



**PHILADELPHIA GAS WORKS**

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May 3, 2022

**Via E-Filing Only**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
400 North Street  
Harrisburg, PA 17120

**Re: Petition of Philadelphia Gas Works for Approval of its Third Long-Term Infrastructure Improvement Plan for the Period Beginning September 1, 2022 and Ending August 31, 2027, Docket No. P-2022-**

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Dear Secretary Chiavetta:

Enclosed for filing is the Petition of Philadelphia Gas Works for Approval of its Third Long-Term Infrastructure Improvement Plan in the above-referenced proceeding. Copies will be served as indicated on the attached Certificate of Service.

Respectfully,

/s/ Craig W. Berry  
Craig W. Berry, Esquire

Enclosure

cc: Certificate of Service (email only)



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**CERTIFICATE OF SERVICE**

I hereby certify that this day I served a copy of Petition of Philadelphia Gas Works for Approval of its Third Long-Term Infrastructure Improvement Plan upon the persons listed below in the manner indicated in accordance with the requirements of 52 Pa. Code Section 1.54.

**Via Email**

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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Petition of Philadelphia Gas Works for :  
Approval of its Third Long-Term : Docket No. P-2022-  
Infrastructure Improvement Plan :

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**PETITION OF PHILADELPHIA GAS WORKS  
FOR APPROVAL OF ITS THIRD  
LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN**

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Pursuant to Section 1352(a) of the Public Utility Code, 66 Pa.C.S. § 1352(a), and 52 Pa. Code § 121.5(a), Philadelphia Gas Works (“PGW” or “Company”) respectfully submits this Petition requesting that the Public Utility Commission (“PUC” or the “Commission”) approve PGW’s Third Long-Term Infrastructure Improvement Plan for the period beginning September 1, 2022, and ending August 31, 2027 (“Third LTIIIP”). This Third LTIIIP replaces the Second LTIIIP that was entered by Commission Order on August 31, 2017 at Docket No. P-2017-2602315 (“Second LTIIIP”).<sup>1</sup> PGW’s Third LTIIIP is attached as “Attachment A.”

In support of approval of the relief requested, PGW states as follows:

**I. BACKGROUND**

1. PGW is a city natural gas distribution operation as defined in the Public Utility Code, 66 Pa.C.S. § 102. PGW manages a distribution system of approximately 6,000 miles of gas mains and service lines<sup>2</sup> supplying approximately 500,000 customers in the City and County of Philadelphia.

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<sup>1</sup> *Petition of Philadelphia Gas Works for Approval of its Second Long-Term Infrastructure Improvement Plan for the Period Beginning September 1, 2017, and Ending August 31, 2022*, Docket No. P-2017-2602315, Opinion and Order entered August 31, 2017.

<sup>2</sup> There are no customer-owned service lines in the PGW territory. Service lines are also referred to as services.

2. The names, addresses, and telephone numbers of PGW’s counsel are:

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3. On February 14, 2012, Act 11 was signed into law by the Pennsylvania General Assembly. That Act authorizes the establishment of a Distribution System Improvement Charge (“DSIC”) to provide for the timely recovery of reasonable and prudent costs incurred to repair, improve or replace eligible property in order to ensure and maintain adequate, efficient, safe, reliable and reasonable service.<sup>3</sup> The provisions of Act 11 were codified in Chapter 13 of the Public Utility Code,<sup>4</sup> and related Commission regulations were promulgated as Chapter 121 to Title 52 of the Pennsylvania Code (“LTIIIP Regulations”).<sup>5</sup>

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<sup>3</sup> 66 Pa.C.S. § 1353(a).

<sup>4</sup> 66 Pa.C.S. §§ 1350 - 1360.

<sup>5</sup> The Commission adopted final regulations related to Long-Term Infrastructure Improvement Plans in December 2014. 52 Pa. Code §§ 121.1 to 121.8; Review of Long-Term Infrastructure Improvement Plan, 44 Pa.B. 7809, 7856 (December 20, 2014).

4. On April 4, 2013, the PUC approved PGW’s first LTIP, which covered the five-year period through August 31, 2017 (corresponding to PGW’s fiscal years 2013 through 2017).<sup>6</sup>
5. On May 9, 2013, PGW’s first DSIC, with a cap of 5%, was approved by the PUC.<sup>7</sup> PGW’s DSIC compliance tariff, Supplement No. 62 to Gas Service Tariff – Pa P.U.C. No. 2, went into effect June 1, 2013.<sup>8</sup>
6. On September 1, 2015, PGW filed a “DISC Cap Increase Petition” seeking, *inter alia*, approval to increase the DSIC cap and to permit PGW to use an annualized, levelized charge as the basis for establishing a DSIC.
7. On January 28, 2016,<sup>9</sup> the Commission issued an order which, *inter alia*, authorized PGW to increase its DSIC cap to 7.5% of distribution revenues (including any reconciliation recovery); and directed PGW to file a petition to amend (referenced in the regulation as a petition to modify) its LTIP detailing the Company’s proposed accelerated main replacement program and how it plans to expend the additional DSIC revenues.<sup>10</sup>

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<sup>6</sup> Docket No. P-2012-2337737, Opinion and Order (April 4, 2013) (“LTIP I Order”).

<sup>7</sup> *Petition of Philadelphia Gas Works for Approval of a Distribution System Improvement Charge*, Docket No. P-2012-2337737, Opinion and Order entered on May 9, 2013 (“Final DSIC Order”).

<sup>8</sup> Final DSIC Order; *Petition of Philadelphia Gas Works for Approval of a Distribution System Improvement Charge*, Docket No. P-2012-2337737, Secretarial Letter dated June 4, 2013; *Petition of Philadelphia Gas Works for Approval of a Distribution System Improvement Charge*, Docket No. P-2012-2337737, Secretarial Letter dated June 10, 2013.

<sup>9</sup> *Petition of Philadelphia Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges*, Docket Nos. P-2015-2501500, C-2015-2504092, Opinion and Order entered January 28, 2016 (“DISC Increase Order”).

<sup>10</sup> DISC Increase Order, at Ordering Paragraph 8(a). As part of a stipulation with the Bureau of Investigation and Enforcement (“I&E”) PGW also agreed in its amended LTIP to show how PGW intended to train staff and

8. The Modified LTIIIP was deemed in compliance with that requirement and was subsequently approved by the Commission on July 6, 2016.<sup>11</sup>
9. On August 31, 2017, the PUC approved PGW’s second LTIIIP, which covers the five-year period beginning September 1, 2017 through August 31, 2022 (corresponding to PGW’s fiscal years 2018 through 2022).<sup>12</sup> That LTIIIP contained all of the elements required by the Commission’s Implementation Order<sup>13</sup> and 66 Pa.C.S. § 1352(a):<sup>14</sup> (a) the types and age of eligible property; (b) a schedule of planned repairs and replacements; (c) location of eligible property; (d) a reasonable estimate of the quantity of property to be improved; (e) projected annual expenditures and measures to ensure the plan was cost-effective; (f) the manner in which replacement of aging infrastructure was to be accelerated and how repair, improvement or replacement would maintain safe and reliable service; and (g) a workforce and management training plan designed to ensure

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contractors to meet the Operator Qualification requirements of 49 CFR Subpart N and to otherwise demonstrate that it would have qualified personnel available to accomplish the accelerated main replacement authorized by the PGW Petition. I&E Stipulation, ¶ 1.B.(1)(c).

<sup>11</sup> *Petition of Philadelphia Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges*, Docket No. P-2015-2501500, Opinion and Order entered July 6, 2016.

<sup>12</sup> Docket No. P-2017-2602315, Opinion and Order (August 31, 2017) (“LTIIIP II Order”).

<sup>13</sup> On August 2, 2012, the Commission issued its Final Implementation Order establishing procedures and guidelines to carry out the ratemaking provisions of Act 11. *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611, Final Implementation Order entered August 2, 2012 (“Final Implementation Order”). The Final Implementation Order is a policy statement setting forth how the Commission intends to interpret Act 11 in future adjudications and rulemakings. See *Petition of PPL Electric Utilities Corporation For Approval of a Distribution System Improvement Charge*, Docket No. P-2012-2325034, Recommended Decision dated July 25, 2014 at 18-19, modified (on other grounds) in part by Opinion and Order entered April 9, 2015.

<sup>14</sup> The Commission’s LTIIIP Regulations were adopted after PGW’s current LTIIIP was approved. See footnote 5, *supra*. 52 Pa. Code § 121.3(a) tracks these seven requirements and adds an eighth (h) requirement: “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 LTIIIP.”

that PGW would have access to a qualified workforce to perform work in a cost-effective, safe and reliable manner.

## **II. Description and Justification for Third LTIP**

10. As fully described in the accompanying Third LTIP (Attachment “A”), the accelerated main replacement program set forth therein will, over time, reduce risk and costs, compared to that which PGW would experience if it did not accelerate its program, and result in more adequate, efficient, safe, reliable and reasonable natural gas distribution service.

11. PGW’s Third LTIP (Attachment “A”) will, upon approval, replace the Company’s Second LTIP and is set to begin on September 1, 2022 and end on August 31, 2027. It includes all of the required elements identified in Section 1352(a) and the LTIP Regulations:

- (1) Identification of types and age of eligible property owned and operated by the utility for which it is seeking DSIC recovery;
- (2) An initial schedule for planned repair and replacement of eligible property;
- (3) A general description of location of eligible property;
- (4) A reasonable estimate of the quantity of eligible property to be improved or repaired;
- (5) Projected annual expenditures and means to finance the expenditures;
- (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;
- (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;
- (8) A description of a utility’s outreach and coordination activities with other utilities, Department of Transportation and local governments regarding their planned maintenance/construction projects and roadways that may be impacted by the LTIP; and

- (9) If a NGDC identifies a critical valve that it will repair, improve upon or replace, and for which it will seek DSIC recovery, then it must include such information in its LTIP.
12. The Third LTIP is intended to: (1) continue the acceleration of the replacement rate of at-risk gas mains; (2) reduce overall risk to PGW's gas distribution system and enhance safety and reliability; and (3) comply with the DSIC Cap Waiver Order, Section 1352(a) and the LTIP Regulations.
13. PGW's "at risk"<sup>15</sup> distribution mains currently make up 56% of its 3,046 miles of main. PGW has historically removed 18 miles of high risk cast iron main each year, financed from funds provided from its base rates.
14. PGW's proposed Third LTIP continues the acceleration of its cast iron main replacement program and reflects the current DSIC cap of 7.5%, currently \$38.6 million annually.
15. The continued acceleration of PGW's main replacement program, proposed herein, is estimated to retire all of its cast iron mains in 40 years.
16. Such an expedited pace should produce the following reliability, safety and cost benefits:
- The reduction of leaks and the concomitant risk of serious incidents from those leaks, compared to what PGW is likely to experience without continued acceleration;
  - Reduction of breakage repairs and future breakage repair costs, again, compared to the costs it would incur absent continued acceleration;

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<sup>15</sup> PGW uses the term "at risk" to mean cast iron and unprotected steel mains.

- Reductions in leak maintenance and repair on the facilities being removed from service; and
- Improvement in pressure, and lower levels of unaccounted-for gas, which should produce greater rate stability for PGW’s customers and result in more adequate, efficient, safe, reliable and reasonable natural gas distribution service.

17. In sum, continued acceleration of the main replacement program will reduce risk and costs, compared to that which PGW would experience if it did not continue the acceleration of its program.

18. As detailed in the Third LTIP, PGW will prioritize replacement of the following sizes and types of “at risk” main:

<i>Long Term Infrastructure Improvement Program</i>						
<i>Annual Schedule of Quantities</i>						
<i>Period FY 2023 - FY 2027</i>						
<i>Quantities</i>	<i>FY 2023</i>	<i>FY 2024</i>	<i>FY 2025</i>	<i>FY 2026</i>	<i>FY 2027</i>	<i>Cumulative Totals</i>
<b>CURRENT BASELINE PROGRAM</b>						
8" & Smaller LP/IP	18.00	18.00	18.00	18.00	18.00	90.00
<b>ACCELERATED PROGRAM</b>						
8" & Smaller LP/IP	7.00	7.00	8.25	8.25	8.25	38.75
12" & Larger All Pressures	5.49	5.40	5.30	5.10	5.00	26.29
Abandonment for Non-Use	-	-	-	-	-	-
<b>ACCELERATED TOTALS</b>	<b>12.49</b>	<b>12.40</b>	<b>13.55</b>	<b>13.35</b>	<b>13.25</b>	<b>65.04</b>
<b>Yearly Totals</b>	<b>30.49</b>	<b>30.40</b>	<b>31.55</b>	<b>31.35</b>	<b>31.25</b>	<b>155.04</b>

### **III Service and Procedural Issues**

19. PGW has served copies of this Petition on the statutory advocates, the active parties in PGW's last distribution base rate case proceeding and the active parties in PGW's Second LTIP proceeding, as shown on the accompanying Certificate of Service. If the Commission concludes that additional notice is necessary, PGW will provide such additional notice as the Commission may direct.
  
20. PGW does not believe that the Third LTIP raises any "material factual issues"<sup>16</sup> and, therefore, is not filing a proposed litigation schedule or written testimony. However, if this Petition is referred to the Office of Administrative Law Judge for hearings and a decision, PGW will submit written testimony in support of its Third LTIP.

### **IV. Conclusion**

21. PGW respectfully requests that the Commission approve PGW's Third LTIP (Attachment "A"). PGW's Third LTIP conforms to the requirements of Act 11 and the Commission's LTIP Regulations and is "adequate and sufficient to ensure and maintain adequate, efficient, safe, reliable and reasonable service"<sup>17</sup>

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<sup>16</sup> 52 Pa. Code § 121.4(c) states, in part, that an "LTIP will be referred to the Office of Administrative Law Judge for hearings and a decision if comments raise material factual issues."

<sup>17</sup> 66 Pa.C.S. § 1352(a)(7).

WHEREFORE, PGW respectfully requests that the Commission:

- a) Approve PGW's Third LTIIP (Attachment A); and
- b) Take any other action deemed to be in the public interest.

Respectfully submitted,

/s/ Craig W. Berry

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Dated: May 3, 2022

**VERIFICATION**

I, Kelly A. DeLussey, hereby state that: (1) I am the Director – Resource Management for Philadelphia Gas Works; (2) the facts above set forth in the foregoing document are true and correct (or are true and correct to the best of my knowledge, information, and belief); and (3) I expect to be able to prove the same at a hearing held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

/s/ Kelly A. DeLussey

Kelly A. DeLussey  
Director, Resource Management  
Philadelphia Gas Works

# ATTACHMENT A

# Philadelphia Gas Works

Long Term Infrastructure Improvement Plan  
For the Period Beginning September 1, 2022 and  
Ending August 31, 2027

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## I. INTRODUCTION

Pursuant to 66 Pa.C.S. § 1352(a) and Pa. Code § 121.5(a), Philadelphia Gas Works (“PGW” or the “Company”) hereby submits its Long-Term Infrastructure Improvement Plan, submitted in accordance with the Order of the Pennsylvania Public Utility Commission (“PUC” or “Commission”) at Docket No. P-2015-2501500.

PGW is owned by the City of Philadelphia and is the largest municipally owned gas utility in the country. PGW is regulated as a “City Natural Gas Distribution Operation” pursuant to the Public Utility Code, 66 Pa.C.S. §102, §2212. PGW manages a distribution system of approximately 6,000 miles of gas mains and service lines<sup>1</sup> supplying approximately 500,000 customers.

By Order entered April 4, 2013, the PUC approved 1) PGW’s proposed Long-Term Infrastructure Improvement Plan (“LTIIIP”), and 2) PGW’s proposed Distribution System Improvement Charge (“DSIC”). PGW’s LTIIIP set out to accelerate the replacement of its “at risk”<sup>2</sup> distribution mains which as of the end of CY 2021 is 56% of its 3,046 miles of main. PGW had historically removed 18 miles of high risk cast iron main each year, financed from funds provided from its base rates. PGW’s approved LTIIIP set forth a plan to replace another seven miles of cast iron main, financed through its DSIC, previously capped at 5% of PGW’s distribution revenues.

On September 1, 2015, PGW applied for a waiver from the PUC to permit it to increase its DSIC cap (and its subsequent annual main replacement) to an amount representing 7.5% of its

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<sup>1</sup> PGW owns and operates all the service lines from the mains to the inlet side of the meters. There are no customer-owned service lines in the PGW service territory. Service lines are also referred to as services.

<sup>2</sup> PGW uses the term “at risk” to mean cast iron and unprotected steel mains. See, P-2015-2501500, St. 1 at 1, fn 1.

annual distribution revenues. PGW's proposal to increase its DSIC percentage cap to 7.5% was approved by the PUC on January 28, 2016, subject to the filing of an amended LTIP within fifteen (15) days of the PUC Order. The Modified LTIP was deemed in compliance with that requirement and was subsequently approved by the Commission on June 9, 2016.

PGW filed its Second LTIP on May 3, 2017. By order entered August 31, 2017 the PUC approved PGW's Second LTIP which outlined a plan to continue acceleration of its Cast Iron Main replacement program eliminating approximately 158 miles of high-risk Cast Iron main during the proposed LTIP Period, 68 Miles of high-risk Cast Iron main was scheduled to be replaced through the accelerated replacement program funded through a DSIC capped at 7.5%, or \$33 million annually and 90 miles was scheduled to be replaced in PGW's baseline Cast Iron removal program financed from funds provided by the company's base rates. PGW is on track to exceed the 158 miles of high-risk Cast Iron main removal outlined in its current LTIP.

PGW herein proposes to continue the acceleration of its cast iron main replacement program to reflect the current the DSIC cap of 7.5%, currently \$38.6 million annually. The continued acceleration of PGW's main replacement program, proposed herein, is estimated to retire all of its cast iron mains in approximately 40 years.

Such an expedited pace should produce the following reliability, safety and cost benefits:

- The reduction of leaks and the concomitant risk of serious incidents from those leaks, compared to what PGW is likely to experience without further acceleration;
- Reduction of breakage repairs and future breakage repair costs, again, compared to the costs it would incur absent acceleration;

- Reductions in leak maintenance and repair on the facilities being removed from service; and
- Improvement in pressure, lower levels of unaccounted-for gas, and methane reduction which should produce greater rate stability for PGW's customers and result in more adequate, efficient, safe, reliable, and reasonable natural gas distribution service.

In sum, continued acceleration of the main replacement program will reduce risk and costs, compared to that which PGW would experience if it did not continue the acceleration of its program.

## **II. LTIP REQUIREMENTS**

On May 23, 2014, the Commission finalized the LTIP Regulations at Docket No. L-2012-2317274. This Docket established the procedures and criteria for the filing, modifying and periodically reviewing a utility's LTIP. The procedures and criteria reflect both Subchapter B requirements and certain provisions in the Commission's Implementation Order<sup>3</sup>, as well as Act 11. As a result, the rulemaking added additional elements, thereby increasing the original seven elements in the LTIP to nine as shown below:

- (1) Identification of types and age of eligible property owned and operated by the utility for which it is seeking DSIC recovery;
- (2) An initial schedule for planned repair and replacement of eligible property;
- (3) A general description of location of eligible property;
- (4) A reasonable estimate of the quantity of eligible property to be improved or

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<sup>3</sup> On August 2, 2012, the Commission issued the Final Implementation Order, at Docket Number M-2012-2293611, establishing procedures and guidelines necessary to implement Act 11.

repaired;

- (5) Projected annual expenditures and means to finance the expenditures;
- (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;
- (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;
- (8) A description of a utility's outreach and coordination activities with other utilities, Department of Transportation and local governments regarding their planned maintenance/construction projects and roadways that may be impacted by the LTIIIP; and
- (9) If a NGDC identifies a critical valve that it will repair, improve upon or replace and for which it will seek DSIC recovery, then it must include such information in its LTIIIP.

This proposed LTIIIP includes all of the required elements identified in Section 1352(a) and the LTIIIP Regulations. The plan identifies how PGW proposes to expend the DSIC revenues in the next five (5) Fiscal Years (FY 2023 – FY 2027).

### **III. THE LONG-TERM INFRASTRUCTURE IMPROVEMENT PLAN**

PGW's second LTIIIP was approved by the Commission on August 31, 2017 and covered the five year period September 1, 2017 through August 31, 2022 (PGW's Fiscal Years 2018

through 2022) after four (4) years, as observed below, PGW continues to exceed the main replacement goals set forth in its current LTIIP.<sup>4</sup>

QUANTITIES	FY 2018		FY 2019		FY 2020		FY 2021		Totals	
	LTIIIP	Actual	LTIIIP	Actual	LTIIIP	Actual	LTIIIP	Actual	LTIIIP Totals	Actual Totals
<b>CURRENT BASELINE PROGRAM</b>										
8" & Smaller LP/IP	18.00	18.51	18.00	18.10	18.00	18.05	18.00	17.45	72.00	72.11
12" & Larger LP/IP	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.59	0.00	0.59
12" & Larger HP*	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	0.00	0.00
<b>BASELINE TOTALS</b>	<b>18.00</b>	<b>18.51</b>	<b>18.00</b>	<b>18.10</b>	<b>18.00</b>	<b>18.05</b>	<b>18.00</b>	<b>18.05</b>	<b>72.00</b>	<b>72.71</b>
<b>ACCELERATED PROGRAM</b>										
12" & Larger HP*	5.50	5.34	5.50	5.79	5.30	5.72	5.25	5.51	21.55	22.36
12" & Larger LP/IP	1.30	1.54	1.35	0.64	1.40	0.59	1.34	1.15	5.39	3.92
8" & Smaller LP/IP	7.00	8.47	7.00	10.06	7.00	2.97	7.00	12.78	28.00	34.28
Abandonment for Non-Use	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	0.00	0.00
<b>ACCELERATED TOTALS</b>	<b>13.80</b>	<b>15.35</b>	<b>13.85</b>	<b>16.49</b>	<b>13.70</b>	<b>9.28</b>	<b>13.59</b>	<b>19.44</b>	<b>54.94</b>	<b>60.56</b>
<b>Yearly Totals</b>	<b>31.80</b>	<b>33.86</b>	<b>31.85</b>	<b>34.59</b>	<b>31.70</b>	<b>27.33</b>	<b>31.59</b>	<b>37.49</b>	<b>126.94</b>	<b>133.27</b>

Figure 1 – Cast Iron Main Reduction Schedule FY 2018– FY 2021

This increased pace of replacement can be attributed principally to PGW’s ability to more efficiently utilize the dollars made available from the DSIC due to experience with contractors and the main replacement process itself. Although PGW has made substantial strides in the accelerated removal of “at-risk” main over the past four (4) years, continued acceleration of the program is warranted due to the following statistics:

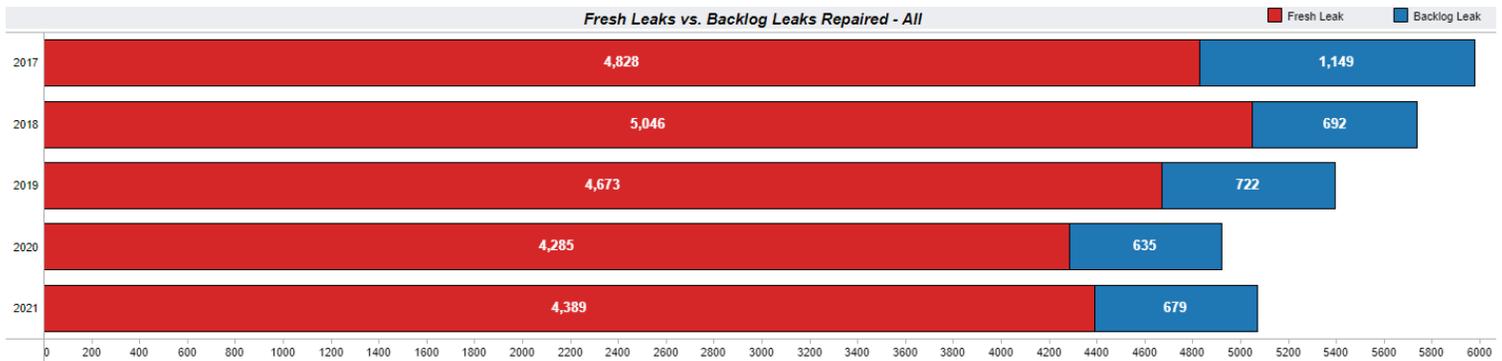
- At the end of calendar year 2021, PGW had approximately 3046 miles of gas main, comprised of 1246 miles of cast iron and 469 miles of

<sup>4</sup> As explained in the FY 2021 Asset Optimization Plan submission, PGW experienced a shortfall in FY 2020 which occurred as a direct result of the COVID-19 Pandemic. PGW exceeded the FY 2021 goal by 5.9 miles to make up for the 4.37 mile shortfall in FY 2020. 2.83 miles of 12” and Larger LP/IP is scheduled for replacement in 2022 which will take the 12” and larger LP/IP category over the projected goal.

unprotected coated steel. Therefore, 56 percent of PGW’s distribution system is comprised of “at-risk” main.

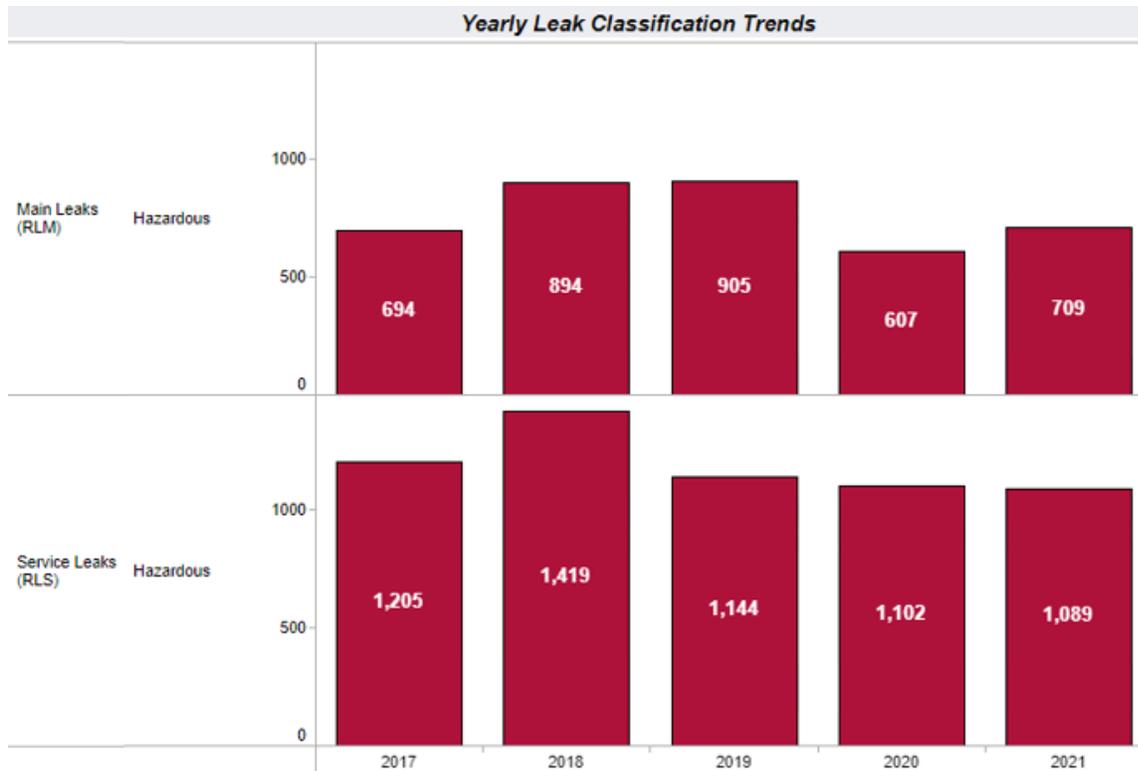
- PGW’s gas mains are some of the oldest in the state, with more than 956 miles installed pre-1940 at the end of calendar year 2021
- PGW repaired more than 5,900 leaks in 2017. The next three (3) calendar years show a decrease in the number of leaks repaired.

Although there was a slight increase in repaired leaks in calendar year 2021, the overall trend in repaired leaks continues to be downward.



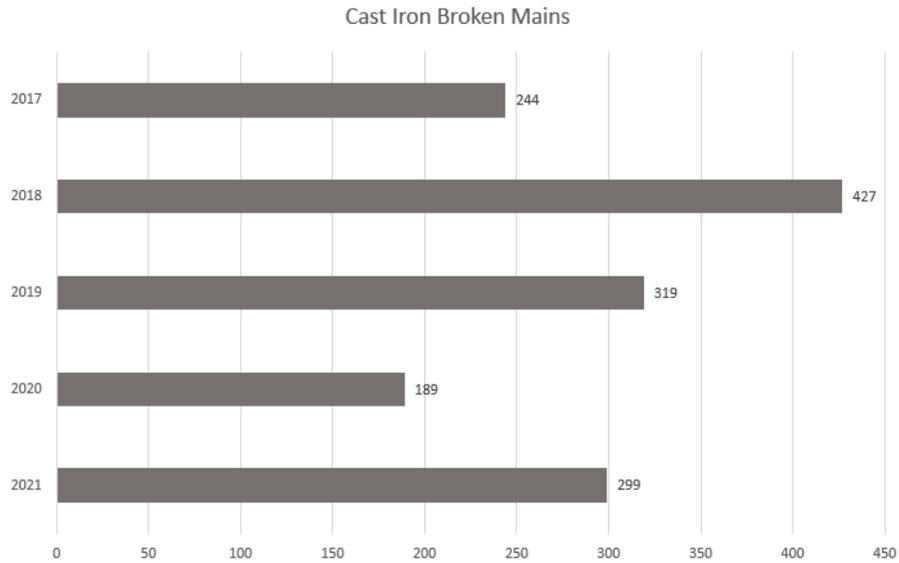
**Figure 2 – Total Leaks Permanently Repaired CY 2017 – CY 2021**

- PGW had a total of 1,899 hazardous leaks on its mains and services in 2017 and 2,313 leaks on its mains and services in 2018. The next two (2) calendar years show a decrease in the number of hazardous leaks repaired. Although there was a slight increase in hazardous leaks in 2021, the overall trend in hazardous leaks continues to be downward.



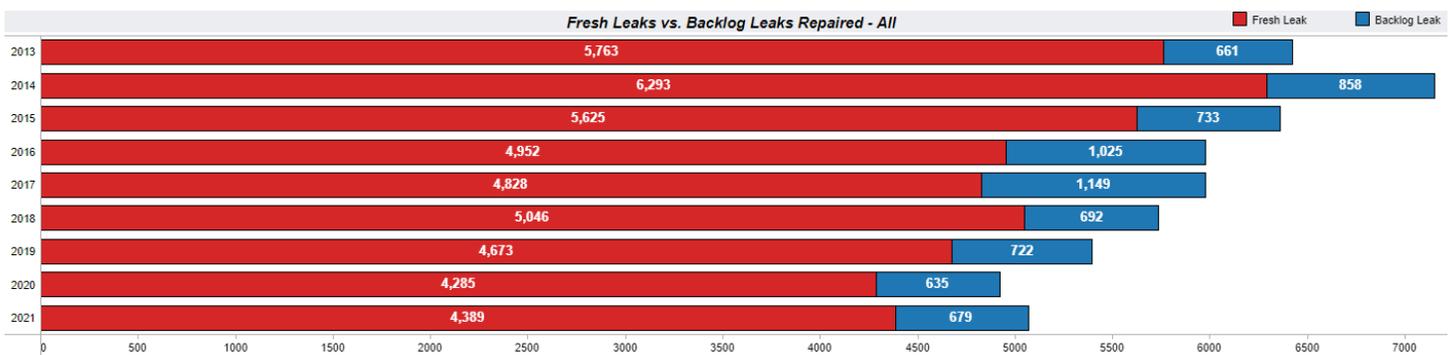
*Figure 3 – Total Hazardous Leaks Permanently Repaired CY 2017 – CY 2021*

- From 2017 to 2018, PGW experienced a 75 percent increase in cast iron main breaks. Over the next two (2) calendar years, PGW experienced decreases in the amount of cast iron main breaks of 25 percent and 41 percent, respectively. PGW experienced a four (4) year low in the number of broken mains in CY 2020. Although there was an increase in cast iron main breaks in 2021, the overall trend in cast iron main breaks continues to be downward.



**Figure 5 – Cast Iron Main Breaks CY 2017 – CY 2021**

The accelerated main replacement program coupled with the prioritized removal of “at-risk” main segments and warmer than average winter seasons has attributed to these downward trends in most recent years. Since the inception of the accelerated main replacement program, PGW has seen a steady decline in leaks with the exception of 2014 and 2021.



**Figure 6 - Total Leaks Permanently Repaired CY 2013 – CY 2021**

Based on these statistics and in accordance with the Commission’s approval of the DSIC cap waiver, the sections below identify how PGW proposes to expend the DSIC revenues pursuant to the elements identified in Section 1352(a) and the LTIP Regulations.

1. Identification of the types and age of eligible property owned and operated by the utility for which it is seeking DSIC recovery

PGW utilized its Distribution Integrity Management Program (“DIMP”) to formulate this proposed LTIP. PGW’s DIMP demonstrates that PGW understands its distribution system, identifies relevant threats posed on its distribution system, evaluates and ranks the risks posed by the identified threats accordingly, develops strategies to mitigate these risks and measure performance and evaluate effectiveness of the strategies selected to mitigate the risks.

PGW utilizes the relative risk ranking model patterned after GPTC threat identification and enhanced performance variance monitoring. This model allows PGW to better identify the high-risk assets needing to be addressed to reduce overall risk. Once an asset has been identified and ranked accordingly, PGW utilizes Mains Replacement Prioritization (MRP) software to find the section(s) of pipe deemed to be most “at-risk” and in need of replacement or removal from the distribution system. The relative risk ranking and performance variance monitoring components are the primary elements utilized to develop this proposed LTIP.

PGW’s relative risk ranking model, as incorporated into PGW’s DIMP, has identified the following groups of high-risk facilities that will be prioritized for removal:

<b>Asset Group</b>	<b>Material</b>	<b>Size Group</b>	<b>Pressure</b>
Service	Steel	1-1/4 and Smaller	Low
Main	Cast Iron	6" and Smaller	Low
Main	Cast Iron	12" and Larger	All Pressures

*Figure 6 – DIMP Relative Risk Rankings*

In addition to Evaluating and Prioritizing risk<sup>5</sup>, PGW is also required to monitor performance measures and evaluate the effectiveness of the additional and accelerated actions<sup>6</sup>. This analysis is critical in identifying the appropriate amount of each category to be addressed.

DNV / GL (formerly d/b/a GL Noble Denton, formerly d/b/a Advantica) performed a comprehensive benchmarking / prioritization analysis on all metallic mains within PGW's distribution system to determine an appropriate annual replacement strategy to reduce risk in 2015. DNV / GL utilized PGW's leak history and readings discovered at front foundation walls (FFW) to develop a formula to measure system risk. This data was inputted into the Mains Replacement Prioritization software and several different annual replacement scenarios were run to determine suitable replacement scenarios for PGW to consider. Based on the scenarios that were analyzed, DNV / GL recommended that PGW adopt a strategy of replacing between 30 to 50 miles of the MRP suggested mains per year. PGW has continued to replace the recommended mileage originally identified in the benchmarking study in order to adequately reduce system risk.

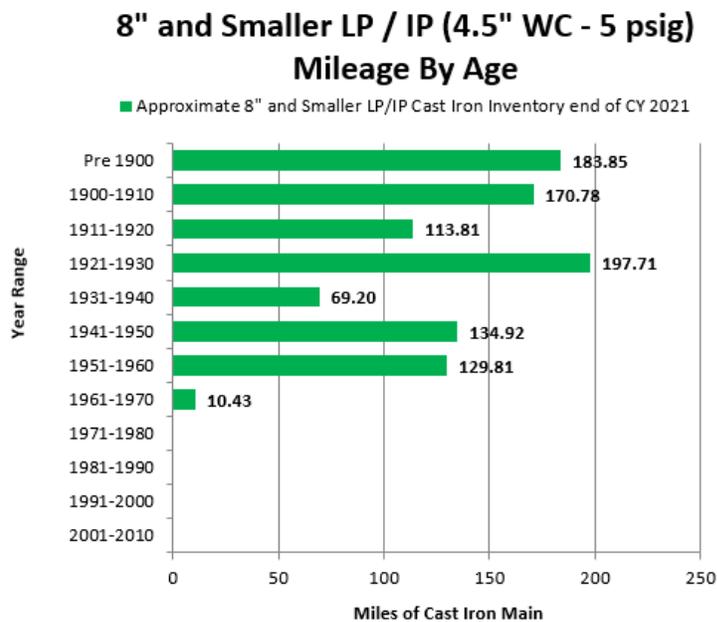
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<sup>5</sup> 49 CFR § 192.1007(c).

<sup>6</sup> 49 CFR § 192.1007(f).

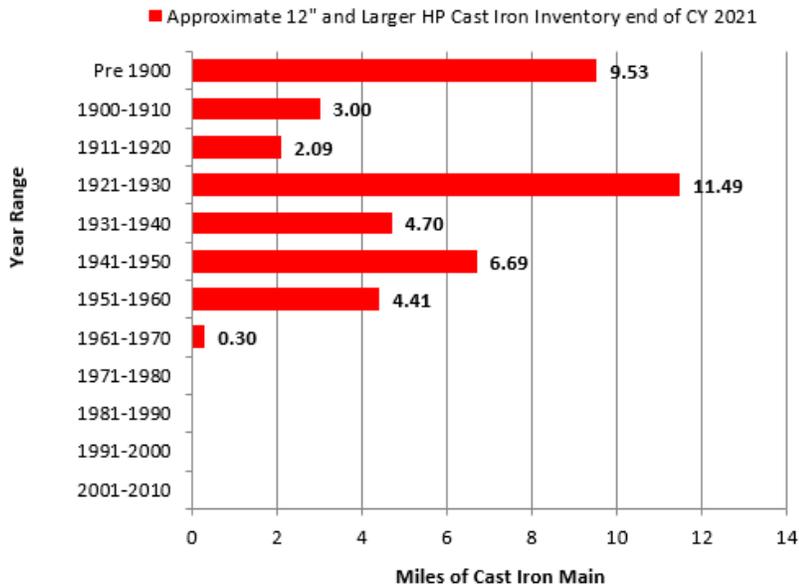
As discussed above, the DIMP relative risk ranking model and associated performance monitoring were the basis of the formulation of this proposed LTIIP. The prioritization study performed by DNV / GL confirmed the asset groups to target and the appropriate overall annual mileage of main to be addressed to reduce risk. The Mains Replacement Prioritization software will be utilized to target the specific main segments within the DIMP identified asset groups for replacement.

Below are the age profiles of the asset groups targeted for further acceleration under this proposed LTIIP:



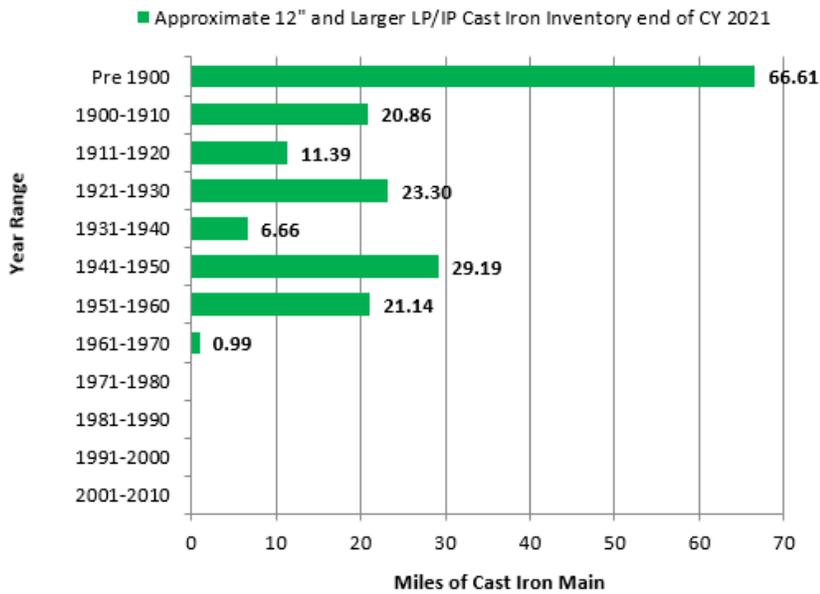
*Figure 7 – Cast Iron, Small Diameter, Low/Int Pressure Main Mileage by Decade*

## 12" and Larger HP (10-35 psig ) Mileage By Age



*Figure 8 – Cast Iron, Large Diameter, High Pressure Main Mileage by Decade*

## 12" and Larger LP / IP (4.5" WC - 5 psig) Mileage By Age



*Figure 9 – Cast Iron, Large Diameter, Low/Int Pressure Main Mileage by Decade*

2. An initial schedule for the planned repair and replacement of eligible property

The period of PGW’s proposed LTIIIP, as described in the following table, will eliminate approximately 65 miles of cast iron main in the accelerated program. Concurrent with this continued acceleration of the program, PGW will remove 18 miles of cast iron main per year as part of its baseline main replacement program. The combined amount of cast iron main removed from inventory during the proposed LTIIIP period will be approximately 155 miles.

<i>Long Term Infrastructure Improvement Program</i>						
<i>Annual Schedule of Quantities</i>						
<i>Period FY 2023 - FY 2027</i>						
<i>Quantities</i>	<i>FY 2023</i>	<i>FY 2024</i>	<i>FY 2025</i>	<i>FY 2026</i>	<i>FY 2027</i>	<i>Cumulative Totals</i>
<b>CURRENT BASELINE PROGRAM</b>						
8" & Smaller LP/IP	18.00	18.00	18.00	18.00	18.00	90.00
<b>ACCELERATED PROGRAM</b>						
8" & Smaller LP/IP	7.00	7.00	8.25	8.25	8.25	38.75
12" & Larger All Pressures	5.49	5.40	5.30	5.10	5.00	26.29
Abandonment for Non-Use	-	-	-	-	-	-
<b>ACCELERATED TOTALS</b>	12.49	12.40	13.55	13.35	13.25	65.04
<b>Yearly Totals</b>	<b>30.49</b>	<b>30.40</b>	<b>31.55</b>	<b>31.35</b>	<b>31.25</b>	<b>155.04</b>

*Figure 10 – LTIIIP Quantity Schedule*

All of the above property to be replaced is characterized as piping, couplings and valves and are “DSIC eligible”, under Act 11. PGW also plans to replace the unprotected bare and unprotected coated steel services and meter sets associated with these cast iron mains.

3. A general description of location of eligible property

PGW's authorized service territory is bound by the limits of the City of Philadelphia in which all eligible property is located within these limits.

- As of end of CY 2021, there were approximately 1,010 miles of 8" and smaller, low / intermediate pressure (4.5 inch WC to 5 psig), cast iron main, of which 128.75 miles are proposed to be removed from inventory during the proposed LTIIP period.
- There are currently approximately 222 miles of 12" and larger, all pressure (4.5 inch WC to 35 PSIG), cast iron main, of which 26.29 miles are proposed to be removed from inventory during the proposed LTIIP period.

4. A reasonable estimate of quantity of eligible property to be improved or repaired

The information responsive to item 4 is included in items 2 and 5.

5. Projected annual expenditures and means to finance the expenditures

PGW's current base line main replacement program removes 18 miles of cast iron main annually and the Company will seek recovery, via the DSIC, for expenditures above the cost of the base line program on a pay as you go basis ("paygo") through its DSIC mechanism. More specifically, PGW does not plan to issue any long-term debt to fund its accelerated main replacement program. Rather, it will utilize the approved 7.5% DSIC surcharge for the recovery of \$38.6 million, annually.

<i>Long Term Infrastructure Improvement Program</i>						
<i>Annual Schedule of Quantities</i>						
<i>Period FY 2023 - FY 2027</i>						
<i>Expenditures</i>	<i>FY 2023</i>	<i>FY 2024</i>	<i>FY 2025</i>	<i>FY 2026</i>	<i>FY 2027</i>	<i>Cumulative Totals</i>
<b>CURRENT BASELINE PROGRAM</b>						
8" & Smaller LP/IP	\$25,660,800	\$26,558,928	\$27,488,490	\$28,450,588	\$29,446,358	\$137,605,164
<b>ACCELERATED PROGRAM</b>						
8" & Smaller LP/IP	\$9,979,200	\$10,328,472	\$12,598,891	\$13,039,853	\$13,496,248	\$59,442,664
12" & Larger All Pressures	\$28,906,416	\$28,481,991	\$26,146,588	\$25,508,937	\$25,250,555	\$134,294,488
Abandonment for Non-Use	-	-	-	-	-	-
<b>ACCELERATED TOTALS</b>	<b>\$38,885,616</b>	<b>\$38,810,463</b>	<b>\$38,745,480</b>	<b>\$38,548,790</b>	<b>\$38,746,803</b>	<b>\$193,737,152</b>
<b>Yearly Totals</b>	<b>\$64,546,416</b>	<b>\$65,369,391</b>	<b>\$66,233,970</b>	<b>\$66,999,378</b>	<b>\$68,193,161</b>	<b>\$331,342,316</b>

*Figure 11 – LTIIIP Expenditure Schedule*

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 discussed in the section above, PGW’s “paygo” method is the least costly to customers, compared to the issuance of long-term bonds. That being said, PGW’s approved LTIIIP contains a number of measures to ensure that it is implemented in a cost-effective manner, including: utilizing a competitive bidding process for all relevant aspects of the program and prioritizing high risk main which tend to be the most likely to leak and/or break, thus reducing maintenance costs compared to that which the Company would experience if it did not further accelerate its replacement program. PGW proposes to continue these measures in its 2023-2027 LTIIIP.

In addition, the incremental cost to customers is small when compared to the noticeable benefits. The value of accelerated distribution infrastructure improvement is substantial, benefiting customers today and well into the future with adequate, efficient, safe, reliable, and reasonable natural gas distribution service.

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*

As discussed in earlier sections of this document, PGW's base line main replacement program removes 18 miles of 8" and smaller cast iron main and associated steel services annually. To ensure the LTIP is successful, PGW currently has departmental structures and staffing in place for the contracting, execution, and cost control of main replacement projects. In addition, as part of a stipulation entered between PGW and BIE in its 2015 Proceeding to increase its DSIC cap, PGW agreed that it would "show how PGW intends to train staff and contractors to meet the Operator Qualification requirements of 49 CFR Subpart N and to otherwise demonstrate that it will have qualified personnel available to accomplish the accelerated main replacement authorized by the PGW Petition."<sup>7</sup>

PGW's Procurement Section administers a standard process contract bid procedure (adopted from the City of Philadelphia's procurement rules) for soliciting contractors to perform main installation and paving restoration as part of the main replacement program. This process includes the following:

- Identification of Vendors
- Issuance of the Request for Quotation (RFQ)
- Bid Evaluation and Vendor Selection
- Internal Accounting Approvals / Board Approvals
- Awarding of Bid / Collection of Performance Bonds and Insurance Certificates

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<sup>7</sup> *Petition of Philadelphia Gas Works for Waiver of Provisions of Act 11 to Increase the Distribution System Improvement Charge CAP and to Permit Levelization of DSIC Charges*, Docket Nos. P-2015-2501500, C-2015-2504092, Stipulation between PGW and I&E, dated November 4, 2015, and admitted into the record during the November 5, 2015, evidentiary hearing.

Contractors for this specific type of work are qualified by PGW prior to being invited to bid. The qualification includes review of background information such as financial statements, safety performance, minority participation performance and training records.

After the contract is awarded, the Construction Section of PGW's Distribution Department is responsible for the execution of the contract. This group schedules, monitors and evaluates overall program / project progress and associated costs.

Third party contractors and PGW skilled workers are utilized for all main replacement projects. Third party contractors excavate, install, pressure test with air and backfill new mains under the direct supervision of a qualified PGW Construction Inspector. The Construction Inspector is required to monitor whether PGW's installation standards, safety performance standards and all contractual obligations are met.

Once the new main has been installed and tested, PGW's workforce energizes the new main, replace existing steel services or reconnect existing plastic services and de-energize the existing main under the supervision of a PGW Construction Supervisor. Under certain circumstances such as short unanticipated cutouts or small replacement projects, PGW crews are also utilized to install main.

In addition to the previously listed activities, contractors qualified to work on live gas may also energize the new main, replace existing steel services or reconnect existing plastic services and de-energize the existing main under the supervision of a PGW Construction Supervisor and PGW Construction Inspector.

PGW utilizes project managers to oversee the construction and cost management activities associated with main replacement projects. Each main replacement project is assigned

a Field Supervisor to monitor the quality and timeliness of work, safety performance and customer satisfaction of the work performed by PGW's workforce.

In addition to PGW's current workforce structure for main replacement, proactive measures have been taken to increase the probability of a successful accelerated main replacement program. These measures include, but are not limited to the following:

- PGW has contracts with multiple consultants for the majority of main replacement design work to prepare construction drawings and associated documents. The use of these design consultants has helped with the increased drawing/document preparation workload related to the accelerated main replacement program.
- PGW has successfully solicited the services of additional outside contractors to perform main installation. PGW continues to qualify additional contractors on smaller, "pilot" projects in order to assess the performance of these contractors. The introduction of new contractors will keep contract costs competitive. Additionally, PGW currently utilizes 6 qualified contractor companies trained to work on live gas.

PGW's Distribution Department currently employs skilled workers to perform operation, maintenance and construction activities on PGW's distribution system. These employees are trained and qualified to the standards set forth in US Department of Transportation, Office of Pipeline Safety Regulation Title 49 CFR 192 Subpart N via PGW's Natural Gas Pipeline System Operator Qualification Plan which went into effect on April 26, 2001 and is reviewed yearly.

The purpose of the above-mentioned Natural Gas Pipeline System Operator Qualification Plan is to ensure safe and efficient natural gas service by establishing objective criteria for the required qualifications for all persons performing safety-sensitive operations and maintenance tasks on PGW's gas piping system. This plan also ensures, through evaluation, that each person

performing safety sensitive tasks on PGW's pipeline system is: 1) able to perform these tasks; 2) able to recognize and respond appropriately to abnormal operating conditions; and 3) able to maintain necessary records to administer this plan.

PGW has a dedicated Training Section which provides classroom training as well as simulated and/or actual field training for each PGW promotional job title. Every employee is tested on their ability to perform every assigned task within an associated job title. Employees are evaluated on their knowledge, skill and ability related to each task as well as their ability to react to abnormal operating conditions.

In addition to the classroom training for promotional job titles, PGW has instituted annual training classes for all field and management personnel which covers such tasks as: proper trench shoring techniques, leak investigation & migration practices, damage prevention methodologies, proper use of gas detection instrument, plastic pipe fusion qualifications, steel pipe welding qualifications and proper respirator use.

In addition to the financial and technical screening performed by the Procurement Section, the Training Section tests and qualifies PGW's outside contractor workforce in plastic pipe fusion and steel welding practices. In addition, PGW's training Section has established procedures to qualify contractors for live gas work.

PGW contracted with Northeast Gas Association to provide a first responder E learning portal that is available to all first responders. This training offers a self-directed interactive online training package that provides emergency response personnel with information they need to safely identify and respond to incidents that may involve natural gas pipelines and other natural gas facilities. PGW believes that this E learning portal enhances the cooperation and effectiveness of first responders in a natural gas-related emergency.

PGW believes that the above described workforce management and training plans will ensure that it will have access to a qualified workforce to perform its proposed LTIP and that it will be able to do so in a cost-effective, safe and reliable manner.

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 LTIP*

PGW's Enforced Replacement Program is used to manage the replacement of mains and services affected by others. Coordination with outside agencies is the main part of this program. There are several types of enforced replacements, the most common of which are due to the Philadelphia Water Departments ("PWD")'s water and sewer main replacement, PENNDOT's highway reconstruction projects and the City of Philadelphia's paving projects. In each scenario, there are several checks and balances to identify any potential conflicts. Design One Calls, the City's GPIS permitting system, shared GIS layers, and Committee of Highway Supervisors' meeting are examples.

Once conflicts are identified, coordination meetings for individual projects are set up between the various agencies. The proposed infrastructure improvements are overlaid onto PGW's Detail Main Maps (DMMs) to determine the extents of the conflict. PGW will look for slope interference, undermining and direct interference to determine whether its facilities will need to be replaced. Additional factors such as the age, material, maintenance history, services and the paving requirements for the other utility will be factored into the decision of whether additional mains will be replaced.

In addition to conflict resolution for proposed infrastructure projects, PGW utilizes the City's GPIS permitting system as a preventative measure to identify conflicts with the various City/State paving programs. Additionally, PGW, PWD and the City of Philadelphia have

embarked on a new method of long-term planning and paving coordination using GIS. PGW and PWD share a layer of their projects that are projected to go to construction within the next 3-5 years which is used by the City of Philadelphia to select their paving routes. PGW enters in multiple years' worth of proposed replacement projects at a very preliminary stage to present a conflict when the city is scheduling their paving. When the conflict is identified, PGW will work with the city to coordinate our replacement project around their paving schedule.

9. *If a NGDC identifies a critical valve that it will repair, improve upon or replace and for which it will seek DSIC recovery, then it must include such information in its LTIP*

PGW has not currently identified any critical valves for repair, improvement, or replacement in the proposed LTIP period for recovery through the DSIC mechanism. Should critical valves be identified for repair, improvement, or replacement for recovery through the DSIC mechanism, PGW will modify the LTIP accordingly.

#### **IV. CONCLUSION**

In summary, PGW's proposed LTIP satisfies the requirements set forth in Section 1352(a) and the LTIP requirements by:

- identifying the age and type of eligible property owned or operated by the utility for which the utility will seek recovery;
- providing a schedule depicting the amount of projected expenditures and proposed quantity of eligible property targeted for replacement or removal from the distribution system;
- providing a general description of the location of the eligible property;
- providing a reasonable estimate of the quantity of property to be improved;

- projecting annual expenditures and measures to ensure that the plan is cost effective;
- providing the manner in which replacement of aging infrastructure will be accelerated and how repair, improvement or replacement will maintain safe and reliable service;
- providing a workforce management and training program;
- providing a description of the utility's outreach and coordination activities with other utilities, the Department of Transportation and local governments; and
- identifying critical valves that it will repair, improve upon or replace and for which it will seek DSIC recovery.

As a result of the foregoing, PGW's proposed LTIP is adequate and sufficient to ensure and maintain adequate, efficient, safe, reliable, and reasonable service. Accordingly, PGW respectfully requests that the Commission approve this Plan.