Lindsay A. Berkstresser, Esq.

UGI Corporation
500 North Gulph Road
King of Prussia, PA 19406

(610) 768-6799
berkstresserl@ugicorp.com

August 16, 2024

VIA ELECTRONIC FILING

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

Re: Petition of UGI Utilities, Inc. – Gas Division for Approval of its Third Long Term Infrastructure Improvement Plan - Docket No.

Dear Secretary Chiavetta:

Enclosed for filing is the Petition of UGI Utilities, Inc. – Gas Division for Approval of its Third Long Term Infrastructure Improvement Plan. A CONFIDENTIAL version of the Petition is being submitted via the Pennsylvania Public Utility Commission's SharePoint. Confidential material will be made available to parties pursuant to an appropriate nondisclosure agreement.

Copies will be provided as indicated on the Certificate of Service.

Very truly yours,

Lindsay A. Berkstresser

Lindsay A. Berkstresser
Counsel for UGI Utilities, Inc.

Enclosure
cc: Certificate of Service

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Petition of UGI Utilities, Inc. – Gas Division for Approval of its Third Long Term Infrastructure Improvement Plan	: : :	Docket No. P-2024-_____

Petition of UGI Utilities, Inc. – Gas Division for Approval of its Third Long Term Infrastructure Improvement Plan

---

Pursuant to Act 11 of 2012 ("Act 11" or the "Act"), which amended Chapters 3, 13 and 33 of the Pennsylvania Public Utility Code ("Code"), UGI Utilities, Inc. – Gas Division ("UGI-Gas" or the "Company") hereby files this Petition seeking approval of its Third Long Term Infrastructure Improvement Plan ("Third LTIIP" or "Plan"). This filing also is being made pursuant to the Final Implementation Order of the Pennsylvania Public Utility Commission (the "Commission") entered at Docket No. M-2012-2293611 on August 2, 2012,[1] and the Commission's regulations at 52 Pa. Code § 121.1 *et. seq*.

The Third LTIIP (attached as Exhibit A) will succeed the Company's Second LTIIP, which was approved by the Commission's Order entered December 19, 2019.[2] UGI Gas proposes to continue the significant distribution system evaluation, repair, improvement and replacement program reflected in its Initial and Second LTIIPs, which focused primarily on those portions of its system that were constructed using cast iron and bare steel pipe. As described in the Third

[1] *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Pa. Pub. Util. Comm'n Aug. 2, 2012) ("Final Implementation Order").

[2] *See Petition of UGI Utilities, Inc. – Gas Division for Approval of its Second Long-Term Infrastructure Improvement Plan,* Docket No. P-2019-3012337 (Order entered December 19, 2019).

LTIIP, UGI Gas will build off of the significant acceleration in the rate of infrastructure repairs, improvements and replacements, including the accelerated replacement of cast iron and bare steel pipe that was achieved by the Initial and Second LTIIPs, and will reflect elements of further acceleration. In addition, UGI Gas has identified priority plastic pipe, installed between 1965 and 1985, for inclusion in the Third LTIIP.

Moreover, during the five-year term of the Third LTIIP, UGI Gas will invest approximately $1.7 billion on infrastructure improvements that will strengthen and modernize distribution facilities serving customers throughout the Company's service territory. With these investments, the Company anticipates replacing a total of 310-340 miles of cast iron, bare steel, wrought iron and priority plastic main during the term of the Third LTIIP. As detailed herein and in the Plan, the Third LTIIP contains all of the elements specified in 66 Pa. C.S. § 1352(a) and 52 Pa. Code § 121.3 and therefore complies with Section 1352(a)(7). By this Petition, the Company respectfully requests that the Commission approve UGI Gas's Third Long Term Infrastructure Improvement Plan.

I. INTRODUCTION

1. UGI Utilities, Inc., is a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, having two divisions, the Gas Division and the Electric Division. UGI Gas is engaged in the business of selling and distributing natural gas to retail customers within the Commonwealth, and is therefore a "public utility" within the meaning of Section 102 of the Public Utility Code, 66 Pa. C.S. § 102, subject to the regulatory jurisdiction of the Commission. UGI Gas serves approximately 700,000 residential, commercial and industrial natural gas customers located in 45 of Pennsylvania's total 67 counties and spanning more than 700 municipalities. As of December 31, 2023, the Company operates approximately 12,400 miles of

gas distribution mains and 260 miles of gas transmission mains in the Commonwealth of Pennsylvania.

2. The names, addresses and telephone numbers of UGI Gas's attorneys for purposes of this filing are as follows:

Michael S. Swerling (ID # 94748)
UGI Corporation
500 North Gulph Road
King of Prussia, PA 19406
Phone: 610-992-3763
Fax: 610-992-3258
E-mail: SwerlingM@ugicorp.com

Lindsay A. Berkstresser (ID # 318370)
UGI Corporation
500 North Gulph Road
King of Prussia, PA 19406
Phone: 610-768-6799
E-mail: BerkstresserL@ugicorp.com

UGI Gas's attorneys are authorized to receive all notices and communications regarding this filing.

3. Act 11 of 2012 ("Act 11") authorizes NGDCs to establish a Distribution Service Improvement Charge ("DSIC"). *See* 66 Pa. C.S. § 1353. NGDCs may implement a DSIC to recover reasonable and prudent costs incurred to repair, improve or replace certain eligible property that is part of the utility's distribution system. Eligible property for NGDCs is defined in Section 1351 of the Public Utility Code. *See* 66 Pa. C.S. § 1351(2). As a precondition to establishing or continuing a DSIC, each utility must file and maintain an LTIIP with the Commission that is consistent with the provisions of Section 1352 (66 Pa. C.S. § 1352(a)) and 52 Pa. Code § 121.3.

4. On August 2, 2012, the Commission issued a Final Implementation Order establishing procedures and guidelines necessary to implement Act 11. *Implementation of Act 11 of 2012*, Docket No. M-2012-2293611 (Pa. Pub. Util. Comm'n Aug. 2, 2012). The Final

Implementation Order adopted the requirements established in Section 1352, provided additional standards that each LTIIP must meet, and guided utilities on meeting the Commission's standards. The standards and guidance adopted in the Final Implementation Order are reflected in Chapter 121 of the Commission's regulations. *See* 52 Pa. Code § 121.1 *et. seq*.

5. Specifically, 66 Pa C.S. § 1352 and 52 Pa. Code § 121.3(a) provide that the LTIIP must include the following eight major elements:

(a) Types and age of eligible property;

(b) Schedule for planned repair and replacement;

(c) Location of eligible property;

(d) Reasonable estimate of the quantity of property to be improved;

(e) Projected annual expenditures and means to finance the expenditures;

(f) Manner in which replacement of aging infrastructure will be accelerated and how repair, improvement or replacement will maintain safe and reliable service;

(g) A workforce management and training program; and

(h) Outreach and coordination activities with other utilities, Department of Transportation and local governments.

6. UGI Gas's Third LTIIP addresses the elements identified in 66 Pa C.S. § 1352 and 52 Pa. Code § 121.3(a), as summarized in this Petition, and therefore should be approved.

II. BACKGROUND

7. On August 21, 2019, UGI Gas filed its *Petition for Approval of its Second Long-Term Infrastructure Improvement Plan* at Docket No. P-2019-3012337. In its Second LTIIP, the Company identified its plan to continue the accelerated rate of infrastructure replacement identified in the Initial LTIIP, which included replacing all of its cast iron main over the 13-year period ending in February 2027 and all of its bare steel mains by 2041. In addition, other categories

of infrastructure repair and replacement work, which would be addressed in the five-year period covered by the LTIIP, were identified.

8. The Commission approved the LTIIP at Docket No. P-2019-3012337 in an order entered on December 19, 2019. The Second LTIIP covers the period from 2020-2024.

9. UGI Gas is filing its Third LTIIP for the period 2025-2030.

III. UGI GAS'S THIRD LONG TERM INFRASTRUCTURE IMPROVEMENT PLAN

10. In this Petition, UGI Gas submits its Third LTIIP for Commission review and approval. UGI Gas has been identifying and repairing, improving, or replacing its distribution infrastructure on an accelerated basis, consistent with its obligations and commitments as described in the Initial and Second LTIIPs. UGI Gas's Third LTIIP continues the pre-existing process established in the Initial and Second LTIIPs to accelerate replacement of its distribution infrastructure. The Company describes in detail the success of its efforts under its Initial and Second LTIIPs in pages 2 through 8 of its Third LTIIP.

11. Continuing UGI Gas's infrastructure replacement program (as proposed in the Third LTIIP) will allow the Company to provide safe and reliable service both now and into the future. These replacements will make the system safer, more reliable, and easier to operate.

12. For the purposes of the Third LTIIP, UGI Gas will maintain the cast iron replacement deadlines that were reflected in its Initial LTIIP, *i.e.*, 2027, although the Company is likely to complete its replacement activities in advance of this deadline. At the rate of bare steel replacement reflected in the Third LTIIP, and continued into the future with the necessary regulatory approvals, the Company will be on pace to replace all bare steel main by 2041. For any given intermediate period, the sequence of projects and amount of specific facilities to be addressed may be adjusted in response to changing conditions. A variety of factors intrinsic to the natural gas distribution business may cause these changes to occur. These factors include, but are

not limited to, state and municipal relocation projects, other private construction projects, system upgrades due to pressure requirements, regulatory changes, and legislative changes.

13. In its Third LTIIP, UGI Gas has committed to replacing identified priority plastic pipe, in addition to cast iron and bare steel pipe. Currently, UGI Gas has identified approximately 247 miles of priority plastic pipe on its system. UGI Gas intends to continue evaluating the plastic pipe on its system to identify priority pipe, which is made up of certain older vintage resin composites that are more susceptible to failure under certain condition as compared to current resin composites. UGI Gas's plan for priority plastic is explained on pages 14-15 of the Third LTIIP.[3]

14. It is anticipated that UGI Gas will replace approximately 50-60 miles of main in 2025. Over the duration of the Third LTIIP, the Company will remove between 310-340 miles of cast iron, bare steel, wrought iron and priority plastic main.

15. UGI Gas's Third LTIIP includes a variety of system enhancements beyond main replacement activities. This includes focusing resources on addressing potential risks associated with mechanical tees. Pursuant to the settlement at Docket No. C-2018-3005151 ("2018 Settlement"),[4] UGI Gas agreed in relevant part to budget mechanical tee remediation activities at no less than $3.1 million a year between fiscal years 2020 through 2024. Since 2020, UGI Gas has excavated 26,226 suspected mechanical tee locations and remediated 7,446 mechanical tees. Between 2020 and March 2024, UGI Gas met or exceeded its annual budgeted commitment and spent $46.4 million. As part of the 2018 Settlement, UGI Gas also agreed to submit a study by the end of fiscal year 2024 proposing its future plans for continued mechanical tee remediation.

[3] *See* Motion of Chairman Stephen M. DeFrank, Replacement of Older Plastic Pipe in Natural Gas Distribution Systems (Public Meeting Held Aug. 1, 2024) (emphasizing the importance of focusing on the replacement of older plastic pipe simultaneously with cast iron and bare steel pipe).

[4] *See* Opinion and Order at 13.

As discussed on pages 15-16 of the Third LTIIP, UGI Gas has completed this study as provided in Appendix B to the Third LTIIP.[5]

16. UGI Gas's Third LTIIP addresses ongoing investments in transmission infrastructure that are necessary to maintain its assets in accordance with newly introduced regulations pertaining to transmission pipelines at 49 CFR § 192.624 regarding MAOP reconfirmation for steel transmission pipelines, as discussed on pages 16-19 of the Third LTIIP.

17. UGI Gas's Third LTIIP also addresses its plans to ensure the continued safe and reliable operation of certain DSIC-eligible facilities, including gas service lines, excess flow valves, meter replacements and move-outs, city gate and district regulator stations, farm taps, system reliability improvements, and mandated facility relocations, as described on pages 19-25.

18. This comprehensive Plan will allow UGI Gas to remove aging portions of its system and enhance safety by replacing existing facilities with newer, longer-lasting and safer materials. As a result, the public will receive improved service with decreased risk of service disruption.

A. TYPES AND AGE OF ELIGIBLE PROPERTY

19. The Third LTIIP identifies the different types of property that will be targeted for improvement, as well as the age of the property, where that information is available to the Company, per 52 Pa. Code § 121.3(a)(1). This information can be found on pages 10 through 25 of the Third LTIIP.

20. Replacement of non-contemporary main continues to be the primary focus of the Third LTIIP. Construction materials used for natural gas pipelines have evolved dramatically since the oldest pipelines in the UGI Gas system were installed, and many of the non-contemporary materials and methods used for constructing pipelines subsequently have exhibited a greater

[5] Appendix B is Confidential and will be provided pursuant to an appropriate protective agreement.

likelihood of requiring replacement as they age. In the oldest portions of the UGI Gas system, cast iron was used because at the time of construction it was considered relatively strong and easy to install. Cast iron, however, has shown to be vulnerable to brittle breakage and cracking from ground movement. As a result, the industry transitioned to bare steel and wrought iron piping, which was in wide use until the 1960s. In addition, a significant portion of the UGI Gas system is composed of unprotected bare steel. Unprotected bare steel is subject to the risk of corrosion. Finally, as the industry moved to the use of plastic piping starting in the 1970s, certain plastic materials used early in the process have shown a vulnerability to stress propagation cracking.

21. As described in the Third LTIIP, the Company will continue to focus on replacement of cast iron and bare steel pipeline, in addition to targeting priority plastic. Cast iron distribution mains will be eliminated from the UGI Gas system during the Third LTIIP. UGI Gas plans to replace all bare steel mains by 2041, consistent with the commitment made in the Company's Initial LTIIP. On average, UGI Gas is on pace to replace 68.8 miles of main per year and invest $256.6 million per year during the Second LTIIP. As compared to the baseline period, the Second LTIIP achieves a 29.3% increase in average miles of main replaced per year. For the five-year period reflected in the Third LTIIP, the Company has committed to a significant increase in capital investments, $338.1 million on average per year.

22. In addition to UGI Gas's focus on cast iron, bare steel, wrought iron and priority plastic mains, the Third LTIIP also includes robust plans to address mechanical fittings, transmission infrastructure, farm taps, and regulator stations. Each of these programs will improve reliability and increase system safety.

23. Moreover, as part of the infrastructure upgrades associated with replacement of non-contemporary mains described in this section, UGI Gas will continue to replace associated

distribution equipment and install additional safety and monitoring equipment that is compatible with the upgraded design, such as excess flow valves.[6] Finally, UGI Gas will continue to: 1) replace and install service lines with excess flow valves; 2) replace and relocate meters; and 3) replace risers, meter bars, regulator stations and service regulators.

24. As with the Company's Initial and Second LTIIPs, UGI Gas's Third LTIIP includes only distribution plant that is DSIC eligible. 52 Pa. Code § 121.3(a)(1); *Final Implementation Order* at 18.

B. SCHEDULE FOR REPAIR AND REPLACEMENT

25. UGI Gas's schedule for distribution infrastructure improvements is set forth on pages 25 through 30 of its Plan. UGI Gas anticipates replacing all of its cast iron pipelines by February 2027. The Company also aims to replace all of its bare steel and wrought iron pipelines in advance of the 2041 deadline that was reflected in the Initial LTIIP.

26. In addition to its mains, UGI Gas will replace gas service lines on a planned basis in conjunction with the replacement of the mains to which they are connected. At the time of service line replacement, inside meters will be replaced and moved outside to better facilitate Company access. Meters already located outside will be replaced if it is appropriate to do so. Further, as discussed previously, excess flow valves will continue to be installed on all new and replacement service lines serving single family homes. In addition, meter regulators will continue to be installed and risers and meter bars will be replaced in concert with the service line replacements. The quantities of the latter facilities will be reflective of the number of service line replacements.

C. LOCATION OF ELIGIBLE PROPERTY

[6] Excess flow valves are safety devices that interrupt the flow of gas if a service line is severed.

27. The eligible property identified to be repaired and replaced during this Third LTIIP is located throughout the UGI Gas certificated service territory. A map showing these locations is provided on page 3 of the Plan.

D. QUANTITY OF PROPERTY TO BE IMPROVED

28. The total estimated quantity of property to be improved on UGI Gas's distribution system over the life of the Plan is described on pages 30 through 33 of its Plan. The Company estimates that in 2025, between 50-60 miles of cast iron, bare steel, wrought iron and priority plastic mains will be replaced, and over the five years of the Plan, between 310-340 miles of main will be replaced.

29. UGI Gas's primary focus continues to be on its accelerated main replacement program, utilizing the prioritization factors identified in the Third LTIIP, which will allow the Company to replace its cast iron and bare steel pipe in advance of its deadlines (barring any unforeseen circumstances). Cast iron and bare steel pipe are most susceptible to failure from corrosion, cracks and leakage. In addition, UGI has identified priority plastic pipe for inclusion in its LTIIP, which is susceptible to brittle-like cracking failures over time dependent upon localized environmental conditions and installation practices. If other facilities are located adjacent to a project that are prone to fail, such as unprotected coated steel pipe, those facilities will also be replaced.

30. In addition to the replacement of mains, UGI Gas also anticipates replacing other associated eligible facilities (*e.g.*, service lines and meters) as described in its Plan, often in conjunction with main replacement activities. The numbers of these facility replacements depends on the number of main replacements completed during each year of the Third LTIIP.

E. PROJECTED ANNUAL EXPENDITURES AND MEANS TO FINANCE THE EXPENDITURES

31. UGI Gas's projected annual budget is presented on pages 33 through 35 of the Plan. UGI Gas's projected annual investments in distribution infrastructure replacements will range from $270.5 million to $367.7 million in the Third LTIIP, with a total anticipated investment of $1.7 billion over the five years of the Plan.

32. UGI Gas performs an annual review to identify the highest risk pipe segments and prioritizes those replacements each year, as described in Appendix A of its Third LTIIP. Non-contemporary main is widely recognized as warranting prioritized attention in terms of risk management and accelerated replacement. The prioritization process employed by the Company will enhance public safety by identifying risks, assessing and prioritizing the risks, and implementing additional and accelerated actions or preventative and mitigative measures to reduce risks. Every year a list of planned DSIC-eligible main replacement projects is included with the Company's Annual Asset Optimization Plan. The list is developed and reviewed one or more times each year based on a reassessment of the most current data available. Therefore, this is a dynamic list of projects that is subject to modification. In addition to the identified projects, UGI Gas must address mandatory replacements, unrepairable leakage, and emerging issues that develop in the field and require immediate attention. The prioritization process used by UGI Gas ensures that the Company is targeting the highest risk pipe, while maximizing the efficient use of its capital and resources and responding to emerging issues.

33. The Company finances ongoing capital needs through a variety of sources, including short-term debt and long-term debt registrations approved by the Commission and internally generated cash flows that will be supported by the Company's DSIC. These are described on page 34 of the Plan. UGI Gas employs a variety of measures to ensure that its LTIIP

is cost effective, and to combat rising costs where it is appropriate to do so. These measures are described on pages 34 through 35 of the Plan.

F. ACCELERATED REPLACEMENT

34. In its Final Implementation Order, the Commission instructed that utilities should reflect and maintain an acceleration of infrastructure replacement. The Commission also noted that some utilities have already taken substantial steps towards increasing capital investment to address the issue of aging infrastructure. For those utilities, the Commission requested that the LTIIP "reflect how the DSIC will maintain or augment acceleration of infrastructure replacement and prudent capital investment." *Final Implementation Order* at 19.

35. UGI Gas has already reflected significant acceleration in its Initial and Second LTIIPs, as required by Act 11 in order for the Company to be eligible for a DSIC. The Third LTIIP shows further acceleration, which exceeds the Company's baseline period (2009 through 2011, as shown on page 5 of the Plan).

36. The Company estimates that in 2025 approximately 50-60 miles of cast iron, bare steel main, wrought iron and priority plastic main will be replaced. In 2026, UGI Gas anticipates replacing 60-70 miles of main, and in 2027, UGI Gas anticipates plans to further accelerate its replacement activities to replace between 75-85 miles of main. For the final two years of the Third LTIIP, UGI Gas plans to replace between 60-70 miles of main replacement per year. This reflects an acceleration over the baseline pace of 53.2 miles of main per year on average. UGI Gas has clearly shown that it has accelerated its infrastructure replacement. In addition to miles of main, the Company has also accelerated investment in other infrastructure repair and replacement, as described in the Plan.

37. During the baseline period, UGI Gas spent approximately an average of $50.50 million annually on repairing and replacing its distribution infrastructure. In the Initial LTIIP, the

Company invested a total of $804.4 million on system repairs and replacements. As of December 31, 2023, UGI Gas invested a total of $1.023 billion during the first four years of its Second LTIIP and anticipates a total of $1.283 billion by the conclusion of the Second LTIIP. In total, the Company plans to invest approximately $1.7 billion on infrastructure improvements during the term of the Third LTIIP. The Commission found that UGI Gas's Initial and Second LTIIPs demonstrated acceleration; the Company's Third LTIIP continues and further accelerates its investment in infrastructure replacement, consistent with the Commission's Final Implementation Order.

38. The Third LTIIP, in total, reflects significant acceleration over the baseline period of 2009 through 2011. UGI Gas believes that replacement of aging distribution equipment and facilities will reduce the number of leaks on its system, allow it to install additional safety mechanisms, and will generally improve service to its customers (on an accelerated basis).

39. The manner in which UGI Gas has accelerated its infrastructure repair and replacement, including the accelerated replacement of non-contemporary mains, as well as the impact that this work has had and will continue to have on safety and reliability, is described on pages 36 through 44 of the Third LTIIP.

G. WORKFORCE MANAGEMENT AND TRAINING PROGRAM

40. A workforce management and training plan is a required part of the LTIIP. 52 Pa. Code § 121.3(a)(7); *Final Implementation Order* at 17-18. A description of UGI Gas's workforce management and training plans are found on pages 44 through 47 of the Third LTIIP. UGI Gas's workforce is comprised of both employees who work directly for UGI Gas, and workers hired by

contractors of UGI Gas. UGI Gas utilizes a wide variety of programs to ensure that it has a qualified workforce.

41. In light of the Company's need for this highly trained workforce, UGI has built a Training Center, which has been in operation since September 2021. The state-of-the art training facility includes a "safety town" for real-life outdoor training inclusive of leak pinpointing and investigation, offices, meeting rooms, a safety lab, several lecture rooms, a service lab, a metering and regulation lab, and a computer lab. The Training Center provides facilities for delivery of technical training and operator qualification programs as required to support the programs identified in the Third LTIIP.

42. To ensure that personnel performing critical tasks on all pipeline facilities have the necessary knowledge, skills and abilities, UGI Gas conducts an Operator Qualification ("OQ") Program. This program includes more than 120 identified tasks requiring extensive training, testing and qualification verification. Further, field technicians complete a comprehensive safety course, and UGI Gas has a compliance department dedicated to inspecting construction activities regularly and verifying the qualifications of individuals performing operator qualified tasks.

43. Safety performance is now and will always remain a fundamental imperative at UGI Gas. The Company has several ongoing safety initiatives in place to further develop its safety culture and drive sustainable improvements in safety performance. These safety initiatives are described on pages 44 through 46 of its LTIIP.

44. UGI Gas utilizes internal and external inspections to ensure compliance with quality and safety requirements. UGI Gas currently utilizes construction inspectors to inspect natural gas distribution facility projects constructed by contractor crews. In addition, the Company's internal compliance department performs regular inspections that include review of

the quality and safety of construction activities, and verification of qualifications of individuals performing OQ-covered tasks. Compliance inspectors perform unannounced job site inspections of both Company and contractor crews.

H. OUTREACH AND COORDINATION EFFORTS

45. UGI Gas has described its coordination and outreach activities in its Third LTIIP, consistent with 52 Pa. Code § 121.3(a)(8). UGI Gas has a long-standing and active outreach program with local municipalities in its service territories aimed at coordinating construction projects and combating rising costs associated with restoration. The municipal outreach program allows for clear communication of information about natural gas distribution system safety, design and operations, as well as information regarding upcoming facility improvement projects. Coordination with municipal governments minimizes disruptions to residents in the area of proposed construction, enables efficient replacement of facilities, and promotes awareness of construction projects being performed around UGI Gas infrastructure. The Company's approach to outreach and coordination is fully described on pages 46 through 49 of the Plan.

IV. EVIDENTIARY HEARINGS

46. Neither Act 11 nor the Commission's Final Implementation Order and regulations requires a hearing on the LTIIP. If UGI Gas's Plan is set for hearing, the Company will file written direct testimony to more fully explain how the Plan was developed, and how it meets the requirements outlined in the Commission's Final Implementation Order.

47. Pursuant to 52 Pa. Code § 121.4(a), UGI Gas is serving its LTIIP on the statutory advocates and the parties of record in UGI Gas's most recent natural gas base rate case at Docket No. R-2021-3030218.

V. CONCLUSION

WHEREFORE, UGI Utilities, Inc. – Gas Division respectfully requests that the Pennsylvania Public Utility Commission find that its Third Long Term Infrastructure Improvement Plan contains all necessary items identified in 66 Pa. C.S. § 1352 and 52 Pa. Code § 121.1 *et. seq.*, and that the Pennsylvania Public Utility Commission approve the Company's Third Long Term Infrastructure Improvement Plan in its entirety and without modification.

Respectfully submitted,

_/s/Lindsay A. Berkstresser_____

Michael S. Swerling (ID # 94748)
UGI Corporation
500 North Gulph Road
King of Prussia, PA 19406
Phone: 610-992-3763
Fax: 610-992-3258
E-mail: SwerlingM@ugicorp.com

Lindsay A. Berkstresser (ID # 318370)
UGI Corporation
500 North Gulph Road
King of Prussia, PA 19406
Phone: 610-768-6799
E-mail: BerkstresserL@ugicorp.com

Date: August 16, 2024

EXHIBIT A

UGI Utilities, Inc. – Gas Division

Third Long Term Infrastructure Improvement Plan

(2025-2029)

Filed: August 16, 2024

I. Introduction

UGI Utilities, Inc. – Gas Division ("UGI Gas" or the "Company") respectfully files this Long-Term Infrastructure Improvement Plan ("Third LTIIP" or "Plan") covering the period January 1, 2025 through December 31, 2029 with the Pennsylvania Public Utility Commission ("Commission") (in accordance with the requirements of 66 Pa. C.S. § 1352(a) and the Commission's regulations, 52 Pa. Code § 121.1 *et. seq*.). It succeeds the Company's Second LTIIP. The Second LTIIP spanned the period January 1, 2020 through December 31, 2024.[1] This Third LTIIP (attached as Exhibit A) will begin immediately after the conclusion of the Second LTIIP and will continue the significant distribution system evaluation, repair, improvement and replacement program reflected in the Second LTIIP. As described in the Third LTIIP, UGI Gas will build off of the accelerated rate of infrastructure repairs, improvements and replacements, including the accelerated replacement of cast iron and bare steel pipe that was achieved by the Second LTIIP.

During the five-year term of the Third LTIIP, the Company projects to invest more than $1.7 billion on infrastructure improvements that strengthen and modernize distribution facilities serving customers throughout the Company's service territory. With these investments, the Company plans on replacing between 310 and 340 miles of main during the term of the Third LTIIP. As detailed herein, the Third LTIIP contains all of the plan elements specified in 66 Pa. C.S. § 1352(a) and 52 Pa. Code § 121.3 and therefore complies with Section 1352(a)(7).

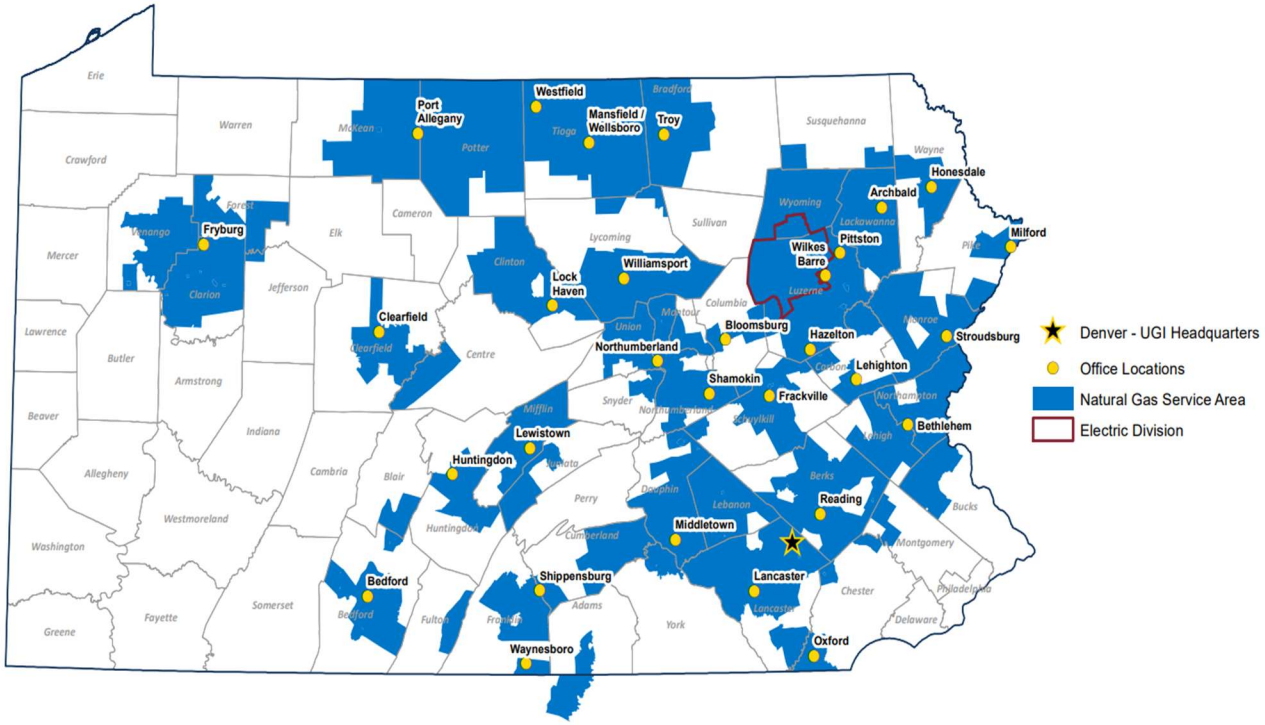
[1] *See* Docket No. P-2019-3012337 (Opinion and Order entered December 19, 2019).

II. Corporate Background

UGI Utilities, Inc. is the wholly owned, utility subsidiary of UGI Corporation ("UGI Corp."), and has two operating divisions, UGI Gas and UGI Utilities Inc. – Electric Division ("UGI Electric").

UGI Gas serves approximately 700,000 residential, commercial and industrial natural gas customers located in 46 of Pennsylvania's 67 counties and spanning more than 700 municipalities. As of December 31, 2023, the Company operates approximately 12,400 miles of gas distribution mains and 260 miles of gas transmission mains in the Commonwealth of Pennsylvania. As displayed in the map below, showing UGI Gas's service territory, the Company provides service to a number of large cities in Pennsylvania, including the following cities: Allentown, Bethlehem, Easton, Harrisburg, Hazelton, Lancaster, Lebanon, Lock Haven, Pittston, Pottsville, Reading, Scranton, Wilkes-Barre, and Williamsport.

Figure 1. Map of UGI Gas's Service Territory



III. Initial LTIIP

Pursuant to Act 11 of 2012, the Commission's Final Implementation Order entered at Docket No. M-2012-2293611[2] on August 2, 2012, and the regulations at 52 Pa. Code § 121.1, et. seq., the Company filed its Initial LTIIP in 2013.[3] The Initial LTIIP was approved by Opinion and Order entered July 9, 2014 and covered the period January 1, 2014 – December 31, 2019 (as extended).[4] It described the Company's long-term goals to replace: (1) all cast iron mains over a 14-year period ending in February 2027; and (2) all

[2] Implementation of Act 11 of 2012, Docket No. M-2012-2293611 (Pa. Pub. Util. Comm'n Aug. 2, 2012) ("Final Implementation Order").

[3] See Docket Nos. P-2013-2398835, P-2013-2397056, and P-2013-2398833 for the Initial LTIIP filings of UGI Gas's former companies that were subsequently merged into UGI Gas in Docket Nos. A-2018-3000381, A-2018-3000382 and A-2018-3000383 (Opinion and Order entered September 20, 2018).

[4] See *Petition of UGI Utilities, Inc. – Gas Division for Approval of an Extension to its Long Term Infrastructure Improvement Plan*, at Docket Nos. P-2013-2398833, P-2013-2397056 and P-2013-2398835 (Opinion and Order entered on June 30, 2016).

bare steel and wrought iron mains over a 28-year period ending September 2041. In support of these long-term goals, the Initial LTIIP addressed the specific infrastructure replacements planned to occur between 2014 and 2019. It also identified other infrastructure repairs and replacements that would be addressed during the term of Initial LTIIP.

Overall, the Initial LTIIP accomplished significant acceleration in the rate of infrastructure repair, improvement and replacement over historical baseline levels. During the Initial LTIIP the Company invested $804.4 million in infrastructure improvements and replaced 381.3 total miles of cast iron, bare steel, and wrought iron main.

IV. Second LTIIP

The Company's Second LTIIP was approved by Opinion and Order entered on December 19, 2019 in Docket No. P-2019-3012337. It built off the significant acceleration in the rate of infrastructure repairs, improvements and replacements that was achieved by the Initial LTIIP and reflected further acceleration to the pace of replacement of cast iron and bare steel pipe. During the five-year term of the Second LTIIP (2020-2024), UGI Gas will have invested approximately $1.3 billion in infrastructure improvements to strengthen and modernize distribution facilities serving customers throughout the Company's service territory. The Company is on track to replace 344 total miles of cast iron, bare steel, and wrought iron main by the end of the Second LTIIP. These replacements continue to allow the Company to provide safe and reliable service both now and into the future, and make the system safer, more reliable, and easier to operate.

Overall, the Second LTIIP accomplished significant acceleration in the rate of infrastructure repair, improvement and replacement over historical baseline levels. The

Company uses a three-year baseline average comprised of capital expenditures for 2009 through 2011 as the "pre-acceleration" point of comparison. This baseline period represents the period immediately prior to the commencement of the Initial LTIIP's accelerated replacement of infrastructure. Compared against this baseline, the Company's Second LTIIP replaced significantly more miles of main, on average per year, than had occurred during the baseline period, as shown in the figure below.

Figure 2. Baseline Metrics Compared to Cumulative LTIIP (2009-2024)[5]

Capital Investment Period	2009-2011 (Baseline)	Initial LTIIP (2014-2019)	Second LTIIP (2020-2024)
Miles of Main Replaced (average per year)	53.2	63.6	68.8
% Increase over Baseline Period	N/A	19.5%	29.3%
Capital Spending ($MM) (average per year)	$50.50	$134.1	$256.6
% Increase over Baseline Period	N/A	165.5%	408.1%

Figure 3. Second LTIIP Total Metrics (2020-2024)[6]

	2020	**2021**	**2022**	**2023**	**2024F***	**Total**
Planned Miles of Main Retired	66.0	68.0	70.0	70.0	70.0	344.0
Actual Miles of Main Retired	67.8	78.1	89.7	60.2	48.2	344.0
Planned Capital Investment ($MM)	$215.0	$235.0	$260.0	$270.0	$285.0	$1,265.0
Actual Capital Investment ($MM)	$216.2	$232.8	$302.8	$271.2	$260.2	$1,283.2

*Projected miles of main retired and capital investment dollars for 2024.

[5] The Baseline Metrics were established in the Company's Initial LTIIP at Docket Nos. P-2013-2398835, P-2013-2397056, and P-2013-2398833. *See* Initial LTIIP, Attachment 2, pp. 28-29.

[6] Pipe mileage totals are from the Company's Annual Asset Optimization Plans.

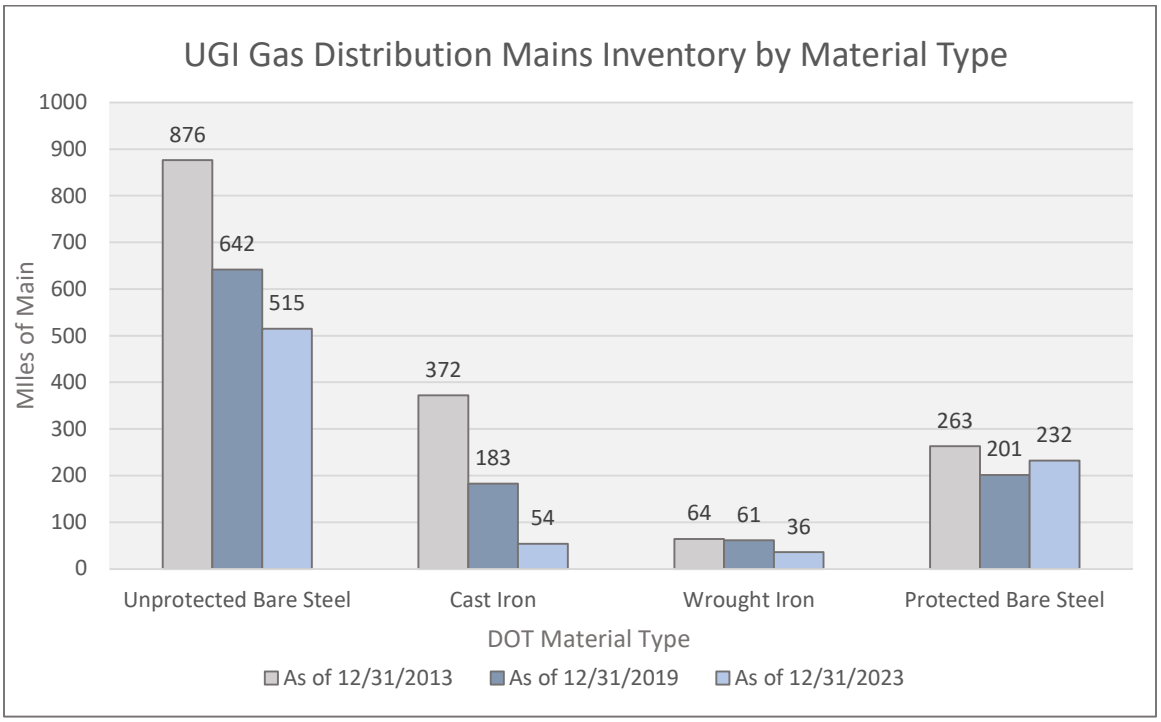
As Figure 3 shows, during the Second LTIIP UGI Gas anticipates replacing 344.0 miles of cast iron and bare steel mains by the end of 2024. UGI Gas anticipates spending approximately $1,283.2 million by the end of the Second LTIIP. Also, UGI Gas anticipates concluding its Second LTIIP on December 31, 2024, on budget and having accomplished the miles of main replacement identified in its Second LTIIP plan.

As of July 31, 2024, UGI Gas has replaced approximately 317 miles of main. In targeting the total planned replacement mileage (i.e., 344 miles) for the Second LTIIP, UGI Gas is forecasting final year spend of approximately $25 million under its initial planned capital spending for calendar year 2024, achieving total Second LTIIP mile replacements at the initial planned level. Total Second LTIIP spend is projected to be within 2% of original planned levels for the five-year period.

As Figure 4 below demonstrates, on average, UGI Gas is on pace to replace 68.8 miles of main per year and invest $256.6 million per year during the Second LTIIP. As compared to the baseline period, the Second LTIIP achieves a 29.3% increase in average miles of main replaced per year.

Figure 4, below, shows the actual change in mileage of main by material type between December 31, 2019 (the end of the Initial LTIIP) and December 31, 2023 (immediately before the final year of the Second LTIIP). Specifically, Figure 5 shows that, during the term of the Second LTIIP, UGI Gas replaced 129 miles of cast iron main and 152 miles of bare steel main.

Figure 4. Reduction In Non-Contemporary Main at UGI Gas as of December 31, 2023



*The mileage shown represents the DOT balances, which is net of replacement, retirement and reclassifications. The increase in Protected Bare Steel mains represents a reclassification of approximately 35 miles of main which was reclassified from Transmission to Distribution.

Figure 5 below, shows the change in mileage of main by decade of installation between December 31, 2019 (the end of the Initial LTIIP) and December 31, 2023 (immediately before the final year of the Second LTIIP).

Figure 5. Annual DOT Distribution Report Inventory Change in Mileage by Decade 2019-2023[7]

Main Vintage	December 31, 2019	December 31, 2023	Change
Unknown	192	186	(6)
Pre-1940	841	666	(175)
1940s	79	61	(18)
1950s	701	673	(28)
1960s	1,764	1,684	(80)
1970s	1,136	1,108	(28)
1980s	1,634	1,622	(12)
1990s	2,417	2,414	(3)
2000s	1,912	1,904	(8)
2010s	1,355	1,496	141
2020s	0	591	591

In addition to main replacement, the Second LTIIP also significantly increased the Company's investment in system reliability improvements, service replacements, and mandated relocations of utility facilities. For example, Figure 6, below, shows the average number of services that the Company replaced during the term of the Second LTIIP.

Figure 6. Average Annual Service Lines Replaced (2009-2023)

Capital Investment Period	2009-2011 (Baseline)	Initial LTIIP	Second LTIIP
Average Number of Service Lines Replaced	4,281	9,582	12,359*

*The average number of services lines replaced during the Second LTIIP are through calendar year 2023.

[7] Changes in the pipeline age distribution reflect the net difference due to pipe additions, retirements, replacements and records corrections for all distribution main material types.

Similar to main replacements, UGI Gas is targeting an accelerated level of investment associated with these other distribution system improvement charge ("DSIC") eligible replacement programs into the future to support the continued provision of safe and reliable service to its customers.

As a result of the cumulative investments through the Second LTIIP, the Company will have completed 92% of its total cast iron main replacements and 43% of its total bare steel/wrought iron main replacements.

V. Required Elements for the LTIIP

According to 66 Pa. C.S. § 1352(a), as a precursor to recovering costs through a DSIC, or in order to continue a previously-approved DSIC mechanism, public utilities must have an LTIIP that is reviewed and approved by the Commission. The LTIIP must include the following elements:

(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 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 to customers.

(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 the planned maintenance/construction projects and roadways that may be impacted by the LTIIP.

UGI Gas's Third LTIIP addresses the elements identified in 66 Pa C.S. § 1352 and 52 Pa. Code § 121.3(a), as shown in Section VI of the Plan.

VI. UGI Gas's Third LTIIP

A. Types And Age of Eligible Property

UGI Gas's Third LTIIP identifies the following types of DSIC-eligible property that will be addressed to enhance the Company's distribution system:

- Gas distribution and transmission mains, valves, fittings, couplings, and appurtenances
- Gas service lines including tees, excess flow valves, curb valves, first stage regulators, tubing / piping, and risers
- Gas meter sets including regulators, meter bars, meter set piping, meters, and telemetry equipment
- City gate and district regulator stations including telemetry equipment
- Overpressure protection for regulating equipment
- Farm tap regulator replacements
- Mandated facility relocations, as related to highway projects (unreimbursed costs)
- Other related capitalized costs – including but not limited to equipment, tools, corrosion control equipment, vehicles, and supporting information technology systems

Upgrading the Company's distribution system with this eligible property will avoid increased risks to system reliability and reduce operation and maintenance costs. These infrastructure investments facilitate the removal of aging portions of the system, which enhances safety. Finally, the DSIC-eligible projects described herein ensure replacement

of facilities with newer equipment and materials that are designed and installed using modern construction specifications and standards.

1. Gas Distribution and Transmission Mains, Valves, Fittings, Couplings, and Appurtenances

Distribution mains are DSIC-eligible property according to Section 1351(2)(i) of the Public Utility Code. UGI Gas's distribution mains were installed over many decades and are comprised of several different types of material including: cast iron, wrought iron, unprotected bare steel, unprotected coated steel, protected bare steel, protected coated steel, and plastic. The Company prioritizes the repair and replacement of main, in part, depending on material type, as described in this section of the Third LTIIP. Continuing efforts to maintain accelerated replacement of cast iron mains, bare steel mains, vintage plastic mains, and associated appurtenances will significantly improve the overall age profile and performance of UGI Gas's distribution system.

The Company's total mileage of distribution main by material type (as of December 31, 2023) appears in Figure 7 below.

Figure 7. Miles of Distribution Main as of December 31, 2023

Material	Miles	Percent of Total
Unprotected bare steel	515	4.1%
Unprotected coated steel	195	1.6%
Protected bare steel	232	1.9%
Protected coated steel	3,220	26.0%
Cast iron	54	0.4%
Wrought iron	36	0.3%
Priority Plastic*	247	2.0%
Plastic	7,905	63.7%
Other	1	0.0%
Total	**12,405**	**100.0%**

*As of June 2024, the Company identified approximately 247 miles of known priority plastic on its distribution system. Priority plastic pipe is described further herein and includes certain older vintage resin composites that are more susceptible to failure than current resin composites under certain conditions.

The mains in Figure 7 were installed between Pre-1940 and December 31, 2023. Figure 8, below, provides a breakout of the Company's existing distribution mains by system percentage per decade installed. Approximately 26% of the Company's mains were installed prior to 1970, but more than 30% of the Company's mains have been installed in the last 25 years.

Figure 8. Age Profile of Distribution Main as of December 31, 2023

Decade of installation	Miles	Percent of Total
Unknown	186	1.5%
Pre-1940	666	5.4%
1940s	61	0.5%
1950s	673	5.4%
1960s	1,684	13.6%
1970s	1,108	8.9%
1980s	1,622	13.1%
1990s	2,414	19.5%
2000s	1,904	15.3%
2010s	1,496	12.0%
2020s	591	4.8%
Total	**12,405**	**100.0%**

While UGI Gas does not prioritize main replacement strictly based on the age of the main, it is generally the case that older main on the UGI Gas system is composed of non-contemporary materials. Therefore, the Third LTIIP will continue to reduce the overall age profile of the materials on the Company's distribution system.

a. Cast Iron, Wrought Iron and Bare Steel Distribution Mains

Figure 8 includes main that the Company classifies as contemporary or non-contemporary. Contemporary mains include those made of coated steel and modern plastic.

Non-contemporary mains are made from outdated materials or methods that have been found to be increasingly vulnerable as they age, and are no longer installed for gas service, including mains made of cast iron, wrought iron, bare steel, unprotected coated steel, and certain vintage plastic. Non-contemporary main receives prioritized attention in terms of risk management and accelerated replacement. Non-contemporary mains currently make up approximately 8.7% of UGI Gas's distribution mains. Of that 8.7%, cast iron accounts for 0.4%, bare steel accounts for 6.0%, wrought iron accounts for 0.3% and known priority plastic, as described more fully below, accounts for 2.0%. The remaining 91.3% of mains are comprised of contemporary materials, which includes 63.7% of plastic, 26% of protected coated steel, and 1.6% of unprotected coated steel. The Third LTIIP will continue to focus on the accelerated replacement of non-contemporary main during the next five years including the complete removal of cast iron and wrought iron from the UGI Gas system. This reflects a fulfillment of UGI Gas's commitment to remove these materials from its system by 2027.

UGI Gas has made considerable progress in replacing its cast iron, wrought iron and bare steel mains within its distribution system. While replacement efforts in this regard are not complete, the Company continues to analyze threats and risks to its distribution system and through this continuous review cycle, has identified risks beyond these main types. The Company's Distribution Integrity Management Program ("DIMP"), identifies "priority plastic" as being installed between 1965-1985. This priority plastic is currently being replaced on a case by case basis. However, UGI Gas is formally identifying this type of plastic pipe as DSIC-eligible property that will be replaced through the LTIIP on an accelerated basis to reduce associated leaks and overall risks on the Company's distribution

system. The risks associated with priority plastic pipe are described in the following section.

b. Priority Plastic

During past LTIIPs, UGI Gas replaced priority plastic opportunistically when it was identified in connection with the Company's cast iron, wrought iron and bare steel replacement projects. Plastic pipe replacement was included in these projects, when feasible, to address risks and reliability concerns. Since the beginning of the Initial LTIIP, UGI Gas has replaced approximately 47 miles of priority plastic. Currently, UGI Gas has identified priority plastic to include the earliest vintage plastic installed between 1965 and 1985 in UGI Gas's distribution system, which is composed of various manufacturers, and plastic resin base materials. Beginning in the mid 1960's Dupont's Aldyl A (i.e., first generation or priority plastic), began to be installed on UGI Gas's system. Some early generation plastics are more susceptible to becoming brittle over time and cracking under certain circumstances as compared to modern base plastic materials (also known as resins). By the early 1990s plastic pipe was made from improved resins.

Priority plastic primarily installed at UGI Gas was the DuPont Aldyl A plastic pipe, which can be susceptible to failures over time dependent upon localized environmental conditions and installation practices. The total population of plastic mains installed on UGI Gas's system between 1965 and 1985 is approximately 1,100 miles[8]. Of this population, the Company has identified approximately 247 miles of known priority plastic on its distribution system, as of June 2024. The known and identified miles of priority

[8] The Company is including plastic main installed on UGI Gas's system through 1985 to account for plastic pipe that was manufactured in 1982 and had an up to a three-year inventory shelf life.

plastic will be evaluated and updated as we move forward. With this Third LTIIP, UGI Gas will target priority plastic replacements in conjunction with the Company's continued focus on removing cast iron and unprotected bare steel mains. UGI Gas may include additional vintage plastic, as identified through the Company's DIMP as it moves forward each year throughout the Third LTIIP and to the extent it identifies additional priority plastic in the Company's distribution system.

By including priority plastic in the Third LTIIP, these assets will be properly prioritized with other risked-ranked assets for timely replacement. UGI Gas will continue to monitor priority plastic pipe performance, and execute on priority plastic replacements based on risk to continue to maintain reliability and integrity of the distribution system.

c. Plastic Pipe Components and Mechanical Fittings

Plastic pipe components, and mechanical fittings are DSIC-eligible property under Section 1351(2)(i)-(iii) of the Public Utility Code. These materials and components were installed during the same periods as the Company's mains and service lines. Certain plastic pipe materials and fittings have been found to exhibit a higher than average potential for failure with age, under certain circumstances. In addition, UGI Gas has identified a type of mechanical service tee that may fail due to a compromised mechanical connection between the tee and main.[9] A second type of plastic fitting, a service line curb valve with compression connections, has similarly exhibited a higher potential for failure. UGI Gas is engaged in ongoing surveillance and proactive identification, repair and replacement of these fittings. When mechanical tees are replaced, a section of the host main is replaced, and a new tee is connected by plastic fusion. Mechanical tee failure may also be mitigated

[9] A mechanical tee is the fitting which joins the service line to the main.

through a remediation procedure that includes the replacement of key mechanical tee components.

Additionally, pursuant to the settlement at Docket No. C-2018-3005151[10] ("2018 Settlement"), UGI Gas agreed in relevant part to budget mechanical tee remediation activities at no less than $3.1 million a year between fiscal years 2020 through 2024 (Opinion and Order at 13). Since 2020, UGI Gas has excavated 26,226 suspected mechanical tee locations and remediated 7,446 mechanical tees. Between 2020 and March 2024, UGI Gas met or exceeded its annual budgeted commitment and spent $46.42 million.

UGI Gas also agreed in the 2018 Settlement to submit a study by the end of fiscal year 2024 proposing its future plans for continued mechanical tee remediation (Opinion and Order at 13). Beginning in Fiscal Year 2025, UGI Gas has completed its 2018 Settlement obligations and will be shifting the Plastic Mechanical Tee Program to a risk-driven program. In addition, pursuant to the 2018 Settlement agreement, a confidential mechanical tee study was completed (included as Appendix B). Starting in fiscal year 2025, UGI Gas plans to operate the Mechanical Tee Program in line with the results of this study. Plastic mechanical tee data will continue to be tracked, and any unfavorable trends will trigger a further review by UGI Gas. The results of the study and UGI Gas's proposal to shift the mechanical tee remediation program to a risk-driven program are provided in Appendix B.

The aforementioned plastic pipe and pipe components are DSIC-eligible property under Sections 1351(2)(i)-(v) of the Public Utility Code.

[10] See *PAPUC v. UGI*, Docket No. C-2018-3005151 (Opinion and Order entered Oct. 29, 2020).

d. Transmission Main Replacement

UGI Gas maintains approximately 260 miles of natural gas transmission mains. Transmission mains are those mains which provide large volumes of gas at high pressures to provide service for a variety of company uses, including service to entire cities and towns.

Ongoing investments in transmission infrastructure are necessary to maintain these assets to contemporary standards and in accordance with newly introduced regulations pertaining to transmission pipelines at 49 CFR § 192.624 regarding Maximum Allowable Operating Pressure ("MAOP") reconfirmation for steel transmission pipelines. This new regulation requires UGI Gas to reconfirm the MAOP of transmission pipelines that do not have a traceable, verifiable, and complete MAOP record. Accordingly, UGI Gas reviewed its records and documentation pertaining to all of its transmission assets and created a schedule in accordance with the reconfirmation timelines specified under 49 CFR § 192.624.

Based on the requirements found in 49 CFR § 192.624, UGI Gas must complete all reconfirmation actions required by this section on at least 50% of its transmission pipeline mileage by July 3, 2028 and must complete all reconfirmation actions required on the remainder of its transmission pipeline mileage by July 2, 2035. UGI Gas developed an internal MAOP Reconfirmation Plan in accordance with 49 CFR § 192.624 and has identified approximately 36 miles of transmission pipeline requiring MAOP reconfirmation. UGI Gas plans to reconfirm 18 miles by July 3, 2028 and the remaining to be completed by the July 2035 deadline. The execution of this plan will aid UGI Gas in continuing to maintain the integrity and reliability of UGI Gas's transmission infrastructure

which provides large volumes of gas at high pressures to serve entire cities, towns, and large volume customers such as electric generation plants. For this reason, reconfirming the MAOPs of identified transmission infrastructure to a high degree of integrity is paramount.

Maintaining the integrity of transmission infrastructure is necessary for both reliability and safety. In terms of reliability, transmission lines often provide service to thousands of customers. Service interruptions can have widespread regional consequences that will impact many customers. For these reasons, maintaining transmission infrastructure is a necessary element of UGI Gas's LTIIP. Transmission mains are DSIC-eligible property under Sections 1351(2)(i) and 1351(2)(iv) of the Public Utility Code. The Company's total mileage of transmission main by material type (as of December 31, 2023) appears in Figure 9 below.

Figure 9. UGI Gas Transmission Mains by Material as of December 31, 2023[11]

Type of Material	**Miles**	**Percent of Total**
Protected bare steel	41	15.6%
Protected coated steel	222.3	84.4%
Total	**263.3**	**100.0%**

Protected bare steel mains make up 15.6% of UGI Gas's transmission mains, while 84.4% are protected coated steel. Figure 10 below provides a breakout of the Company's existing transmission mains by decade installed.

[11] Per UGI Gas's 2023 DOT Transmission report.

Figure 10. UGI Gas Transmission Mains by Age as of December 31, 2023[12]

Decade of installation	Miles	Percent of Total
Pre-1940	13	4.9%
1940s	2	0.8%
1950s	44	16.7%
1960s	35	13.3%
1970s	35	13.3%
1980s	38	14.4%
1990s	43	16.3%
2000s	23	8.8%
2010s	30	11.4%
2020s	0.3	0.1%
Total	**263.3**	**100.0%**

Approximately 22.4% of UGI Gas's transmission system is pre-1960s vintage, or more than 60 years old. Ongoing investments in transmission infrastructure are necessary to maintain these assets at contemporary standards. Specifically, investment in the retrofit of transmission pipelines to facilitate internal inspection, pressure testing, and other integrity assessment techniques may be required to meet proposed transmission integrity management regulation changes.[13] Furthermore, replacement of transmission assets, in response to assessment findings, may be required to remediate these assets and avoid jeopardizing system integrity. To the extent that state or federal regulations change transmission integrity standards during this Third LTIIP period, revisions to the Plan may be required.

[12] Per the 2023 DOT Transmission report of the UGI Gas.
[13] *See PHMSA's Notice of Proposed Rulemaking, Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines, Docket No. PHMSA-2011-0023.*

e. Other Main Replacement Activity

Other mains, including those made of contemporary materials, will be replaced as may be necessary to maintain or improve system integrity and reliability, to address emerging operational issues, or as may be required to accommodate highway related projects.

2. Gas Service Lines

Gas service lines are the piping and/or tubing that connects the Company's mains to the meter sets near customer properties. Service lines are generally constructed using the same materials as mains and are subject to the same elements that affect the physical integrity of the mains. To ensure that distribution service is reliable and safe, these service lines must be replaced on the basis of condition or obsolescence. Gas service lines are DSIC-eligible property under Section 1351(2) (iii) of the Public Utility Code.

Figure 11, below, provides the total current number of service lines connected to the Company's distribution system by material type.

Figure 11. Service Lines by Material as of December 31, 2023[14]

Service Material	Number of Services	Percent of Total
Unprotected bare steel	8,133	1.3%
Unprotected coated steel	7,292	1.2%
Protected bare steel	1,124	0.2%
Protected coated steel	35,247	5.7%
Copper	5,682	0.9%
Cast / wrought iron	-	0.0%
Plastic	561,027	90.4%
Other	2,012	0.3%
Total Services	**620,517**	**100.0%**

[14] Per the 2023 DOT Transmission report of UGI Gas.

Gas services are typically replaced on a planned basis in conjunction with the replacement of the main to which they are connected. Coordinating replacements in this manner maximizes the efficient use of Company resources and minimizes inconvenience to customers. Figure 12 below provides a breakout of the Company's existing service lines by decade of installation as of December 31, 2023.

Figure 12. Age Profile of Service Lines as of December 31, 2023

Decade of installation	Services	Percent Total
Unknown	2,377	0.4%
Pre-1940	4,194	0.7%
1940s	1,377	0.2%
1950s	4,617	0.7%
1960s	22,540	3.6%
1970s	49,963	8.0%
1980s	83,578	13.5%
1990s	124,704	20.1%
2000s	117,171	18.9%
2010s	148,001	23.9%
2020s	61,995	10.0%
Total	**620,517**	**100.0%**

a. Excess Flow Valves

Excess flow valves are safety devices installed on gas service lines that interrupt the flow of gas in the event of a severed line, typically in the case of damage caused by excavation. As service lines are replaced, excess flow valves are installed in accordance with 49 CFR § 192.381. Excess flow valves are DSIC-eligible property under Section 1351(2)(v) of the Public Utility Code. The ages of excess flow valves generally correspond to the age of service lines detailed above.

3. Meter Replacements and Meter Move-Outs

UGI Gas replaces meters as needed to maintain compliance with gas measurement accuracy standards as stipulated in 52 Pa. Code § 59.21. UGI Gas maintains a statistical sampling program to evaluate meter accuracy. Should a grouping of meters fail to meet accuracy requirements, the meters are repaired or replaced. Replacement meters are DSIC-eligible property under Section 1351(2)(viii) of the Public Utility Code.

Moreover, UGI Gas prioritizes the relocation of medium pressure inside meters sets (operating over 10 psig) on its system, by September 13, 2034, pursuant to the Commission's Final Order issued on May 23, 2014, in Docket No. L-2009-2107155. When meters are relocated from inside customer premises to outside, efficiency often requires simultaneous replacement of the affected service line. This coordinated upgrade of Company facilities in a single mobilization minimizes future inconvenience to the customer. As a result, the number of service line replacements will increase in proportion to the number of meter move-outs.

The age of meter sets that are replaced and meter sets subject to move-out generally correspond to the installation periods for the Company's distribution mains and service lines described in detail above.

4. City Gate and District Regulator Stations

City Gate and District Regulator Stations are facilities that reduce system pressures as gas is distributed throughout the distribution system's piping network. City Gate Stations are generally located at the point of custody transfer between an interstate pipeline system and UGI Gas's distribution system, whereas District Regulator Stations are located further downstream, within UGI Gas's distribution system. Regulator stations must be

periodically updated or replaced as components such as piping and mechanical equipment age and wear. Over time, mechanical components of regulators become obsolete and must be replaced with modern equipment to ensure availability of replacement parts and reliability. Regulating facilities may be replaced in whole or part depending upon the project objectives. Partial replacements could encompass equipment including, but not limited to, regulators, valves, heaters, metering, Supervisory Control And Data Acquisition ("SCADA"), and odorizers. Some facilities will be eliminated through the main replacement program as low pressure systems are eliminated, and where systems are otherwise consolidated.

City Gate Stations and Distribution Regulator Stations are DSIC-eligible property under Sections 1351(2)(i) and § 1351(2)(iv) of the Public Utility Code. Figure 13 below provides the number of District Regulators and City Gate Stations on the UGI Gas distribution system.

Figure 13. Number and Type of Regulator Stations

Type of Regulator Station	Total
City Gate Stations	94
District Regulator Station	1,359
Total	**1,453**

Overpressure protection equipment is DSIC-eligible property under Sections 1351(2)(i) and 1351(2)(iv) of the Public Utility Code. UGI Gas rebuilds or replaces existing operator-monitor regulator configurations in low pressure regulator stations and end-user delivery points to incorporate full capacity relief valves or slam-shut devices that reduce the risk of overpressurization. The Company has approximately 236 operator-

monitor stations without a second redundant overpressure protection device (12 of which feed low pressure systems). While the Company has approximately 265 relief valves connected to operator-monitor stations, those valves may require replacement to address complete regulator failure scenarios.

5. Farm Taps

Farm taps provide natural gas to rural homestead, industrial/production, or irrigation customer locations. Farm taps can be connected to production, gathering or transmission pipelines and consist of equipment that controls delivery pressures, including but not limited to, valves, pipes, regulators, relief valves and meters. The Company is including farm tap projects in its LTIIP because replacement activity is required in order to reduce risks associated with service lines connected to farm taps. Farm tap services are incorporated into the Company's DIMP and are scored and prioritized based on a risk model. Currently, the Company has risk scores for farm tap services connected to transmission lines. However, the model will be expanded to include farm tap services connected to high pressure distribution mains. Moreover, as an alternative to reinstalling new high pressure farm tap services, where it is cost effective to do so, the Company may use the option of installing Regulator Stations and running new medium pressure main to eliminate the need for the farm tap service. Doing so will help to reduce the number of high-pressure services within our distribution system while providing better system reliability and safety though redundant regulation and overpressure protection that a district regulator station provides.

6. System Reliability Improvements

System Reliability Improvements are those investments required to maintain ongoing system reliability. Typically, these projects include investments in distribution or transmission infrastructure needed to reinforce system pressure to ensure firm peak-day deliverability. Investment in transmission and distribution piping necessary for these projects is DSIC-eligible under Section 1351(2)(i) of the Public Utility Code.

UGI Gas utilizes system network models to predict system performance under peak operating conditions. Model results are validated against actual system operating conditions using data from remote SCADA monitoring, system Regulator Station charts, and winter survey gauges. Specific reliability projects will be identified to improve system pressure, as needed, to maintain system reliability design criteria to firm customers. Additional projects may be identified in the future subject to system performance and reliability.

7. Mandated Facility Relocations

UGI Gas is periodically required to relocate gas facilities to accommodate highway improvement projects. The unreimbursed portion of these costs is DSIC-eligible property under Section 1351(2)(ix) of the Public Utility Code. When contemporary facilities are impacted, UGI Gas seeks to coordinate such projects to minimize the extent of facility relocation. When non-contemporary facilities, such as cast iron, bare steel, or vintage plastic are involved, the relocation projects provide an opportunity for infrastructure replacement.

8. Related Capitalized Costs

The replacement of DSIC-eligible property described above may result in additional related costs incurred that are essential and necessary in order to efficiently manage specific accelerated capital improvement projects. Examples include but are not limited to tools, equipment, fleet, corrosion control, and information technology investments. These related costs are DSIC-eligible property under Section 1351(2)(x) of the Public Utility Code.

B. Schedule for Planned Replacement of Eligible Property

The Third LTIIP continues the accelerated rate of infrastructure repair, improvement and replacement achieved in the Initial LTIIP and the Second LTIIP. The Third LTIIP will allow the Company to replace all of its cast iron main in advance of February 2027, as identified in the Initial LTIIP. In addition, the Third LTIIP will continue the Company's progress toward replacing all of its bare steel main by or before September 2041, absent unforeseen circumstances. Figure 14 below provides the total miles of main that the Company plans to replace during each year of the Third LTIIP. It is anticipated that UGI Gas will replace between 50 and 60 miles of combined main in 2025. The specific allocation of mileage between the type of main to be replaced will vary annually depending on annual risk evaluations and project-specific considerations, although cast iron will be targeted and eliminated from the system entirely ahead of the committed deadline of February 2027.

In calendar year 2025, UGI Gas is forecasting an increase of approximately $10 million over its planned spending for calendar year 2024. The planned capital for 2025 includes cost increases associated with complexity, location and size of the remaining cast

iron replacement projects. As a result of these increased costs the Company's planned calendar year 2025 replacement miles of cast iron, bare steel and wrought iron mains are forecasting to be between 50-60 miles, a nominal increase over the Company's planned 2024 replacement miles of 48.2. The planned replacement miles will increase to between 60-70 miles in 2026 corresponding with the increase in the planned capital investment. In calendar year 2027, the Company is planning an abandonment of a large section of a wrought iron and bare steel line in the northern part of the Company's service territory due to corrosion. This project will retire approximately 15 miles of high pressure wrought iron and bare steel.

Figure 14. Estimated Miles of Main To Be Replaced During the Third LTIIP (2025-2029)

Year	Cast Iron, Bare Steel, and Wrought Iron, Priority Plastic Pipe Replacement Plan (Miles)
2025	50-60
2026	60-70
2027	75-85
2028	60-70
2029	60-70
Total	310-340

Figure 15, below, shows the Company's actual and projected schedule for cast iron and bare steel main replacements between 2012 and 2039. It highlights the acceleration in targeted main replacement that the Company has achieved through the Second LTIIP, and forecasts the progress UGI Gas will continue to make toward its goal to eliminate cast iron and bare steel from its system.

Figure 15. Schedule of Cast Iron, Wrought Iron, and Bare Steel Inventories (2012-2039)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Cast Iron	407	372	332	300	276	237	208	184	140	111	79	54	32	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bare Steel	1,387	1,243	1,208	1,148	1,108	1,074	1,038	979	965	894	852	825	797	764	716	646	591	536	481	426	371	316	261	206	151	96	41	-

As depicted in Figure 15, above, the Company has made significant progress toward reducing the prevalence of cast iron, bare steel, and wrought iron main in the UGI Gas system and will continue to do so in its Third LTIIP. UGI Gas notes that the end date for bare steel reflected in Figure 15 is contingent upon future Commission approval of replacement plans that reflect a sufficient pace for annual replacement of non-contemporary main per year.

UGI Gas performs an annual review to identify the highest risk pipe segments and prioritize those replacements each year. Main replacement risk evaluation is based on numerous factors, including the pipe condition, age, coating, type of ground cover,

geographical proximity to structures, and prior leak and/or break history. Appendix A provides a detailed listing of factors considered in the risk-based evaluation, which may cause specific projects to be scheduled for replacement sooner. Additionally, specific projects may be escalated to enable coordination of replacement efforts with other utility replacement projects or municipal or state roadway resurfacing projects. UGI Gas utilizes commercial risk evaluation software in concert with a team of Subject Matter Experts to evaluate, prioritize, and bundle replacement projects. This hybrid approach targets the highest risk mains first, while also balancing the need to maximize the efficient deployment of capital and resources.

This approach is consistent with UGI Gas's Transmission Integrity Management Program ("TIMP") and DIMP in accordance with Subpart P of 49 C.F.R. Part 192 – Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. The purpose of UGI Gas's TIMP and DIMP is to enhance public safety by identifying risks, assessing and prioritizing the risks, and implementing additional and accelerated actions or preventative and mitigative measures to reduce risks. As UGI Gas continues to implement the TIMP and DIMP, other pipeline assets may be identified and scheduled for repair, improvement or replacement as their conditions are evaluated and relative risks are reviewed and prioritized. This process is also consistent with the process utilized in prior phases of the Company's LTIIP.

Every year, a list of planned DSIC-eligible main replacement projects is included with the Company's Annual Asset Optimization Plan ("AAOP"). This listing is developed and reviewed one or more times each year based on a reassessment of the most current data available. Therefore, this is a dynamic list of projects that is subject to modification. In

addition to the identified projects, UGI Gas must address mandatory replacements, unrepairable leakage, and emerging main issues that develop in the field and require immediate attention. Replacement of such segments of pipe is not reflected in the AAOP and may impact the ultimate timing of the completion of identified projects.

Certain circumstances, such as municipal government and Pennsylvania DOT construction projects, or changes in state or federal pipeline safety codes also could impact UGI Gas's schedule and scale of its LTIIP projects. LTIIP projects performed by UGI Gas, and material assets associated with those projects, will be adjusted or changed as required to align with changing circumstances. Projects will be regularly reviewed and updated to ensure they are cost effective and provide the expected system integrity and reliability benefits.

C. Location of Eligible Property

UGI Gas will conduct LTIIP projects throughout its entire service territory. As described in Section II of the Plan, UGI Gas's service territory covers 46 counties in and around Pennsylvania that contain approximately 12,400 miles of natural gas distribution mains and 260 miles of natural gas transmission mains. Eligible property is located in all parts of the Company's service territory.

D. Estimate of the Quantity of Property to Be Improved

Figure 16 below estimates the approximate schedule and units of eligible property to be replaced under the Third LTIIP. The Company anticipates replacing or repairing the following approximate amounts of DSIC-eligible infrastructure.

Figure 16. Replacement Asset and Schedule

Asset Type	Strategy	LTIIP Schedule
Distribution Mains – Cast Iron	Replace cast iron mains on a risk prioritized basis consistent with DIMP criteria	All cast iron mains replaced by or before February 2027
Distribution Mains – Bare Steel	Replace bare steel mains on a risk prioritized basis consistent with DIMP criteria	All bare steel mains replaced by or before 2041
Coated Steel Mains	Replace coated steel main as required per mandatory replacements, unrepairable leakage, and emerging main issues	Replace as necessary to maintain system integrity
Transmission Mains	Retrofit transmission lines as required to perform assessments, replace/ remediate as required per assessment findings and reconfirm MAOP pursuant to the MAOP Reconfirmation Plan	To be determined based upon field assessments and findings and the MAOP Reconfirmation Plan
Priority Plastic Mains	Replace priority plastic mains on a risk basis consistent with DIMP criteria	Replace as necessary to maintain system integrity
Vintage Plastic	Replace mechanical tees and mechanical coupled valves, on an assessed condition basis, including replacement of header main as may be required	Replace as needed to maintain system integrity or at rate as determined by relative risk prioritization
Services and Meters	Replace services and meters in concert with main replacements	Replacement rate will be proportional to accelerated main replacement rates, with the exception of meters replaced for maintenance purposes or accuracy standards. On average, UGI Gas replaces 10,500-12,500 annually
Regulator and City Gate Stations	Replace stations and components on	Variable rate per year based on facility condition

	obsolescence/condition basis	assessment and prioritization. On average, UGI Gas completes 100-150 regulator station enhancement projects annually
Mandated Facility Relocations	Relocate infrastructure as required by highway agencies. Replace vintage infrastructure in path of highway improvements opportunistically to minimize future paving costs	As required by highway agencies or as identified based on road project schedules; on average, UGI Gas completes 60-90 mandated facility relocations annually
Farm Taps	Replace or eliminate farm tap services on transmission mains	Replace approximately 50-75 farm taps on transmission mains during the term of the Third LTIIP
Overpressure Protection	Rebuild or replace existing low pressure regulator stations with an operator-monitor configuration to incorporate a full capacity relief valve or slam-shut device	As required to maintain system integrity
Other Related Capital Costs	Invest in tools, equipment, fleet, corrosion control, and information technology as required to accomplish the LTIIP and other related capitalized costs	As required to perform LTIIP projects

E. Projected Annual Expenditures And Means To Finance The Expenditures

a. The Baseline and Prior Phases of the LTIIP

As set forth in Figure 2, above, the total annual average baseline spending amount for UGI Gas was $50.50 million per year. Figure 17 below shows that, under the first six years of the Initial LTIIP, the Company invested a total of $804.4 million on system repairs and replacements. As of December 31, 2023, UGI Gas invested a total of $1.023 billion

during the first four years of its Second LTIIP, and anticipates a total of $1.283 billion by the conclusion of the Second LTIIP.

Figure 17. Cumulative LTIIP Expenditures 2014-2024

LTIIP Phase	Capital Investment UGI Gas ($MM)
Initial LTIIP	$804.4
Second LTIIP (2020-2023 Actual)	$1,023.0
Second LTIIP (2024 Projected)	$260.2

Figure 18, below, provides a projection of total annual expenditures for the Third LTIIP period (2025 through 2029). In total, the Company plans to invest approximately $1.7 billion on infrastructure improvements during the term of the Third LTIIP.

Figure 18. Third LTIIP Annual Expenditures 2025-2029

Fiscal Year	Capital Investment UGI Gas ($MM)
2025 Projected	$298.5
2026 Projected	$330.5
2027 Projected	$340.0
2028 Projected	$353.6
2029 Projected	$367.7

b. Means to Finance the Accelerated Spending

Construction costs associated with LTIIP projects have increased significantly over a very short period of time. The Company continues to experience increased costs from local governments, in the form of restoration requirements including parking permits and other fees that local governments deem mandatory in order for the Company to complete its work on a timely basis.[15]

[15] Regarding these cost increases, the Company explained in its 2022-2023 AAOP:

> The planned capital for 2023 also includes cost increases associated with the complexity, location and size of remaining cast iron main replacement projects, which must be completed by 2027.

The Company finances ongoing capital needs through a variety of sources, including short-term debt and long-term debt issuances approved by the Commission, as well as internally generated cash flows that will be supported, in part, by the Company's DSIC. To the extent that the infrastructure replacement work in the LTIIP justifies further financial relief, the Company will seek separate Commission approval at such time as it is deemed necessary and appropriate.

UGI Gas has and will continue to employ numerous oversight and control processes in order to ensure resources expended on its LTIIP projects are being prudently spent. The Company has an ongoing commitment to provide value to its customers, which includes considering the quality of materials, the timeliness of delivery, and the need to replace facilities to maintain safe and reliable service to customers. The Company monitors and maintains cost effectiveness in the following ways:

- Competitive bidding of multi-year pipeline construction and restoration contracts;
- Utilization of unit based pricing to limit change order impacts;
- Issuance of special bids for large or unconventional projects;
- Recruitment of additional qualified contractors to increase the competitive nature of the process;
- Evaluation and implementation of new or improved technologies to decrease costs, including:

Further, the cost of materials and labor associated with LTIIP projects have increased significantly over a very short period of time. The Company also continues to experience increased costs from local governments, in the form of permitting fees, restoration requirements, parking permits, and other fees that local governments deem mandatory in order for the Company to complete its work on a timely basis. (AAOP at 6-7).

  - Directional drilling, insertion, and other minimally disruptive trenchless technology versus traditional direct burial
  - Key hole / core bore service replacement
- Performance of periodic staffing allocation reviews to assure optimal resource utilization and deployment.

The Company uses a comprehensive planning process to increase construction efficiency and reduce costs where it is possible to do so without compromising on the integrity or safety of its replacement work.

Finally, while cost effectiveness is a primary goal for UGI Gas, it is important to note that the comprehensive effect of the LTIIP on local economies is a positive one. These economic impacts are in addition to the widely recognized safety and reliability benefits produced by the replacement of aging facilities, and the significant avoided economic losses that are associated with an unplanned service failure or safety incident. The dollars spent and the workers hired by UGI Gas in support of its LTIIP programs provide a direct economic benefit to the communities that UGI Gas operates in, and to the Commonwealth of Pennsylvania more generally.

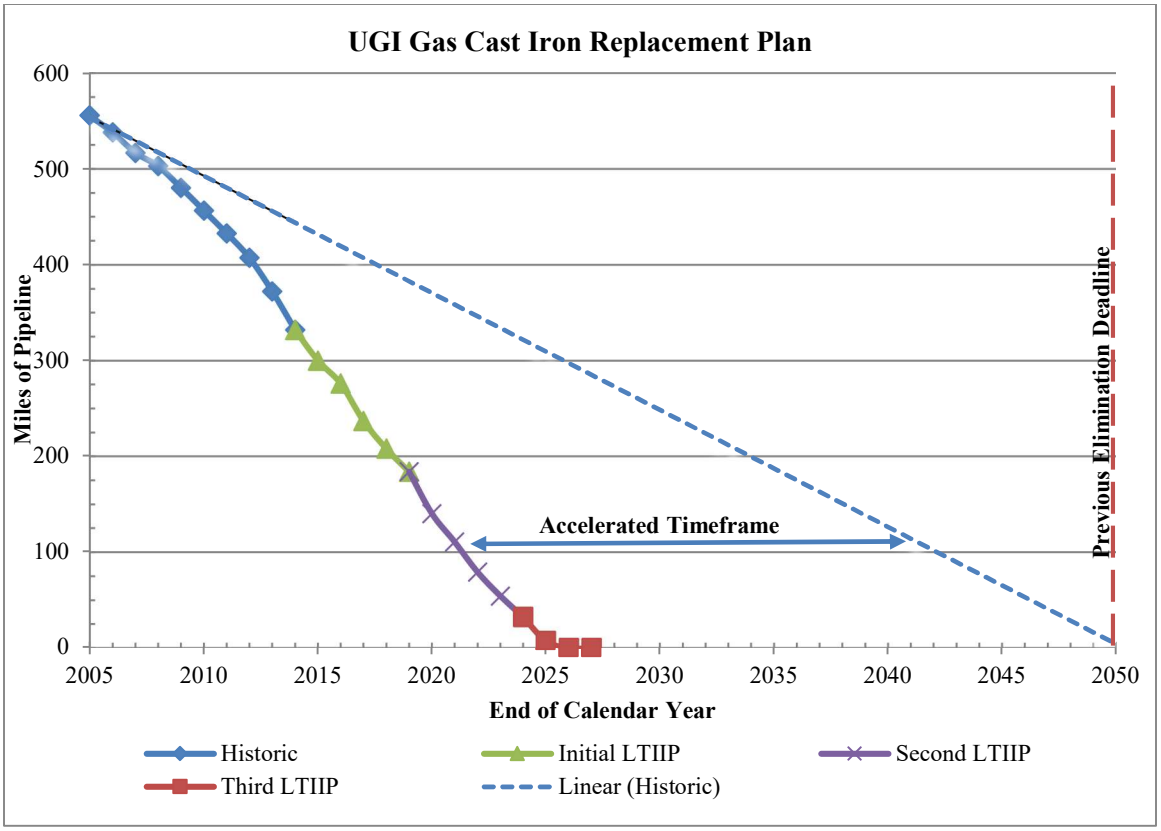
F. Manner In Which Replacement of Aging Infrastructure Will Be Accelerated And How Repair, Improvement, Or Replacement Will Maintain Safe and Reliable Service

a. Acceleration

The Third LTIIP will continue to reflect acceleration that has previously been approved by the Commission. Cast iron distribution mains will be eliminated from the UGI Gas system during the Third LTIIP. The graph in Figure 19, below, provides a visual representation of the impact of the Initial, Second and Third LTIIP versus the Company's

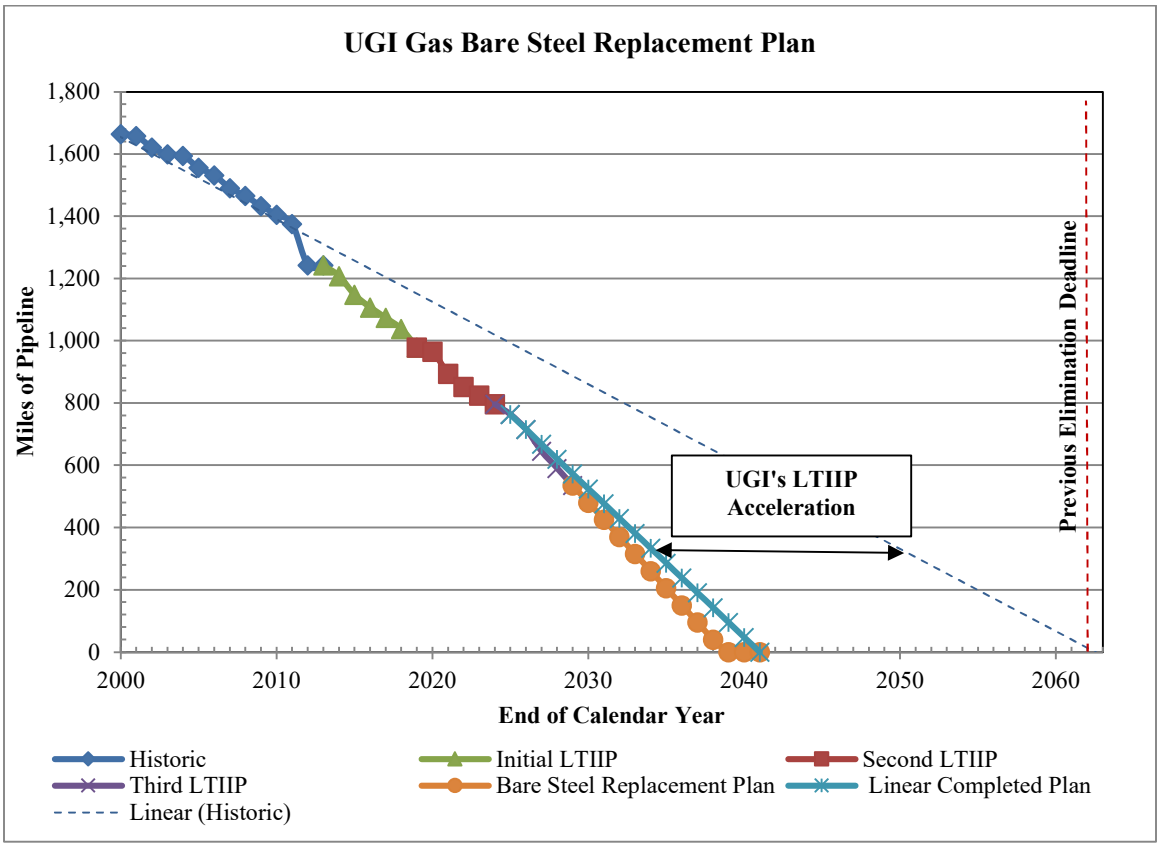
baseline replacement timeframe, which was based on the historical replacement trend. Per the accelerated replacement rate, all cast iron mains will be eliminated from UGI Gas's system decades in advance of the baseline timetable.

Figure 19. Accelerated Cast Iron Replacement



As part of its Initial LTIIP, the Company committed to replace all bare steel and wrought iron mains by September 2041. The graph in Figure 20, below, provides a visual representation of the accomplished and projected schedule for replacement of bare steel and wrought iron mains versus the previous replacement timeframe based on the baseline historic replacement pace. Per the accelerated replacement rate, the Company plans to remove all bare steel and wrought iron mains from the UGI Gas system far earlier than the baseline timetable.

Figure 20. Accelerated Bare Steel / Wrought Iron Replacement*



* End date contingent upon future Commission approval of replacement plans that reflect a sufficient pace for annual replacement of non-contemporary main per year.

For the purposes of the Third LTIIP, UGI Gas will maintain the cast iron replacement deadlines that were reflected in its Initial LTIIP, *i.e.*, 2027, although the pace of acceleration reflected in the Second LTIIP allows the Company to complete its replacement activities ahead of this deadline. At the rate of bare steel replacement reflected in this Third LTIIP, and continued into the future with the necessary regulatory approvals, the Company will be on pace to replace all bare steel main ahead of 2041. For any given intermediate period, the sequence of projects and amount of specific facilities to be addressed may be adjusted in response to changing conditions. A variety of factors intrinsic to the natural gas distribution business may cause these changes to occur. These factors include, but are

not limited to, state and municipal relocation projects, other private construction projects, system upgrades due to pressure requirements, regulatory changes, and legislative changes.

b. Accelerated Capital Investment

The Company's plans for accelerating its capital investments during the Third LTIIP was set forth in Sections VI.B, VI.D, and VI.E, above, and is incorporated herein by reference. Moreover, in accordance with the accelerated replacement plan described above, UGI Gas ramped up needed resources and capital spending levels going into its Initial LTIIP. The Company will continue an accelerated pace of replacement above its baseline for the 2025 through 2029 period of the Third LTIIP.

For purposes of demonstrating the acceleration commitment made by UGI Gas in this Third LTIIP, the Company will continue to measure acceleration as compared to the baseline period established in the Initial LTIIP. Figure 21 shows the Company's projected accelerated investment in its Third LTIIP as compared to the baseline.

Figure 21. Average LTIIP Investment by Year

Period	Average Investment Per Year ($MM)	Average Main Replaced Per Year (Miles)
Baseline	$50.5	53.2
Initial LTIIP	$134.1	63.6
Second LTIIP	$256.6	68.8
Third LTIIP	$338.1	65.0

For the five-year period reflected in the Third LTIIP, the Company has committed to a significant increase in capital investments, $338.1 million on average per year.

c. Safe and Reliable Service

UGI Gas expects that the investment targets established in this Third LTIIP will provide customers with significant improvements in safety and reliability. Proposed Third LTIIP investments were identified and prioritized on a risk basis in accordance with UGI Gas's DIMP and TIMP plans. Risk based prioritization ensures that those projects which deliver the most significant risk reductions are addressed first. Customers have and will continue to accrue benefits over time in terms of reduced leakage rates, fewer main breaks, and fewer unplanned customer interruptions. Additionally, it is expected that the amount of lost and unaccounted for gas due to system leakage and measurement inaccuracy will be reduced over time as leaks are eliminated and meters are replaced. Finally, peak day reliability will improve as pressure improvement projects elevate system low points under peak day design conditions.

UGI Gas uses a standardized leak classification system consistent with general industry protocols. Class 'C' leaks are deemed hazardous and repaired immediately. Class 'B' leaks may become hazardous if otherwise not repaired, and are scheduled for repair within 12 months. Class 'A' leaks are classified as non-hazardous and are periodically monitored for changes in severity. Figure 22, below, shows the average number of hazardous 'C' leaks repaired for the baseline period for 2009 through 2011. The Initial and Second LTIIPs reflect a 39% decrease in the average of hazardous leaks over that time period.

Figure 23, below, shows the total number of 'B' leaks reported between the baseline period and December 2023, reflecting a 45% reduction. Figure 24 below shows the total number of 'B' leaks between the baseline and the Second LTIIP and reflects a 56%

reduction in 'B' leaks. Figure 25, below, shows the total number of non-hazardous 'A' leaks reported between the baseline period and December 2023, reflecting a 57% reduction in the 'A' leaks reported. Figure 26, below, shows the total number of non-hazardous 'A' leaks between the baseline period and the Second LTIIP, reflecting a 42% reduction in the 'A' leak inventory.

Figure 22. Total Hazardous 'C' Leaks Repaired Baseline (2009-2011) through Second LTIIP

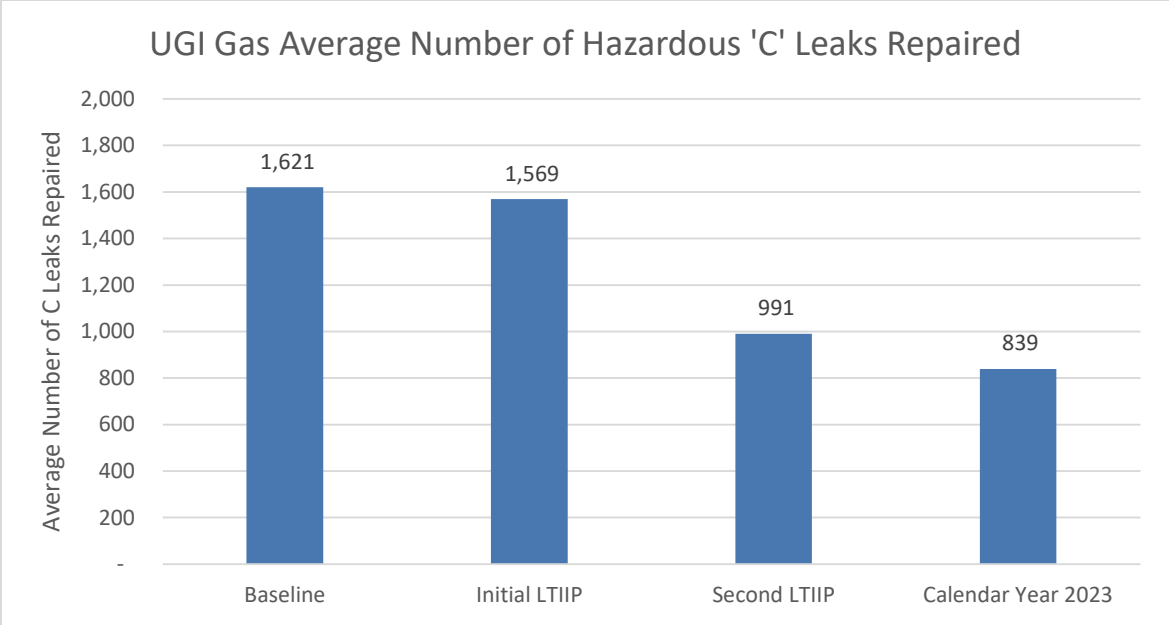


Figure 23. Average Number of B Leaks Reported Baseline (2009-2011) through Second LTIIP

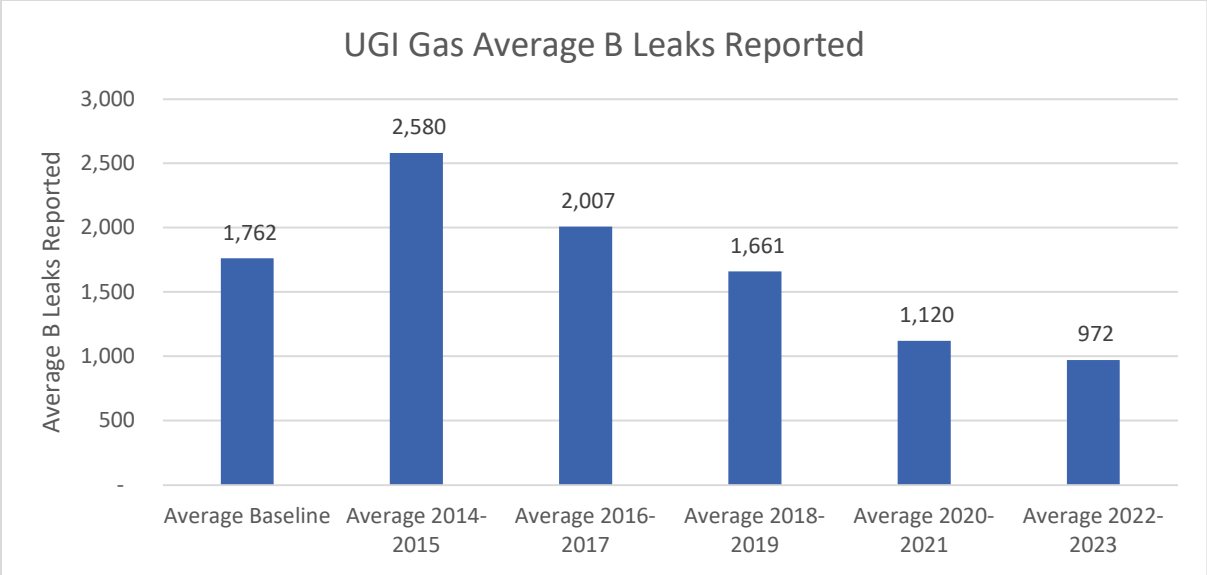


Figure 24. Average B Leak Inventory Baseline (2009-2011) through Second LTIIP

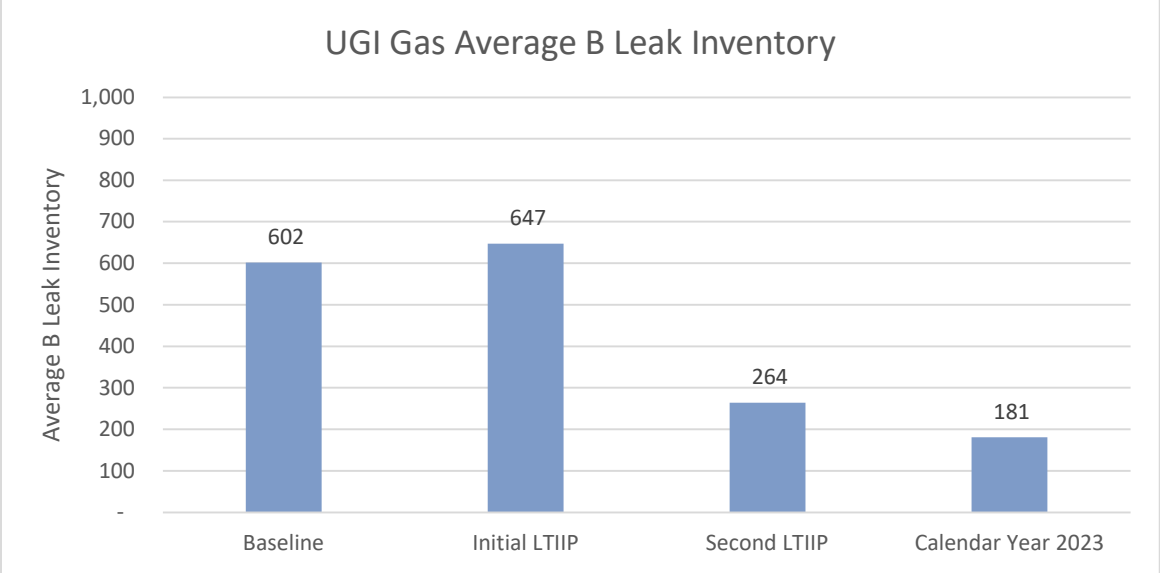


Figure 25. Average Number of A Leaks Reported Baseline (2009-2011) through Second LTIIP

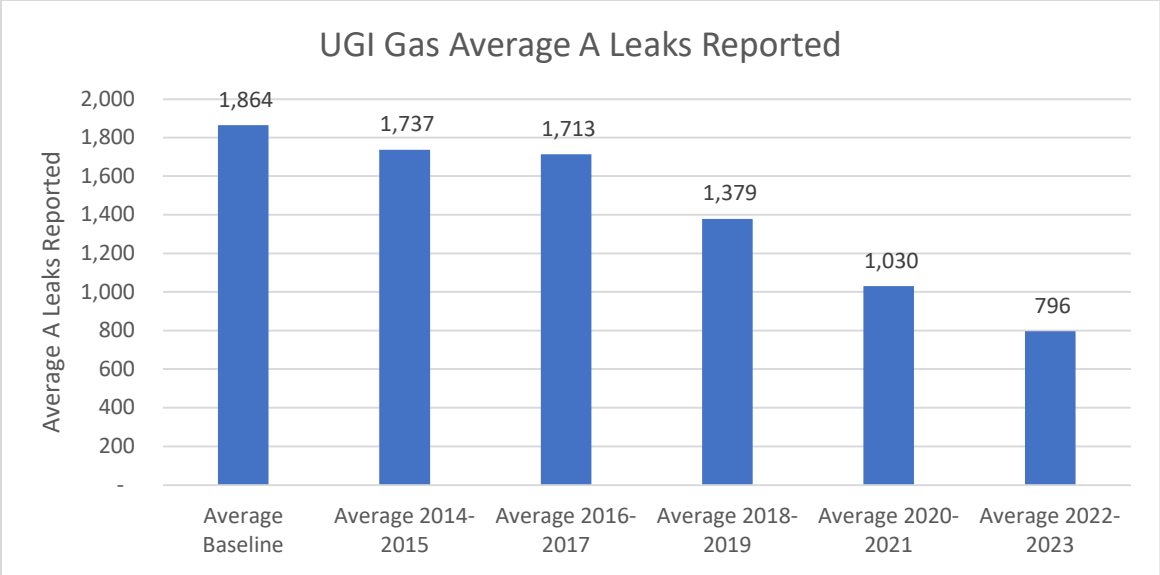
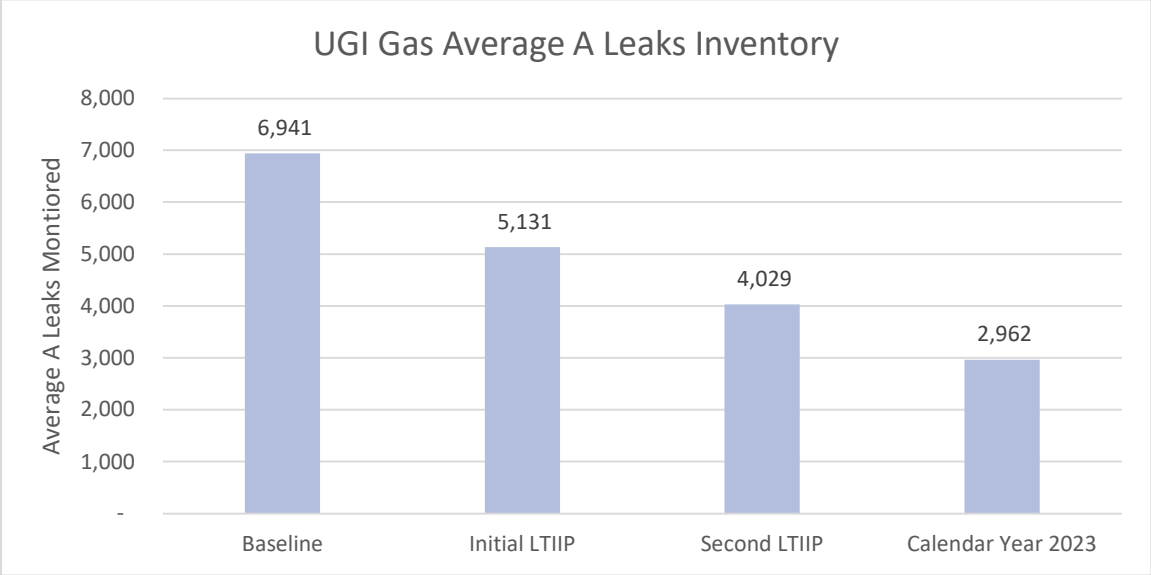


Figure 26. A Leaks Inventory Baseline (2009-2011) through Second LTIIP



The Company expects that the Third LTIIP will further improve these leak reduction trends as more vintage pipe is replaced. UGI Gas will monitor safety and reliability indicators for its natural gas distribution system over time to evaluate corrosion and leak resolution

performance, track emergency response, and pursue damage prevention, all of which will drive improvements in employee and public safety.

G. Workforce Management And Training

a. Training and Operator Qualifications

Safety performance is now and will always remain a fundamental imperative at UGI Gas. The programs identified in this LTIIP are resource intensive and require a significant complement of trained and qualified Company employees and contractor personnel to accomplish the identified targets on time and safely.

In light of the Company's need for this highly trained workforce, UGI Gas built a state-of-the art Training Center, which has been in operation since September 2021. The facility includes an approximate 47,000 square foot training center, a "safety town" for real-life outdoor training inclusive of leak pinpointing and investigation, and a separate welding and tapping center. The interior of the Training Center includes meeting rooms, a safety lab, several lecture rooms, a service lab, a metering and regulation lab, and a computer lab. Classrooms and laboratories were designed to address four primary training deliverables: (1) safety; (2) construction and maintenance; (3) measurement and regulation; and (4) utility service. The Training Center provides the facilities for delivery of technical training and operator qualification programs as required to support the programs identified in this LTIIP. For instance, the Training Center includes construction training and qualification testing in plastic pipe fusion, steel pipe welding, and pipeline tapping and stopping, among other construction activities.

Through the Training Center, UGI Gas's employees and contractors develop the skills required to do their jobs safely and efficiently. To ensure that personnel performing

critical tasks on all pipeline facilities have the necessary knowledge, skills and abilities, UGI Gas conducts an Operator Qualification ("OQ") Program. The OQ program includes more than 120 identified tasks, with many sub-parts within tasks, requiring extensive training, testing and qualification verification. Field technicians complete comprehensive safety courses including jobsite safety, driver safety, fire extinguisher use, pipefitting, hazardous materials recognition, abnormal operating condition recognition, emergency response, basic gas piping construction and maintenance, and leak detection. In addition to the Company's training program, contractors working on the UGI Gas system must pass a rigorous review and meet all DOT regulatory requirements. Contractors must maintain current written documentation including OQ plans, safety plans, and drug and alcohol abuse prevention plans.

The Company has an established, robust safety program in place. Through the utilization of daily safety awareness messages, weekly incident reviews, safety message boards, monthly newsletters and monthly safety meetings, safety messaging is part of our Safety Culture. In addition, UGI Gas utilizes Tailgates, Safety Alerts, Advisories and Stand-downs to address situational communications, highlighting impending safety situations or to highlight and address an identified safety incident with employees.

In 2021, UGI Gas implemented a new driver safety telematics system which includes forward and cab facing video cameras, including Artificial Intelligence ("AI") functionality to alert on distracted driving and other bad driving habits. This allows for supervisory coaching to help improve an employee's driving behavior. UGI Gas experienced a 32% decrease in the number of coachable incidents since 2023, as employees' driving behaviors improve.

Beginning in 2021, UGI Gas implemented a Near Miss/Good Catch program which helps employees to identify and recognize the hazards around them, whether they exist in an office building, a vehicle or a construction site. This allows for open communication and heightened awareness of hazards, sharing of lessons learned and a safety culture striving for continuous improvement. Safety has always been and will continue to be a core value at UGI Gas.

In addition to the extensive training of employees and contractors, UGI Gas utilizes internal and external inspections to ensure compliance with quality and safety requirements. UGI Gas uses construction inspectors to inspect natural gas distribution facility projects performed by contractor crews. In addition, the Company's internal Quality Assurance department performs regular inspections that include reviews of the quality and safety of construction activities, and verification of qualifications of individuals performing OQ-covered tasks. Quality Assurance inspectors perform unannounced job site inspections of both Company and contractor crews. Any deficiencies identified are escalated to Company or contractor management for investigation and correction. The Quality Assurance department also participates in contractor safety meetings. UGI Gas is also subject to regular safety and quality inspections by the Commission. The Company works cooperatively with Commission inspectors to address any identified areas of concern. The combination of internal, external, and Commission inspections supports UGI Gas's overall commitment to a well-trained workforce that completes LTIIP work in a safe and reliable manner.

d. Resource Requirements

UGI Gas has hired incremental managers, supervisors, engineers, project managers, inspectors, and contractors to accelerate the replacement of facilities reflected in the LTIIP. The Company will continue to scale its workforce as necessary to address attrition in support of its LTIIP programs. To ensure that the Company has continued access to the workforce necessary to support its LTIIP programs, UGI Gas has allied with universities and post-secondary technical schools, such as Thaddeus Stevens College in Lancaster and Pennsylvania College of Technology, as well as partnering with veteran groups. Through its partnerships, combined with its internal training programs, UGI Gas provides a sufficient workforce of qualified employees. In addition, the Company works hand in hand with its contractors to retain key workers needed to meet accelerated replacement schedules safely and reliably, and to do so in a way that controls costs.

H. Project Coordination and Municipal Outreach

UGI Gas has a long-standing and active outreach program with local municipalities in its service territory aimed at coordinating construction projects. The municipal outreach program allows for clear communication of information about the natural gas distribution system's safety, design and operations, as well as information regarding upcoming facility improvement projects. Coordination with municipal governments minimizes disruptions to residents in the area of proposed construction, enables efficient replacement of facilities, and promotes awareness of construction projects being performed around UGI Gas's infrastructure.

According to 52 Pa. Code § 59.38, each public utility must notify the Commission of all major construction, reconstruction or maintenance of plant at least 30 days prior to

the commencement of work. Notification must be given when the estimated expenditure for any single project exceeds $300,000 on the sum of main, paving and service replacement costs. As a practice, notification shall be sent for multiple LTIIP projects grouped by a close proximity that are estimated to total $300,000 or more for main, paving and service replacements.

UGI Gas seeks to combat rising costs associated with restoration and to reduce costs associated with mobilization, materials delivery and stockpiling. As part of this effort, the Company utilizes geographic planning of projects, to limit the need to move resources to an area more than once, and to reduce the amount of restoration that must be done. In addition, UGI Gas seeks to coordinate replacement efforts with other street projects and use trenchless construction techniques or other technological innovations where it is possible to do so to reduce the overall cost of restoration passed on to UGI Gas's customers. Finally, the Company has challenged municipal requirements which would otherwise add to the Company's restoration costs, and has and will continue to participate in stakeholder meetings to address the burden of municipal restoration requirements on its smaller-scale projects or maintenance type work as compared to large projects. This is because many of the large projects undertaken by UGI were on state roads. UGI Gas will continue to actively monitor projects through its Paving and Restoration team. Better alignment and oversight on the restoration work in the future will improve data collection and review processes, and drive transparency on restoration throughout the UGI Gas service territory.

Geographic planning of projects has benefits in addition to reduced costs. It also reduces the community impact where projects occur by ensuring that replacement activities

are completed with fewer mobilizations into and out of a community. As the construction crew completes main and service replacements, construction moves from one portion of an area to another, so that disruptions such as road closures, parking restrictions, construction noise and interruption of service are restricted to only the time required to complete the main and service replacement in the immediate area. Geographic planning also improves inspection efficiency and safety performance.

Overall, UGI Gas will focus on continuously enhancing planning, response and facility restoration efforts. Changing circumstances impacting the accelerated facility restoration efforts will cause a need for constant review and update of the responses and techniques used. In addition, communication approaches, information management systems and operations protocols used in facility improvement will need to be adjusted and continuously improved. UGI Gas is refining the planning and resource alignment processes used in accelerated facilities improvement initiatives. Moreover, the Company is constantly reviewing and evaluating facility information to continually enhance and refine the accuracy of infrastructure data.

Finally, UGI Gas will continue an evaluation of industry best practices, collaboration with industry partners, and interaction with regulatory agencies. Opportunities to enhance and expand the effectiveness of processes and procedures will be evaluated and considered to ensure continuous improvement of infrastructure that is cost-effective and ensures the Company maintains adequate, efficient, safe, reliable and reasonable service to customers.

Appendix A

Distribution Integrity Risk Evaluation

UGI Gas's Distribution Integrity Management Program ("DIMP") employs several methods to evaluate, rank, and trend risk for each former rate district. The primary evaluation method is an internally developed data-driven model, which computes total risk and average risk per unit for facility groupings based on facility type (main or service), pressure, component, and threat. This model is updated and evaluated annually. In conjunction with this method, commercial software integrated with Geographic Information System ("GIS") data is utilized to compute risk for individual main segments to allow for prioritization of planned main replacements. Additionally, as a supplement to these data-based methods, UGI Gas gathers individual Subject Matter Experts from each former rate district on a quarterly basis to produce and validate a relative risk ranking of distribution assets and/or threats and to communicate about distribution integrity issues. This approach complements the data-based methods by capturing unique or emerging threats that cannot be quantified through available data.

The outlines below summarize distribution infrastructure data considerations and distribution integrity threats incorporated in UGI Gas's DIMP plan.

Physical Infrastructure

Pipe material

A. Plastic
    1) Polyethylene (PE)
    2) Aldyl A Polyethylene (PE)
    3) Poly Vinyl Chloride (PVC)
    4) Fiberglass
B. Steel
    1) Coated, cathodically protected (CPed)
    2) Coated, non-CPed

3) Bare, CPed
4) Bare, non-CPed
5) Copper
6) Cast iron
7) Wrought iron
8) Other

Pipe specifications

A. Diameter
B. Pipe segment length
C. Pipe specifics (length from Joint to Joint) [primarily for cast/ductile iron]
D. Manufacturer & Lot Number
E. Steel pipe specifics as appropriate
    a. Grade
    b. Wall thickness
F. Plastic pipe specifics
    a. Medium density/high density
    b. Standard Dimension Ration (SDR)

Construction Specifications

A. Year installed
B. Joining Method (e.g., coupling, mechanical joint, bell and spigot, welded, threaded, fused, electro-fusion, adhesive)
C. Installation method (e.g., open trench, inserts, boring, directional drilling, excavation and backfill by others, common trench, etc.)
D. Location (e.g., in street, behind curb, in private right-of-way)
E. Cover
    a. Depth (original, current, restored)
    b. Type (e.g., backfill, pavement, grass/dirt, gravel/slag, above ground)
F. Company/contractor completing installation
G. Casings
H. Rock shield
I. Crossings (e.g., highway, bridge, underwater)
J. Expansion loops (thermal effects)
K. Pipe support systems

Corrosion control

A. Below ground coating type – mill and field applied (e.g., coal tar, PE, fusion bonded epoxy, wax, cold or hot applied tapes, etc.)
B. Cathodic protection (e.g., galvanic anode, impressed current)
C. Electrical isolation (e.g., type, location)
D. Stray current areas (e.g., interference, bonds, reverse current switch)
E. Above ground coating type

Valves

A. Size
B. Type (e.g., ball, gate, plug)

C. Location
D. Usage (e.g., emergency, station shutoff, bypass, convenience)
E. Manufacturer
F. Material
G. End connections
H. Pressure rating (e.g., ANSI or WOG class)

System pressure regulation
A. Regulator type, manufacturer and model
B. Regulator trim (e.g., orifice, cage size)
C. Location
D. Design and typical inlet and outlet pressures
E. Regulator capacity
F. Operation (e.g., pilot, spring, weight)
G. Means of overpressure protection (e.g., relief valve, monitor, slam shut, combinations)
H. Relief valve capacity and build-up as required

Other
A. Specialized components (e.g., EFVs, insulating joint or union, anodeless riser, expansion or other flexible joint)
B. Drips
C. Field Fabricated fittings (e.g., reducing coupling, service entry jacket, leak repair device)
D. "Priority facilities" under physical facilities security program

<u>Historical Operating Information & Attributes</u>

Results of inspections and surveys
A. Leak surveys
B. Corrosion inspections
C. Valve inspections
D. District regulator inspections
E. Patrols
F. Special field surveys or patrols (e.g., post-flooding patrols or winter/frost leak surveys)
G. Liquids removal

Documentation of leaks and other maintenance performed
A. Leak grade
B. Repair type
C. Exposed metallic pipe inspections
D. Corrosion control systems
E. Equipment or component replacements
F. Material or equipment failure reports

G. Number of leaks eliminated/repaired by cause of leak category (Part C of the Annual DOT Report)
H. Incident reports

Damage Prevention Locate / Excavation activity

A. Damage records (e.g., Operator, one-call center)
B. Responsible parties
C. The number of underground locate requests received
D. Proposed or completed significant construction activities

Geologic/environmental conditions

A. Surface type at grade over pipeline
B. Proximity to varying building types and density
C. Earthquake zone
D. Known washout areas
E. Flood zones
F. Minimum and maximum temperatures
G. Soil types
H. Land subsidence areas

Operating pressure

A. Maximum actual/allowable operating pressure
B. Minimum operating pressure experienced
C. Normal operating pressure
D. Fluctuations (e.g., seasonal, random)
E. Uprating performed in the past.

General Industry Information

In addition to Company-specific information, UGI Gas monitors the activities of PHMSA, the American Gas Association, Plastic Pipe Data Committee, Gas Piping Technology Committee and industry publications to ensure that information related to failures experienced by other operators is known to UGI Gas. Such information is used to compare information about other operators to that of UGI Gas and to offer an additional source of information about failure data, and materials and operating problems throughout the gas industry.

Threat Identification

The following general threat categories are considered in the DIMP plan:

1) Corrosion – resulting from a hole in the pipe or other component that was caused by galvanic, bacterial, chemical, stray current, or other corrosive action.

2) Natural Forces – resulting from earth movements, earthquakes, landslides, subsidence, lightning, heavy rains/floods, washouts, flotation, mudslide, scouring, temperature, frost heave, frozen components, high winds, or similar natural causes.

3) Excavation Damage – damage caused by earth moving or other equipment, tools, or vehicles. Includes leaks from damage by operator's personnel or contractor, or people not associated with the operator.

4) Other Outside Force Damage – caused by fire or explosion and deliberate or willful acts, such as vandalism and due to vehicle damage. This list is non-exhaustive.

5) Material, Weld or Joint Failure – failure of original sound material from force applied during construction that caused a dent, gouge, excessive stress, or other defect that eventually resulted in a leak. This includes those due to faulty wrinkle bends, faulty field welds, and damage sustained in transportation to the construction or fabrication site, resulting from a defect in the pipe material, component, or the longitudinal weld or seam due to faulty manufacturing procedures.

6) Equipment Failure – resulting from malfunction of control/relief equipment including valves, regulators, or other instrumentation; stripped threads or broken pipe couplings on nipples, valves, or mechanical couplings; or seal failures on gaskets, O-rings, seal/pump packing, or similar leaks.

7) Incorrect Operation – damage from inadequate procedures or safety practices, or failure to follow correct procedures, or other operator error.

8) Other – resulting from any other cause not attributable to the above causes.

Consequence Factors

Subject Matter Experts establish weighting factors to represent consequences that may be anticipated in case of an integrity breach or failure involving facilities. Consequence factors are related to the location of the facility in relation to people and property as well as the amount of gas that could potentially be released. Consequence Factors are assigned in three general categories of (1) population/location, (2) operating pressure and (3) piping size. Population density risk factors are defined by the relative density of population in the Census Block the pipe segment is located within. Other factors are either identified from data included in pipe inspections or facilities installation data, or may be defined by an engineer with knowledge of the pipe segment and its environment.

CONFIDENTIAL

Appendix B

CERTIFICATE OF SERVICE

(Docket No. P-2024-)

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

VIA E-MAIL

Carrie B. Wright, Esquire
Bureau of Investigation & Enforcement
Commonwealth Keystone Building
400 North Street, 2nd Floor West
Harrisburg, PA 17120
E-mail: carwright@pa.gov

Darryl A. Lawrence, Esquire
Office of Consumer Advocate
555 Walnut Street, 5th Floor
Harrisburg, PA 17101
E-mail: DLawrence@paoca.org

Steven C. Gray, Esquire
Commonwealth of PA
Office of Small Business Advocate
555 Walnut Street, 1st Floor
Harrisburg, PA 17101
E-mail: sgray@pa.gov

Joseph L. Vullo, Esquire
1460 Wyoming Avenue
Forty Fort, PA 18704
E-mail: jlvullo@bvrrlaw.com
Commission on Economic Opportunity

John W. Sweet, Esquire
Lauren N. Berman, Esquire
Elizabeth R. Marx, Esquire
Ria M. Pereira, Esquire
Pennsylvania Utility Law Project
118 Locust Street
Harrisburg, PA 17101
E-mail: pulp@palegalaid.net
CAUSE-PA

Karen O. Moury, Esquire
Eckert Seamans Cherin & Mellott, LLC
213 Market Street, 8th Floor
Harrisburg, PA 17101
E-mail: kmoury@eckertseamans.com
NRG Energy, Inc.

Paula Mercuri
3 Villa Drive
Moosic, PA 18507
E-mail: qwilliams22@gmail.com

Elisabeth Lynch
210 Poplar Lane
Mill Hall, PA 17751
E-mail: fenrivers1@yahoo.com

Francis J. Riviello
609 Moosic Road
Old Forge, PA 18518
E-mail: mjriviello@icloud.com

Paul Forlenza
128 Saddle Ridge Drive Dallas, PA 19612
E-mail: prf2324@comcast.net

Joseph Sohn
1409 Girard Avenue
Wyomissing, PA 19610
E-mail: gzeppe1@comcast.net

Annette Miraglia 349 Rutter Ave
Kingston, PA 18704
E-mail: a.miraglia@hotmail.com

VIA FIRST-CLASS MAIL

Sam Galdieri
1162 Division Street
Scranton, PA 18504-2573

/s/Lindsay A. Berkstresser

Date: August 16, 2024 Lindsay A. Berkstresser