WGL NATURAL GAS LEAKS

Trends, Monitoring, and Mitigation Efforts in the District

2021 SNAPSHOT REPORT

PREPARED BY

PUBLIC SERVICE COMMISSION
District of Columbia

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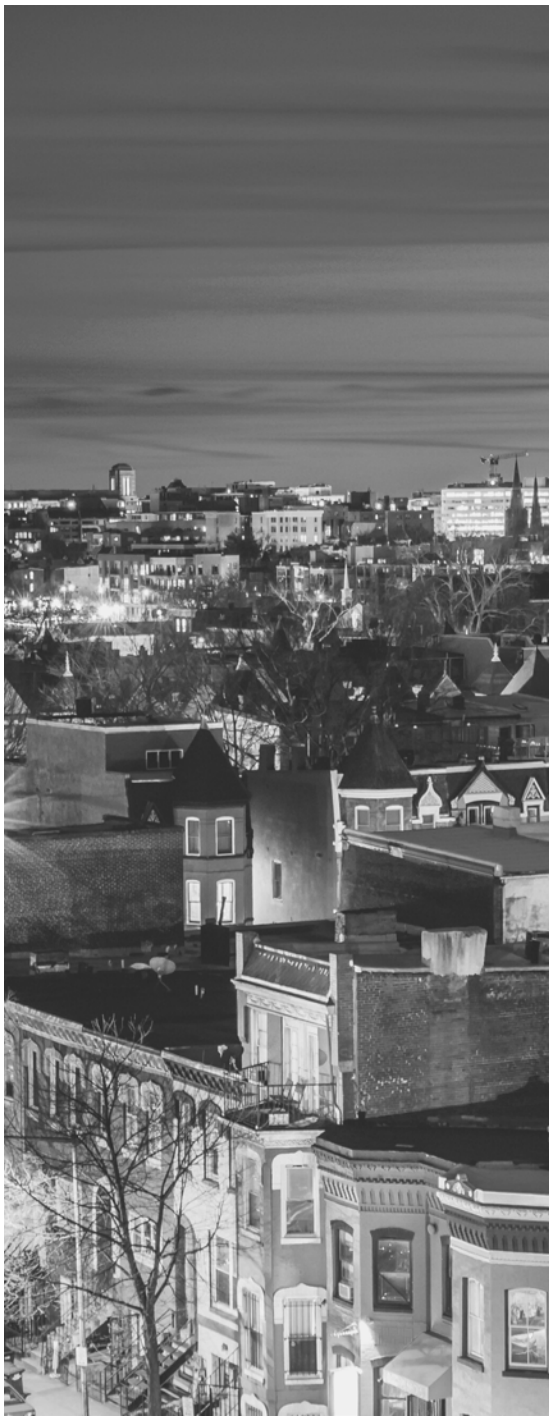
EXECUTIVE SUMMARY



By Order No. 20762, the Commission held that more transparency and access to natural gas leak information and trends on Washington Gas Light Company's ("WGL") 1,200-mile natural gas distribution pipeline system, which provides service to approximately 165,000 District of Columbia customers, would be beneficial for ratepayers and stakeholders.

The Commission closely monitors WGL natural gas leak trends in the District, WGL's ongoing gas leak survey and detection program, WGL's annual leak repair efforts, as well as the Company's accelerated pipes replacement program (PROJECTpipes).

The trained and certified staff at the Commission conduct pipeline safety and damage prevention inspections, as described herein.

COMMISSION EFFORTS TO MONITOR GAS LEAKS AND NATURAL GAS QUALITY OF SERVICE STANDARDS (NGQSS)

878
Hazardous Gas Leaks in the District in 2020

1515
Total Gas Leaks in the District in 2020

The Commission monitors WGL's reporting of gas leaks to the federal authorities (Pipeline and Hazardous Materials Safety Administration-PHMSA). The table below provides a comparison of gas leak data for calendar years 2016 to 2020, as reported to PHMSA. The federal authorities require gas operators to report leaks in two categories: "Total" leaks, and "Hazardous" leaks. PHMSA defines a "Hazardous" leak as a leak that represents an existing or probable hazard to persons or property, and requires immediate repair or continuous action, until the conditions are no longer hazardous. The category of "Other leaks" noted in the table below represents those remaining gas leaks reported to PHMSA, which are not deemed hazardous. Accordingly, the "Other" leaks category include non-hazardous leaks reported by WGL to PHMSA which may include various repaired leaks, leaks scheduled for future repair or continued monitoring.

WGL reported a total of 1,515 gas leaks for 2020 in the District, with 878 leaks deemed as hazardous leaks. Total leaks reported in 2020 to PHMSA were approximately 17% below 2019 total reported leaks.

A natural gas "main" pipe is a distribution pipe or line that serves as a common source of supply for more than one customer line. A "service" line is a distribution pipe that transports gas from a common source of supply to a customer. For 2020, WGL reported a total of 867 gas leaks on mains and 648 gas leaks on services in the District, including hazardous and other leaks.

Gas leaks that occur on private and/or customer-owned piping, and appliances and other equipment, which is inside a commercial building or a residence, and located "behind-the-meter" can be hazardous if undetected and not repaired immediately, as they often occur in confined spaces without adequate ventilation or other protections. It is the property owner and/or manager's responsibility to properly maintain such equipment and piping within their property to further protect customer and public safety. The gas leak tables noted below only cover gas leaks on WGL-owned piping and equipment.

The following tables were prepared from public reports to PHMSA/DOT:

Table 1: WGL Natural Gas Distribution System Leaks by Calendar Year [1]

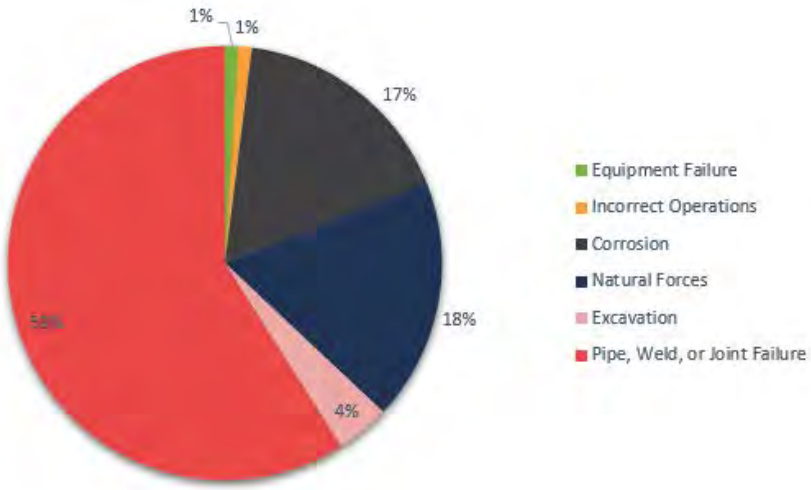
	Year	2016	2017	2018	2019	2020
Mains [2]	Hazardous	342	263	454	511	385
	Other	386	327	430	473	482
	Total	728	590	884	984	867
Services	Hazardous	478	494	596	629	493
	Other	138	133	178	213	155
	Total	616	627	774	842	648
Grand Total		1344	1217	1658	1826	1515
Difference from Previous Year						[17.03%]
Cum. Difference from 2016						12.72%

Table 2: WGL Natural Gas Distribution System Leak Rates by Calendar Year for DC

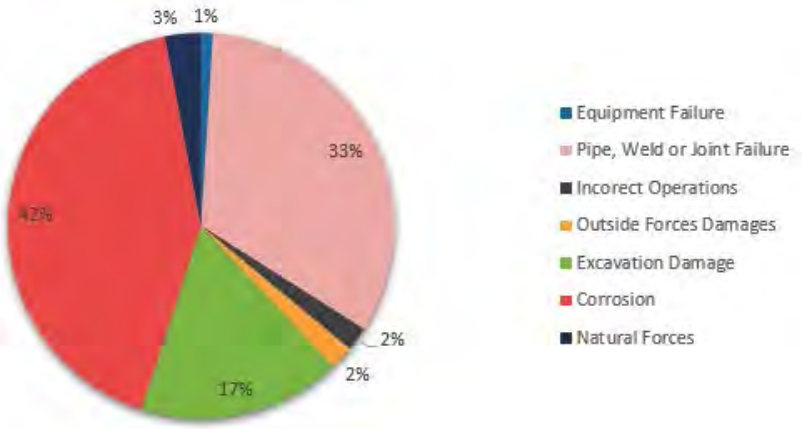
	Year	2016	2017	2018	2019	2020
Mains	Hazardous	0.28	0.22	0.37	0.42	0.32
(Leaks per mile of Main)	Other	0.32	0.27	0.35	0.39	0.39
	Total	0.60	0.49	0.73	0.80	0.71
Services	Hazardous	3.83	3.95	4.75	5.02	3.93
(Leaks per 1000 Services)	Other	1.11	1.06	1.42	1.70	1.24
	Total	4.94	5.02	6.17	6.72	5.17

[1] https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/data_statistics/pipeline/annual_gas_distribution_2010_present.zip
[2] https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/data_statistics/pipeline/annual_gas_distribution_2010_present.zip

COMPOSITION OF MAIN LEAKS (2016-2020)



COMPOSITION OF SERVICE LEAKS (2016-2020)



LEAK ROOT CAUSES

All leak root causes are identified and reported annually by WGL to PHMSA in accordance with federal regulations. According to data reported to PHMSA from 2016 to 2020, the most frequent leak causes are due to Pipe, Weld or Joint Failure, and Corrosion. The charts above show the composition of root causes for WGL's leaks in the District.

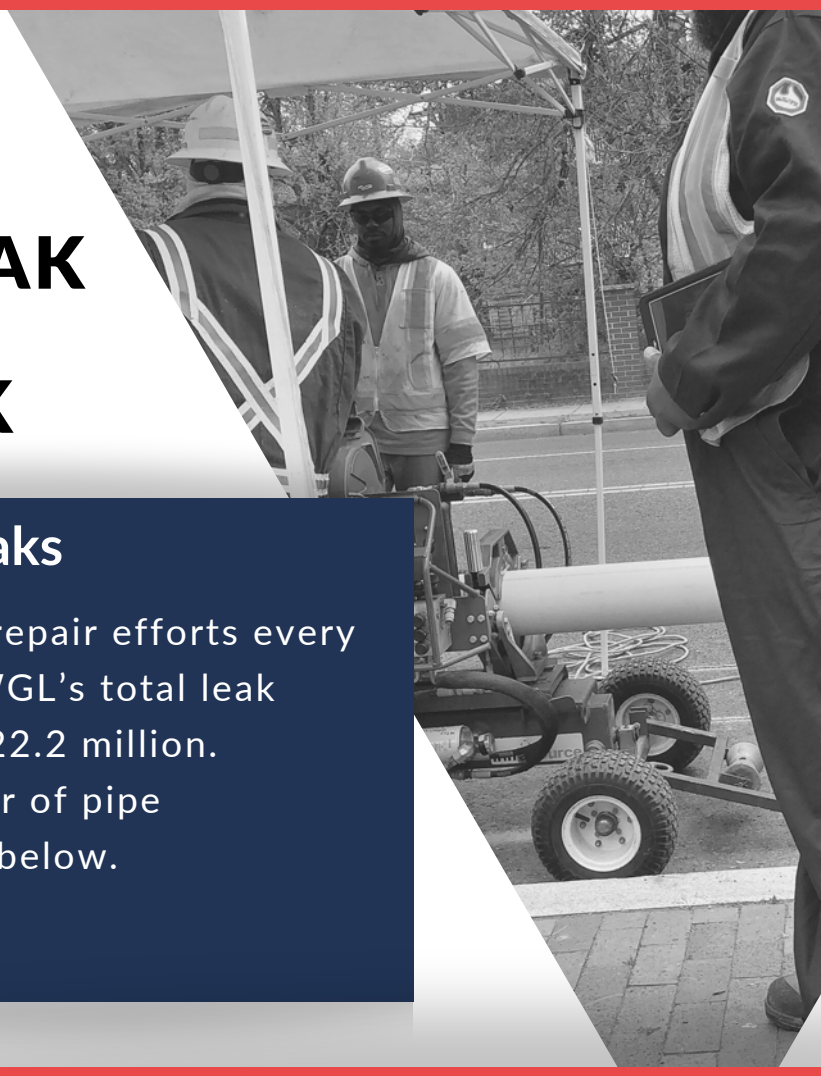
LEAK REPORTS

In addition to monitoring WGL gas leak data reported to PHMSA, the Commission adopted Natural Gas Quality of Service Standards (NGQSS) that requires WGL to provide, among other things, quarterly detailed leak reports called the Leak Identification, Detection, and Repair, and Odor Complaints report (LIDAROC). Leak reporting requirements to the Commission are more stringent and detailed in nature, than the summarized annual gas leak reporting provided by WGL to PHMSA. The LIDAROC report to the Commission contains, among other things, a numeric grade for each leak, type of leak, location of leak, including the Ward, the gas pressure involved, number of customers affected, cause of the leak, estimated and actual time to repair the leak, and other actions taken. The Commission carefully reviews and monitors these more detailed LIDAROC reports, as part of its overall regulatory oversight of WGL's distribution system.

All leaks reported to the Commission in the LIDAROC process are graded 1 through 3. A Grade 1 leak refers to a hazardous leak that presents an immediate or probable hazard to persons or property and requires immediate repair or continuous action until the conditions are no longer hazardous. A Grade 2 leak refers to a leak that is recognized as being non-hazardous at the time of detection, but requires scheduled repair based on probable future hazard. Grade 2 leaks are monitored and scheduled for repair, but do not require immediate action. A Grade 3 leak refers to a leak that is non-hazardous at the time of detection and can be reasonably expected to remain non-hazardous. Grade 1 and Grade 2 leaks reported to the Commission are generally included in the leaks reported by WGL to PHMSA.

WGL

REPAIR WORK, LEAK SURVEY & DETECTION WORK



WGL Repair Leaks

WGL undertakes extensive gas leak repair efforts every year, including emergency repairs. WGL's total leak repair costs in 2019 encompassed $22.2 million. Additionally, WGL executes a number of pipe replacement programs, as discussed below.

WGL Leak Survey & Detection Work

In addition to responding to leak calls reported by the public, WGL also conducts periodic leak survey activities throughout the District. WGL conducts leak surveys on its distribution system through six different survey cycles, according to the characteristics of the area and the piping systems present. Leakage Surveys are systematic inspections intended to locate any leaks in a gas piping system. A survey consists of testing and inspection of the area around the pipelines with gas detection equipment by a qualified technician. The entire distribution system is surveyed on a three-year cycle. This procedure exceeds the five-year minimum requirement outlined in federal regulations. Additionally, WGL has embarked on a new $1.4M pilot program, which includes the review, testing, and deployment of advanced leak detection technology equipment and practices.

LEAK SURVEY CYCLE

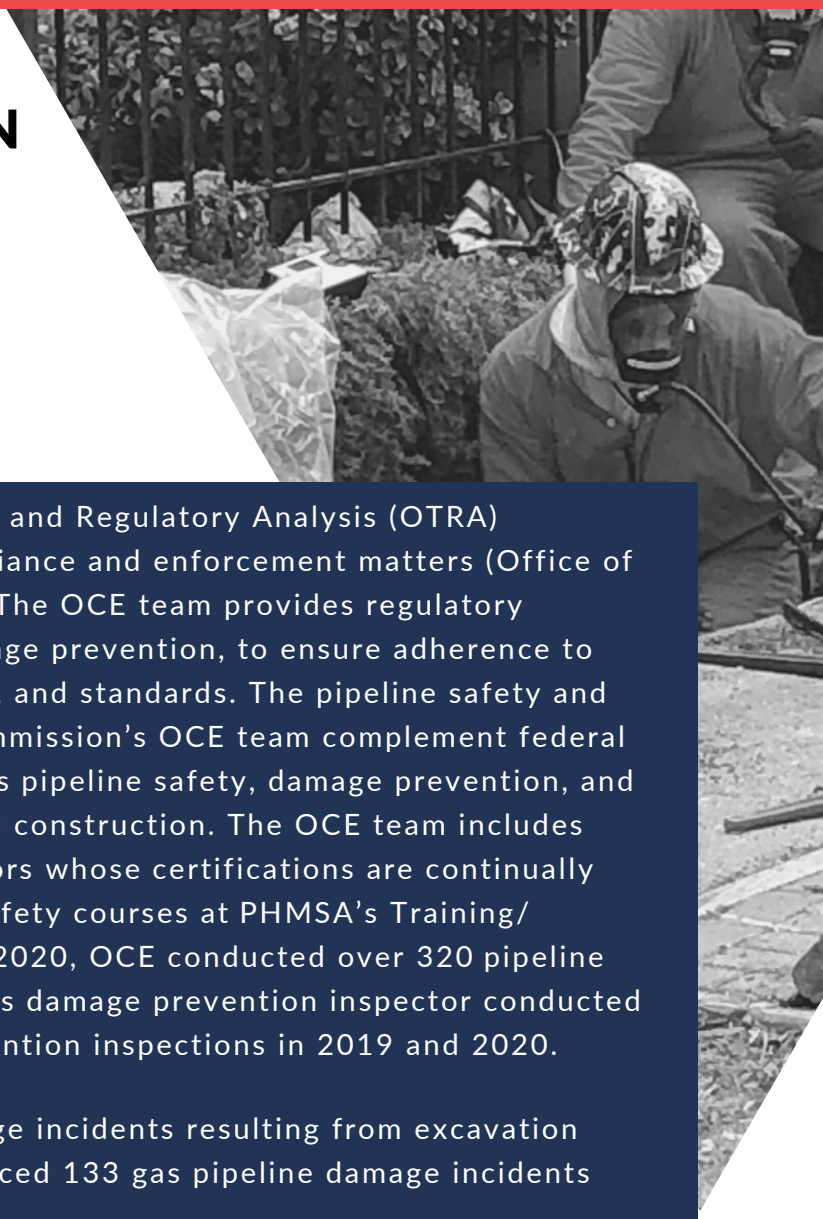
Annually

Six months or twice a year

Three months or four times per year

[3] Mains on Structures are Washington Gas- owned gas pipes attached to structures such as buildings or bridges and does not include any customer- owned behind-the-meter piping.

ON-GOING COMMISSION PIPELINE AND DAMAGE PREVENTION, AND SERVICE QUALITY ACTIVITIES



The Commission's Office of Technical and Regulatory Analysis (OTRA) maintains a dedicated team for compliance and enforcement matters (Office of Compliance and Enforcement—OCE). The OCE team provides regulatory oversight on pipeline safety and damage prevention, to ensure adherence to District and Federal laws, regulations, and standards. The pipeline safety and damage prevention efforts of the Commission's OCE team complement federal laws and regulations which govern gas pipeline safety, damage prevention, and pipeline operations, maintenance, and construction. The OCE team includes PHMSA-trained and certified inspectors whose certifications are continually updated through on-going Pipeline Safety courses at PHMSA's Training/ Qualifications facilities. In 2019 and 2020, OCE conducted over 320 pipeline safety inspections. Additionally, OCE's damage prevention inspector conducted approximately 800-900 damage prevention inspections in 2019 and 2020.

OCE also monitors gas pipeline damage incidents resulting from excavation activity in the District. WGL experienced 133 gas pipeline damage incidents during 2020 in the District.

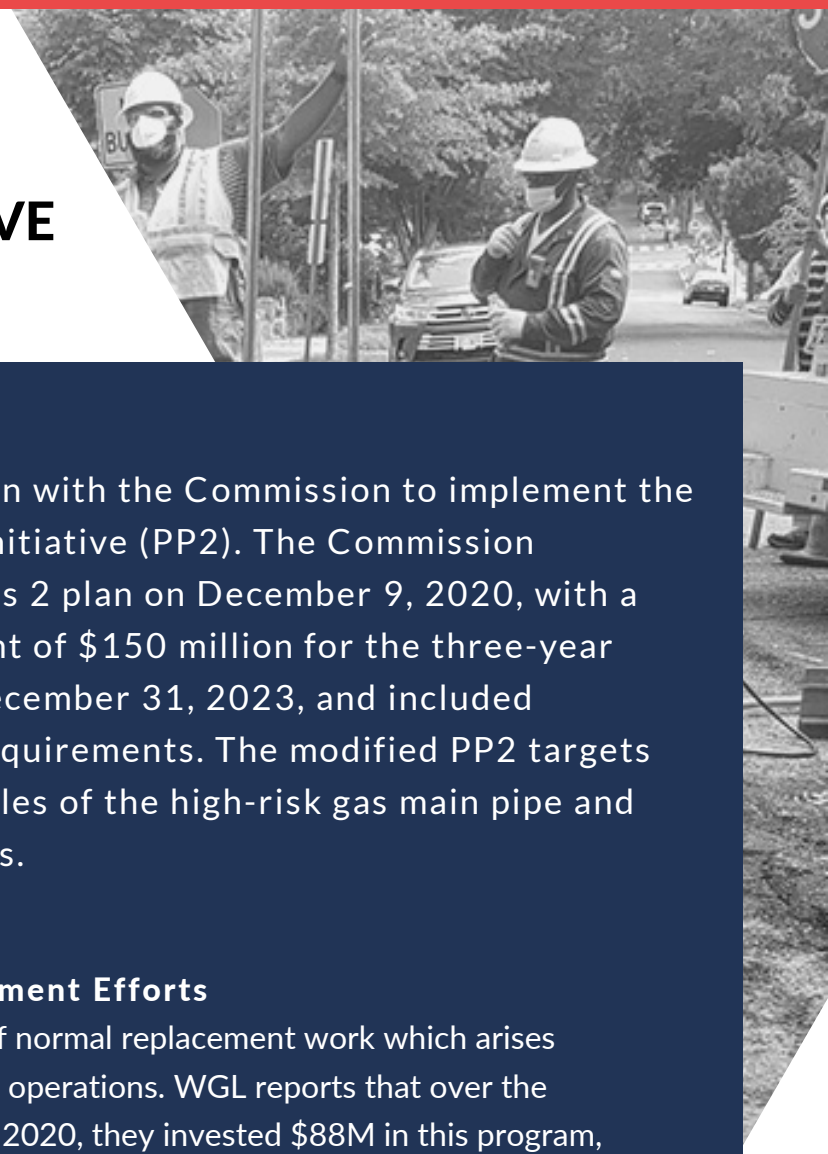
Under Chapter 23 of the Commission's regulations, OCE may propose monetary and non-monetary compliance and enforcement actions deemed necessary for WGL's compliance with Federal and DC laws and regulations. The recommended compliance/ enforcement action is referred to the Commission's Office of the General Counsel (OGC) for final legal determination of monetary penalties that reflect Commission rules and federal (PHMSA) assessment limits. Monetary penalties serve as a deterrent to future violations and unsafe practices and are not recovered in utility rates. The Commission's pipeline safety and damage prevention efforts are audited annually by USDOT/PHMSA. The Commission has received consecutive 100% scores on the PHMSA annual audits over the last six years through 2020.

The Commission oversees WGL compliance with NGQSS, as outlined in Chapter 37 of Title 15 DCMR, Formal Case 977. The Commission monitors WGL's performance on a quarterly and annual basis.

PROJECTpipes INITIATIVE

PROJECTpipes is a WGL accelerated pipeline replacement program to modernize the natural gas distribution system in the District and enhance overall system safety, reliability, and resiliency for gas customers. This accelerated replacement program also helps the District meet its climate goals by reducing potential leaks and methane gas emissions on the distribution system. Based on WGL's estimates, the total GHG emissions reduction would be approximately 6,000 mTons of CO2e over the three-year period (2021-2023) of PROJECTpipes 2. Furthermore, based on leaks by material type provided by the Company, the Commission estimates that there would be more than 100 avoided leaks over the three-year period of PROJECTpipes 2.

In August 2014, the DCPSC approved the first phase of the PROJECTpipes initiative (PP1) from June 1, 2014, to September 30, 2019, for a total investment of $110 million PP1 was extended for 15 months (through December 2020) while the next phase of this program (PP2) underwent rigorous review and consideration. During this review period, the Commission approved an updated total investment for PP1, including the 15-month extension, not to exceed $141.25 million. As of December 31, 2020, WGL replaced or remediated 22.2 miles of high-risk gas main and 4,308 service lines.



PROJECTpipes INITIATIVE

In December 2018, WGL filed a plan with the Commission to implement the next phase of the PROJECTpipes initiative (PP2). The Commission approved a modified PROJECTpipes 2 plan on December 9, 2020, with a surcharge eligible target investment of $150 million for the three-year period from January 1, 2021, to December 31, 2023, and included significant compliance reporting requirements. The modified PP2 targets remediation efforts on about 14 miles of the high-risk gas main pipe and 4,200 service lines over three years.

Other Natural Gas Pipe Replacement Efforts

WGL also executes an ongoing level of normal replacement work which arises during the ordinary course of business operations. WGL reports that over the seven-year period from 2014 through 2020, they invested $88M in this program, which encompassed the retirement of about 12 miles of main and nearly 5,800 gas service lines. WGL undertook an earlier program to remediate vintage mechanical couplings, which encompassed approximately $75 million of investment, covering 27 miles of gas main pipe, nearly 3,700 service lines, and 20,000 couplings. This program was completed in 2018 and was monitored under the Commission's FC1027.

Additional Information

Commission staff will periodically update this gas leak data, and other relevant information with the latest annual information reported by WGL. Additional information about WGL's PROJECTpipes program is available on WGL's website at https://www.washingtongas.com/safety-education/safety/pipe-replacement- projects/projectpipes.

As noted by WGL, if you suspect a natural gas leak or other emergency:

RECOGNIZE:
Natural gas smells like sulfur, or rotten eggs. If you smell that, it may be a sign of a leak.

REACT:
Upon smelling natural gas, leave your building or location immediately.

RESPOND:
Call 911, and then the Washington Gas Emergency Leak Line at 844-WASHGAS (927-4427), selecting option 1.

For further info about gas safety tips, refer to the WGL website at https://www.washingtongas.com/safety-education/safety/natural-gas-safety