931	10,723
NorthEast PA	units	5,735	6,607	6,575	6,624	6,685
SouthEast PA	units	7,893	8,835	9,285	9,429	10,272
Central PA	units	8,036	8,107	8,761	8,589	8,640
SouthWest PA	units	7,317	7,457	7,810	7,937	9,565
NorthWest PA	units	5,801	6,100	6,576	6,455	6,833
Statewide						
4. Mains - Unscheduled & Relocation		**4.1**	**4.1**	**4.0**	**3.9**	**3.8**
5. Valve Replacement		**1,062**	**931**	**949**	**968**	**988**
6. Investment Projects	miles	**9.3**	**5.9**	**3.9**	**5.0**	**4.4**
TOTAL	**Miles**	**78.1**	**77.8**	**71.4**	**72.6**	**71.9**

		LTIIP				
Quantity		**2022**	**2023**	**2024***	**2025***	**2026***
1. Main Replacement	miles	**64.8**	**67.8**	**90.8**	**83.5**	**91.2**
Pittsburgh	miles	17.3	18.1	15.0	20.7	12.1
WB/Scranton	miles	12.4	13.0	20.0	14.9	15.0
Elizabeth	miles	3.1	3.3	2.9	4.4	0.9
NewCastle/Ellwood	miles	2.0	2.1	3.5	1.4	1.3
Uniontown/Connell	miles	1.6	1.7	1.4	1.7	0.1
Norristown	miles	1.6	1.7	6.1	1.0	1.6
NorthEast PA	miles	4.3	4.5	6.1	8.4	11.2
SouthEast PA	miles	0.9	0.9	9.7	7.9	29.0
Central PA	miles	6.5	6.7	10.5	7.1	11.6
SouthWest PA	miles	9.5	9.9	9.1	10.6	4.7
NorthWest PA	miles	5.7	5.9	6.5	5.5	3.7
2. Services	units	**13,190**	**13,575**	**10,597**	**14,223**	**14,526**
ecial Program - Lead Lined Service Lines	units	1,091	1,070	1,049	2,657	2,657
Pittsburgh	units	2,891	3,001	2,849	3,256	3,264
WB/Scranton	units	2,525	2,604	2,371	3,718	4,080
NorthEast PA	units	1,020	1,048	595	794	783
SouthEast PA	units	1,088	1,104	1,455	1,587	1,333
Central PA	units	1,159	1,201	753	1,287	1,483
SouthWest PA	units	2,151	2,242	816	764	769
NorthWest PA	units	1,264	1,306	710	160	157
3. Meters	units	**51,552**	**54,855**	**122,646**	**71,744**	**71,391**
Pittsburgh	units	10,120	10,090	19,300	6,385	7,163
WB/Scranton	units	6,650	7,659	27,474	37,068	37,430
NorthEast PA	units	5,735	6,607	10,898	3,384	3,681
SouthEast PA	units	7,893	8,835	43,174	8,689	8,495
Central PA	units	8,036	8,107	6,192	4,595	5,114
SouthWest PA	units	7,317	7,457	10,892	8,840	6,386
NorthWest PA	units	5,801	6,100	4,715	2,783	3,122
Statewide						
4. Mains - Unscheduled & Relocation	miles	**4.1**	**4.1**	**5.4**	**3.9**	**3.8**
5. Valve Replacement	units	**1,062**	**931**	**1,805**	**1,903**	**1,708**
6. Investment Projects	miles	**9.3**	**5.9**	**6.9**	**11.7**	**3.7**
TOTAL	**Miles**	**78.1**	**77.8**	**103.1**	**99.1**	**98.8**

*** 2024, 2025, and 2026 projections are updated as of July 2023.**