

# **Mayors' Council on Pipeline Safety Gas Pipeline Safety Initiatives**

## *City Case Studies & Needs Assessment*

Prepared for  
The City of Allentown, Pennsylvania  
&  
Mayors' Council on Pipeline Safety

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## **Scope of Grant**

These case studies and the resulting needs assessment were designed to assist the Mayors' Council on Pipeline Safety (MCPS) in identifying cities in which to conduct case studies that would then be used to produce a needs assessment of risk management education and training needs specific to gas distribution pipeline infrastructure safety.

The case studies were to document city officials' knowledge regarding the five gas distribution system safety initiatives developed by MCPS in 2014-2015:

1. Clear definitions and minimum leak detection regulations such as what qualifies as a leak, how leaks are classified, and what is done about discovered leaks.
2. Defining a MCPS national campaign for more consistent and prescriptive distribution line safety regulations such as national regulatory standards for leak detection class; leak detection monitoring outside utility dictates; regulation on frequency of surveys; use of plastic vs steel in replacement of aging systems and in new systems
3. Development of a model Urban Pipeline Initiative in which utilities and cities share pipeline mapping information
4. Prescriptive response best practices specific to urban communities
5. Prescriptive use of automatic shut off valves

The needs assessment looked at specific gas distribution pipeline safety issues specific to local government officials such as increasing awareness of prevention programs, such as "811" and greater sharing of information.

These studies and the assessment were then vetted by MCPS in development of city official education programs, to encourage and obtain proactive membership in MCPS and to further develop and implement MCPS initiative outcomes through a strategic social media plan and campaign.

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## **Purpose of Study**

c.a.s.e. Consulting Services was contracted by MCPS to identify key cities to participate in a study of city officials' knowledge and experiences related to the following five MCPS initiatives:

1. Clear definitions and minimum leak detection regulations such as what qualifies as a leak, how leaks are classified, and what is done about discovered leaks
2. Defining a MCPS national campaign for more consistent and prescriptive distribution line safety regulations such as national regulatory standards for leak detection class; leak detection monitoring outside utility dictates; regulation on frequency of surveys; use of plastic vs steel in replacement of aging systems and in new systems
3. Development of a model Urban Pipeline Initiative in which utilities and cities share pipeline mapping information
4. Prescriptive response best practices specific to urban communities
5. Prescriptive use of automatic shut off valves

These case studies were then used to produce a needs assessment, including the identification of risk management education and training needs specific to gas pipeline and infrastructure safety specific to local government officials and awareness programs about existing pipeline safety and prevention awareness programs such as "811" Call-Before-You-Dig or One-Call. Working collaboratively with MCPS, case studies were also to be used to identify data necessary to educate city officials, encourage and obtain proactive membership in MCPS and implement a strategic outreach campaign to cities across the U.S.

In his September 15, 2015 report to MCPS, Accufacts, Inc. President Richard B. Kuprewicz, recommended: "States should incorporate additional details concerning leak grading, leak mapping by grade, cause and material, leak reassessment timing, into state regulations." These case studies found that while states seem to be developing such regulations, cities and municipalities are for the most part unaware of or are not involved in the development or

implementation of state gas leak regulations making it difficult to know if such leak detection actions will be the most effective that they can be in urban settings.

## Methodology

Using data collected by the Mayors' Council on Pipeline Safety, we identified five cities who were contacted via email and phone calls for scheduling of face-to-face interviews, Seattle (Washington), Boston (Massachusetts), Atlanta (Georgia), Austin (Texas), and Lafayette (Colorado). We aimed to select a diverse group of cities in terms of geographic location, population size, area, and pipeline age and materials. The interview instrument was a semi-structured set of questions related to the five MCPS initiatives (**Appendix 1**). We solicited interviews from city officials and staff responsible for and most knowledgeable of pipeline systems leak detection and safety programs in these cities. Only one out of the five cities, Seattle, granted us an in-person interview and only two of them, Boston and Lafayette, responded to our requests for interviews. After more than a month of email correspondence and phone calls to staff, the City of Boston granted only a 15-minute phone interview; however, a conflict with the interviewers' schedule prevented that interview from occurring. Lafayette officials were unable to meet for an interview during the period of this study due to personnel issues.

In a further attempt to get first-hand information directly from city officials and staff we sent the four cities who either did not respond or would not grant a face-to-face interview (Boston, Lafayette, Austin and Atlanta) the five interview questions via email in a simplified form that a city official or staff person could fill out and return via email (**Appendix 2**). Not one of these email questionnaires was returned. Our email request for the questionnaire was not even acknowledged by any of the city officials and staff persons to which it was sent.

This seeming lack of involvement and interest by cities in an important public safety issue that affects everyone is of grave concern, especially in cities such as Boston where aging cast iron and bare steel pipelines are a known public safety hazard<sup>1</sup>. In addition, for all cities but

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<sup>1</sup> Smith, Becky. 2014. Policy Options for Reducing Natural Gas Leaks in Massachusetts. Masters project submitted in partial fulfillment of the requirements for the Master of Environmental Management degree in the Nicholas School of the Environment of Duke University.

Seattle, without being able to document first-hand knowledge it is impossible to accurately describe, and thus analyze, how the municipal government interacts in practice with state and federal pipeline safety regulators and private utility companies on the specific issues in their cities related to pipeline leak detection schedules, tracking of leaks, notification of leaks, emergency response and notification, pipeline replacements and repairs, inter-related urban infrastructure problems, and implementation of local ordinances, state laws, and federal regulations. Without interviews with officials and staff it was difficult to conduct and verify the case studies for Boston, Atlanta, Austin and Lafayette.

Nevertheless, we attempted to account for this lack of direct information from each city by using what publicly available information could be found from primary sources (i.e., legislative dockets, legal findings, regulations, policy guidance, utility reports, inspection reports, PHMSA data, reports from pipeline companies, peer-reviewed scientific research, engineering documents) and secondary sources (i.e, interviews and statements from residents and pipeline safety experts who have lived and worked in each case study city, newspaper reports, policy white papers). Based on our interview with Seattle staff we hypothesized that other cities would have a similar level of knowledge and expertise on the pipeline safety issues we were investigating. Thus, these case studies led us to four important hypotheses:

- 1) Cities are not involved in surveys of gas leaks and rarely know about the location of previously detected gas leaks.
- 2) Cities are not aware of the specifics of the regulations and policies related to the federal or state reporting requirements that gas pipeline owners must adhere to and do not typically access company reports to the state or federal government.
- 3) Cities do not have maps of the locations of gas distribution infrastructure in their city.
- 4) Cities are most aware of their local emergency response procedures; however, the adequacy of those procedures for responding to pipeline emergencies is unknown until emergencies actually occur.

Because these are only hypotheses and have not yet been tested and verified, the overall

recommendation from this study is that PHMSA should undertake a comprehensive state-by-state review of city and municipal knowledge and understanding of urban pipeline infrastructure risks using these hypotheses as a basis for that review. At the same time, it would be useful for PHMSA to explore creating incentives for closer explicit collaboration among cities, states and gas pipeline operators on gas leak regulations, policies, surveys, annual reporting requirements, and timely notifications of distribution system problems.



## **Case Studies**

The following five case studies provide a detailed review of the characteristics of each city with regard to population, number of households, area covered, and gas pipeline distribution infrastructure at the end of 2015. These case studies also provide insight into what we could and could not document about how the state handles the safety issues related to gas distribution pipeline infrastructure with regards to leaks, mapping, communications, and emergency response and how this does or does not intersect with city policies and procedures.

## 1. SEATTLE, WASHINGTON

The City of Seattle has an estimated population of 684,451 people in an estimated 296,633 households over an area of 83.94 square miles<sup>2</sup>. In 2015, the company owning the majority of gas distribution pipeline facilities in the city, Puget Sound Energy, reported 12,596 miles of main lines and 789,272 service lines throughout their service areas.

The majority of miles of mains were installed between 1990-1999 and consist of 67.3% miles plastic PE pipe and 32.7% miles steel pipe (4,119 miles cathodically<sup>3</sup> protected). The majority of services were installed between 1990 and 2009. Across their system, Puget Sound Energy reports 84% plastic PE services and 16% steel services (126,244 cathodically protected service lines)<sup>4</sup>. Puget Sound Energy submits annual reports to the Plastic Pipe Database, a voluntary data collection initiative of the American Gas Association (AGA), American Public Gas Association (APGA), Plastics Pipe Institute (PPI), National Association of Regulatory Utility Commissioners (NARUC), National Association of Pipeline Safety Representatives (NAPSR), National Transportation Safety Board (NTSB) and U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) that since 1999 has sought to document in-service plastic piping system failures and/or leaks with the objective of identifying possible performance issues<sup>5</sup>.

In June 2016 we conducted an interview with the Director of Seattle's Department of Public Utilities. He provided us with insights into his knowledge of pipeline safety policies, procedures, communications and best practices.

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<sup>2</sup> United States Census Bureau, Seattle, Washington Quick Facts (2010-2015).

<sup>3</sup> According to PHMSA: "Cathodic Protection (CP) systems help prevent corrosion from occurring on the exterior of pipes, by substituting a new source of electrons, commonly referred to as either a "sacrificial anode" or "impressed current anode". Both systems operate by imparting a direct current onto the buried pipeline, using devices called rectifiers. As long as the current is sufficient, corrosion is prevented, or at least mitigated and held in check." See Fact Sheet: Cathodic Protection, last updated 12-01-2011 accessible at <https://primis.phmsa.dot.gov/comm/FactSheets/FSCathodicProtection.htm>

<sup>4</sup> PHMSA Form 7100.1-1, Puget Sound Energy 2015 Annual Report- Gas Distribution System, Submitted to PHMSA Office of Pipeline Safety on 3/15/2016.

<sup>5</sup> Plastic Pipe Database Committee, "Plastic Piping Data Collection Initiative Status Report, August 18, 2016." Administered by American Gas Association 400 North Capitol Street, N.W., 4th Floor Washington, DC 20001 U.S.A., [https://www.aga.org/sites/default/files/ppdc\\_august\\_2016\\_status\\_report.pdf](https://www.aga.org/sites/default/files/ppdc_august_2016_status_report.pdf)

Only three months prior to our speaking with the city, a March 9, 2016 gas pipeline explosion had destroyed three buildings, injured nine city firefighters and prompted the evacuation of an apartment building and three city blocks. Firefighters had been called to the scene around 1 a.m. to investigate the smell of gas. In September 2016, Washington State issued a final investigative report on the cause of the leak and subsequent explosion and found that the cause was the result of improperly abandoned gas service lines that were the responsibility of the gas pipeline company, Puget Sound Energy<sup>6</sup>. In addition to improper abandonment per federal law<sup>7</sup>, the investigation uncovered that Puget Sound Energy had also failed to perform annual leak surveys of the active service line mandated by state law and to perform federally mandated corrosion testing<sup>8</sup>.

### *I. City Leak Detection Policies and Procedures*

Seattle staff we spoke with were not aware of any leak detection policies, including mandated schedules, for conducting monitoring of leaks, that were the responsibility of the city. They conduct no leak surveys at the city-level. They told us that leak detection is handled by the private gas distribution companies and that any policies related to gas leaks are set by the Washington Utilities and Transportation Commission. With regard to leak surveys, definition of what constitutes a leak and how leaks are classified, the Seattle staff we spoke with told us that they understood those issues to be the responsibility of the private gas companies.

### *A. State Oversight, Regulations and Policies on Gas Distribution Leak Detection*

Washington State is certified by PHMSA under Section 60105(a)<sup>9</sup> and the policies set by the

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<sup>6</sup> Washington Utilities and Transportation Commission Investigative Report, Greenwood Natural Gas Pipeline Explosion March 9, 2016. Docket PG-160924, September 20, 2016. Accessible online at <https://www.pipelinelaw.com/wp-content/uploads/sites/19/2016/10/WUTC-Investigation-Report.pdf> (accessed on 12/16/15): "(WUTC) Staff finds that the leak and explosion would not have occurred but for PSE's improper abandonment of the service line in September 2004. Staff's investigation revealed that the service line had not been "cut and capped" as documented by PSE's contractor on Sept. 1, 2004. As a result of PSE's improper abandonment, the service line remained operationally active until it was shut off after the explosion."

<sup>7</sup> 49 C.F.R. § 192.727.

<sup>8</sup> WAC 480-93-188; 49 C.F.R. § 192 and 192.481.

Washington State Utilities and Transportation Commission (WUTC) on gas leak surveys and detection were enacted in 2008 as "WAC 480-93-18601, Leak classification and action criteria - Grade - Definition - Priority of leak."<sup>10</sup> This state-wide regulation laid out a unified leak classification system, including clear definitions of what constitutes a Grade 1, Grade 2, or Grade 3 leak, who should be notified about the leaks, and what actions are necessary to repair, replace, and reevaluate the leaks.

## *II. Sharing of Pipeline Information*

### *A. How does the city communicate and work with utility companies in the detection of leaks?*

The State's policies regarding gas leaks reference federal regulations under 40 CFR 192.615, that requires pipeline operators to establish written procedures to minimize hazards resulting from a gas pipeline emergency. This policy states that when a "Grade 1 leak" (a leak that represents an existing or probable hazard to persons or property) is detected prompt action must be taken by the gas pipeline company to activate its emergency plan pursuant to those federal regulations. One of the key provisions of that federal regulation on emergency plans is that gas pipeline companies establish and maintain adequate means of communication with appropriate fire, police, and other public officials and that the company is responsible for acquainting those officials with the operator's ability in responding to a gas pipeline emergency. From our interview with City of Seattle staff it appears that this communication does not occur between the City's engineers, other parts of the city, and gas utility companies.

The city staff told us that the primary mode of communication between the city and residents and private utility company about leaks is via a Hotline to the company and via calls to 911 about the smell of gas. They also told us that there is a state locate law for all underground excavation ("811") that the city and city contractors are required to call before any underground or digging work.

### *B. How does the city track the location and status of existing gas pipeline infrastructure?*

The City of Seattle does not independently track or provide state information to its residents. The staff told us that that is done at the state level and could also be tracked by labor and industry but they were not entirely sure.

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<sup>9</sup> 49-Transportation- USC Subtitle VIII: Pipelines- Section 60105(a) State Certification

<sup>10</sup> Available at <http://apps.leg.wa.gov/wac/default.aspx?cite=480-93-18601> (accessed on 12/16/15)

*C. Is there a city-wide mapping system?*

There is a State level geographic information center for underground utilities. The City GIS program provides maps to the public and others on underground water and sewer systems, as well as street grids, building permits, and 911 service calls. It does not map gas utility lines or service points<sup>11</sup>.

At the State level, there is a law that requires maps be provided from pipeline operators with interstate pipelines or gas pipelines operating over 250 psi gauge accurate enough to meet the needs of first responders, and as specified by the WUTC<sup>12</sup>. The State, via the WUTC is then responsible for consolidating these maps into a statewide GIS consistent with the PHMSA national pipeline mapping program. The WUTC assists local governments and excavator/contractor locator services in obtaining these location maps. There is no centralized mapping of service lines of low pressure distribution mains.

*D. Does the city have a system for notification of city employees, residents, businesses, emergency responders when there are known safety concerns in the gas pipeline infrastructure?*

The city staff we spoke with told us that the city does not have a notification system, but that notifications are handled by the private gas pipeline companies. They notify residents via hanging written notices on doors of residences affected.

*III. Hazardous release preparedness and leak response best practices*

In the case of the Greenwood incident in March 2016, when the residents smelled a gas leak odor they called 911 and the fire department was dispatched. After arriving on-scene and determining there was a potential gas leak the fire department contacted the utility.

According to state law, gas companies must conduct leak surveys on an annual basis in most populated areas, and when a private gas company detects a leak in its lines they should

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<sup>11</sup> <http://www.seattle.gov/util/MyServices/GIS/FrequentlyRequestedData/index.htm#infrastructure>

<sup>12</sup> Washington 60th Legislature 2007 Chapter 142 § 6, available at <http://lawfilesexternal.wa.gov/biennium/200708/Pdf/Bills/Session%20Laws/Senate/5225-S.SL.pdf?cite=2007%20c%20142%20%26> (accessed on 12/16/15)

follow the state's leak classification system to determine whether it is a Grade 1, Grade 2, or Grade 3 leak, and according to its classification repair and/or reevaluate the leak. In the case of a Grade 1 leak discovery this requires such actions as: evacuating the premises, blocking off an area, rerouting traffic, eliminating sources of ignition, venting the area, stopping the flow of gas by closing valves or other means, or notifying police and fire departments. With a Grade 2 leak discovery, the company must repair or replace lines causing Grade 2 leaks within fifteen months from the date the leak is reported, and reevaluated at least once every six months until it is repaired or replaced. If a Grade 3 leak is discovered the company must reevaluate that pipeline segment during the next scheduled survey, or within fifteen months of the reporting date, whichever occurs first, until the leak is regraded or no longer results in a reading.

*IV. What gaps in regulatory guidance exist with regard to setting leak detection policies and procedures at the city level?*

For Seattle, the main gaps were brought to light after the Greenwood explosion. The City now understands that they may have inaccurate information (if they have any at all) from pipeline companies, and are in a more general sense just unaware of the impacts of leaking or damaged gas pipelines. While the fire department responded appropriately to the 911 call in the recent incident, according to the WUTC investigative report, the city fire personnel were unaware or unable to locate any shut off valves for the gas going into the space where it was leaking, and it took an additional seven hours after the explosion for the gas company to shut off the gas service. The city had no awareness or knowledge of the last time the gas distribution and service lines in the neighborhood had been surveyed by the gas company or of any repairs or maintenance that may have taken place. While in this instance the records the State had on the maintenance of the line was false and no leak surveys had been conducted, it still seems troubling to city staff in retrospect that they were unaware of the status of the pipeline.

When asked what their three to five biggest concerns about gas pipeline safety in the city were, the staff responded:

1. Having a response strategy with the City's Office of Emergency Response and Preparedness that adequately addresses gas pipeline explosions.
2. Having accurate information that includes the size, location, age, and materials of the gas

pipelines in the city.

3. Lack of awareness and inaccurate information regarding the construction and damage impacts of gas pipelines in the city.

## 2. ATLANTA, GEORGIA

The City of Atlanta has an estimated population of 463,878 people in an estimated 185,820 households over an area of 133.15 square miles<sup>13</sup>. In 2015, the company owning the majority of gas distribution pipeline facilities in the city, Atlanta Gas Light Co., reported 31,867.4 miles of main lines and 1,621,943 service lines throughout their service area.

The majority of miles of mains were installed between 1980 and 2009 and consist of 64.7% miles plastic PE pipe and 35.3% miles steel pipe (all miles cathodically protected). The majority of services were also installed between 1980 and 2009. Across their system, Atlanta Gas Light reports 80.7% plastic PE services and 19.3% steel services (all cathodically protected services)<sup>14</sup>. Atlanta Gas Light submits annual reports to the Plastic Pipe Database, a voluntary data collection initiative of the American Gas Association (AGA), American Public Gas Association (APGA), Plastics Pipe Institute (PPI), National Association of Regulatory Utility Commissioners (NARUC), National Association of Pipeline Safety Representatives (NAPSR), National Transportation Safety Board (NTSB) and U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) that since 1999 has sought to document in-service plastic piping system failures and/or leaks with the objective of identifying possible performance issues<sup>15</sup>.

No face-to-face interviews with city staff or officials were granted to us. Information used in this case study was collected from primary sources-- state policies and investigations, legislative documents and laws, PHMSA data, State-commissioned studies, peer-reviewed scientific papers -- and secondary sources -- white papers, policy assessments or reviews and news interviews.

### *1. City Leak Detection Policies and Procedures*

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<sup>13</sup> United States Census Bureau, Atlanta, Georgia Quick Facts (2010-2015).

<sup>14</sup> PHMSA Form 7100.1-1, Atlanta Gas Light Co. 2015 Annual Report-Gas Distribution System Submitted PHMSA Office of Pipeline Safety on 5/31/2016.

<sup>15</sup> Plastic Pipe Database Committee, "Plastic Piping Data Collection Initiative Status Report, August 18, 2016." Administered by American Gas Association 400 North Capitol Street, N.W., 4th Floor Washington, DC 20001 U.S.A., [https://www.aga.org/sites/default/files/ppdc\\_august\\_2016\\_status\\_report.pdf](https://www.aga.org/sites/default/files/ppdc_august_2016_status_report.pdf)



We found no evidence that the city has its own pipeline safety inspectors or that leak detection surveys are conducted on a scheduled routine basis by the city. This does not mean that the city does not have its own inspectors nor that they do not do leak detection surveys, only that we did not find evidence of schedule of facilities inspections or any reports of state or city inspections or leak surveys.

#### *A. State Oversight, Regulations and Policies on Gas Distribution Leak Detection*

There are no uniform risk classification standards specific to the State of Georgia. As a state certified by PHMSA under Section 60105(a), the Georgia Public Service Commission's (GPSC) Pipeline Safety Division is responsible for enforcing minimum federal PHMSA safety regulations on gas pipelines related to the design, construction, testing, operation and maintenance of pipeline facilities and the siting, construction, operation and maintenance of liquefied natural gas facilities. GPSC conducts operator inspections a minimum of every five years for the gas systems. These inspections include operator qualifications, public awareness programs, system integrity management programs, drug and alcohol programs and accident investigations.<sup>16</sup> In July 2000, Georgia passed the Georgia Utility Facility Protection Act (GUFPA)<sup>17</sup> that provides for the protection of buried utility facility infrastructure within the State and establishes the Georgia 811, Call Before You Dig program. This program is administered by GPSC.

In 2010, the GPSC had eight full-time pipeline safety inspectors in its Pipeline Safety Group. These state inspectors conduct safety inspections of all natural gas systems operated throughout Georgia. During 2009 these inspectors monitored and inspected over 78,159 miles of distribution mains, service lines and transmission pipelines. Operator compliance with pipeline safety regulations was evaluated during 1,029 inspections over 1,560 days<sup>18</sup>.

## *II. Sharing of Pipeline Information*

<sup>16</sup> [http://www.psc.state.ga.us/facilitiesprotect/fp\\_pipesafe/fp\\_pipesafe.asp](http://www.psc.state.ga.us/facilitiesprotect/fp_pipesafe/fp_pipesafe.asp) (accessed 12/10/16) and <http://fp.psc.state.ga.us/2014%20Pipeline%20Safety%20Seminar/GPSC%20Comp%20Insp%20-%20Macon%20Seminar%20-%202014.pdf> (accessed 12/20/16)

<sup>17</sup> TITLE 25. FIRE PROTECTION AND SAFETY, CHAPTER 9. BLASTING OR EXCAVATING NEAR UTILITY FACILITIES, available at [http://www.psc.state.ga.us/facilitiesprotect/ga\\_code\\_25-9.pdf](http://www.psc.state.ga.us/facilitiesprotect/ga_code_25-9.pdf) (accessed 12/10/16)

<sup>18</sup> <http://www.psc.state.ga.us/newsinfo/releases/2010/20100920.pdf>

*A. How does the city communicate and work with utility companies in the detection of leaks?*

The Georgia Call Before You Dig program is the primary way that the city and utility companies communicate about prevention of leaks. The city and city contractors are required to call the locator service before any underground or digging work. It is unclear how the city of Atlanta communicates with utility companies on the detection of existing leaks, but there is a toll-free number set up by Atlanta Gas Light to report suspected leaks<sup>19</sup>.

*B. How does the city track the location and status of existing gas pipeline infrastructure?*

No tracking mechanism could be identified.

*C. Is there a city-wide mapping system?*

No city-wide mapping system that is readily available to the public was found.

*D. Does the city have a system for notification of city employees, residents, businesses, emergency responders when there are known safety concerns in the gas pipeline infrastructure?*

Could not identify a notification system used by the city with regard to safety concerns in the gas pipeline infrastructure.

*III. Hazardous release preparedness and leak response best practices*

Atlanta Gas Light directs all residents to call their toll-free emergency number to report gas leaks, and they also mail their customers pipeline safety tips. However, it is not clear from the City of Atlanta public websites who city residents are to call when they smell gas, although responding to gas leaks is listed in a 2011 audit of city fire services staffing as a "Special Operations" function of the Fire Department<sup>20</sup>.

*IV. What gaps in regulatory guidance exist with regard to setting leak detection policies and procedures at the city level?*

Since we were unable to directly speak with a City of Atlanta official or staff, we do not know

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<sup>19</sup> <https://www.atlantagaslight.com/safety>

<sup>20</sup> City Auditor's Office, City of Atlanta, "Atlanta Fire Rescue Staffing, October 2011," <http://citycouncil.atlantaga.gov/2011/images/adopted/1107/11C1493.pdf>

what the gaps and biggest concerns about gas pipeline safety are to the city. From this outside review it appears that the utility company takes the lead on most gas leak issues, followed by the state regulator, GPSC, on oversight and inspection of distribution line integrity management plans, and then the Atlanta Fire Department when a resident calls 911. The City Code Compliance office certainly has a role to play in new construction or building maintenance as well.

### 3. BOSTON, MASSACHUSETTS

The City of Boston has an estimated population of 667,137 people in an estimated 256,294 households over an area of 48.28 square miles<sup>21</sup>. In 2015, the company owning the majority of gas distribution pipeline facilities in the city, Boston Gas/National Grid, reported 6,349.34 miles of main lines and 596,734 service lines throughout their service areas.

The majority of miles of mains were installed prior to 1940 and consist of 35.9% miles plastic PE pipe, 34.3% miles steel pipe (1,180.62 miles unprotected and 996.29 miles cathodically protected), 29.7% miles cast/wrought iron pipe, 0.07% miles reconditioned cast iron pipe and .0001% miles cooper pipe. The majority of services were installed between 2000 and 2009 or have an unknown year of installation. Across their system, Boston Gas reports 53.7% plastic PE services, 27.5% steel services (106,945 unprotected units and 30,828 cathodically protected services), 16.7% "other" services, 1.8% cooper service and 0.29% cast/wrought iron services<sup>22</sup>. National Grid submits annual reports to the Plastic Pipe Database, a voluntary data collection initiative of the American Gas Association (AGA), American Public Gas Association (APGA), Plastics Pipe Institute (PPI), National Association of Regulatory Utility Commissioners (NARUC), National Association of Pipeline Safety Representatives (NAPSR), National Transportation Safety Board (NTSB) and U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) that since 1999 has sought to document in-service plastic piping system failures and/or leaks with the objective of identifying possible performance issues<sup>23</sup>.

No face-to-face interviews were granted. Information used in this case study was collected from primary sources-- DPU policies and investigations, legislative documents and laws, PHMSA data, State-commissioned studies, peer-reviewed scientific papers -- and secondary sources -- white papers, policy assessments or reviews, news interviews (print and video).

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<sup>21</sup> United States Census Bureau, Boston, Massachusetts Quick Facts (2010-2015).

<sup>22</sup> PHMSA Form 7100.1-1, Boston Gas Company d/b/a National Grid 2015 Annual Report- Gas Distribution System, Submitted PHMSA Office of Pipeline Safety 3/15/2016.

<sup>23</sup> Plastic Pipe Database Committee, "Plastic Piping Data Collection Initiative Status Report, August 18, 2016." Administered by American Gas Association 400 North Capitol Street, N.W., 4th Floor Washington, DC 20001 U.S.A., [https://www.aga.org/sites/default/files/ppdc\\_august\\_2016\\_status\\_report.pdf](https://www.aga.org/sites/default/files/ppdc_august_2016_status_report.pdf)

### *I. City Leak Detection Policies and Procedures*

We found no evidence that the city has its own pipeline safety inspectors or that leak detection surveys are conducted on a scheduled routine basis by the city after a comprehensive review of General Law Chapter 164: Manufacture and Sale of Gas and Electricity, and the websites of the City of Boston and DPU. This does not mean that the city does not have its own inspectors or that they do not do leak detection surveys, only that we did not find evidence of schedule of facilities inspections or any reports of state or city inspections or leak surveys.

However, over the past several years there have been independent leak detection surveys conducted by researchers and organizations concerned about increased methane gas emissions from pipeline leakage as a global climate change issue, as well as a public safety issue<sup>24</sup>. With regards to these independent assessments of methane leaks in Boston, of particular concern to the City appears to be confusion about where these detected leaks are located. In a March 30, 2015 interview that was reported in a local independent news outlet, Austin Blackmon, Boston's Chief of Environment and Energy, said, "The main issue is that it is not clear whether the reported leaks refer to leaks in the street or inside people's homes. We are most interested in the street leaks as the pipes are larger, so the leaks are greater, and they are likely to remain unfixed for longer. As we get clarity on the data, we will continue to coordinate with all relevant departments, including Public Works."<sup>25</sup>

#### *A. State Oversight, Regulations and Policies on Gas Distribution Leak Detection*

The Commonwealth of Massachusetts is a state certified by PHMSA under Section 60105(a). However, on June 11, 2013, Massachusetts' Secretary for Energy and Environmental Affairs, Rick Sullivan, noted that there was no consistent accounting or reporting methodology for lost and unaccounted for gas in the pipeline distribution system of the Commonwealth<sup>26</sup>

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<sup>24</sup> Phillips NG, R Ackley, ER Crosson, A Down, LR Hutyra, M Brondfield, JD Karr, K Zhao, RB Jackson. 2013. Mapping urban pipeline leaks: methane leaks across Boston. *Environmental Pollution* 173:1-4.

<sup>25</sup> MuckRock (Beryl Lipton), "Fire down below: Boston only municipality in Massachusetts to release gas leak data," March 30, 2015, available at <https://www.muckrock.com/news/archives/2015/mar/30/gasleaks-boston/>

<sup>26</sup> Sullivan, R. (2013, June 11). *Testimony before the Joint Committee on Telecommunications, Utilities, and Energy*. Statement at the Massachusetts State House, Boston, MA.

On June 26, 2014, the Governor of Massachusetts signed into law House Bill 4164, An Act Relative to Natural Gas Leaks ("Gas Leaks Act," amended Section 105A of Chapter 164 of the General Laws) that sought to remedy that lack of gas leak accounting and methodology. This amendment established a uniform natural gas leak classification system (Grade 1, 2, and 3), schedule for repairs and/or replacement of leaks, requirements for on-going surveillance and monitoring, and requirements regarding notification of local first responders (chiefs of fire and law enforcement). The Massachusetts Department of Public Utilities (DPU) is the state agency tasked with carrying out the monitoring and enforcement of the uniform natural gas leak classification system.

This law prioritized road work projects where there was a Grade 1 or Grade 2 leak for repair or replacement and noted that all shut off valves must be checked for gate box<sup>27</sup> placement or another reasonable alternative that would ensure continued public safety. It also prioritized all leaks occurring on or within 50 feet of a public or private accredited preschool, accredited Head Start facility, elementary, vocational or secondary school.

In addition to the gas leak classifications, the 2014 law instructs the Secretary of Public Safety and Security to issue a report on the adequacy of state regulations governing the safety standards for utility transformer vaults located within buildings subject to the state building code, the DPU to investigate whether winter surveillance and patrol of cast iron gas pipelines should be carried out and determine whether the presence of extended frost cap conditions may result in additional stress on cast iron pipe segments, and the DPU to issue a report on the prevalence of gas leaks that includes the total number of Grade 1, Grade 2 and Grade 3 leak, estimates of lost and unaccounted for natural gas and methane emissions as a result of such leaks and estimates the time and cost for eliminating the backlog of all leaks. Part of this reporting requirement was to be fulfilled by the gas distribution companies submittal of annual plans to repair or replace aged natural gas infrastructure (Gas System Enhancement Plans, or GESPs). As of April 30, 2014, seven gas distribution companies operating in Massachusetts, including Boston Gas Company (National Grid) that serves the City of Boston, had submitted their annual GESP and been issued approval from DPU. The GESPs utilize the Distribution Integrity Management Plans (DIMP)<sup>28</sup> to prioritize replacement

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<sup>27</sup> Sometimes referred to as a valve or curb box.

<sup>28</sup> 49 CFR Part 192

of aged pipelines reviewed and approved by federal safety regulators at PHMSA.

While there is no evidence that the city conducts its own leak detection surveys, according to the website of the Massachusetts Office of Energy and Environmental Affairs, the Pipeline Engineering and Safety Division of DPU employs eight engineers who inspect facilities and records of the operators of natural gas distribution companies, municipal gas departments and other intrastate systems throughout the Commonwealth's pipeline infrastructure on an annual basis. According to Annual Reports from 2014 and 2015<sup>29</sup> these engineer inspectors spent over 700 days each year conducting pipeline safety inspections. These inspectors are responsible for approximately 21,000 miles of gas mains, over 1,400,000 gas service points, 18 liquefied natural gas ("LNG") plants, and 8 propane-air plants<sup>30</sup>. This Division is also responsible for implementation of the Dig Safe Law (General Law Chapter 82, Section 40) as well as investigating and reporting on gas incidents. Meter inspectors in the division are also responsible for gas meter accuracy testing and timely replacement. According to Commonwealth law, meters must be replaced and inspected every seven years.

The uniform gas leak classification system put into Massachusetts law in 2014 implies that monitoring and inspection of leaks is carried out by the utility company or operator, and while leak reports from each utility are provided on an annual basis, the requirement for leak survey intervals is based on the classification of detected leaks. The 2014 annual reports<sup>31</sup> submitted to the Commonwealth of Massachusetts by Boston Gas Company/National Grid stated that approximately 46 percent of the distribution system mains were composed of leak-prone pipe (either not cathodically protected or made of cast iron/wrought iron or bare steel). The company also indicated that their plan for replacement of these leak-prone pipes includes replacing 113 miles of main in 2015, 150 miles of main per year by 2021, and increasing that amount to 170 miles of main per year by 2023.

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<sup>29</sup> <http://www.mass.gov/eea/grants-and-tech-assistance/guidance-technical-assistance/agencies-and-divisions/dpu/annual-reports.html> (accessed 12/5/16)

<sup>30</sup> Massachusetts Department of Public Utilities, <http://www.mass.gov/eea/grants-and-tech-assistance/guidance-technical-assistance/agencies-and-divisions/dpu/dpu-divisions/pipeline-safety-division/pipeline-division-responsibilities.html> (accessed on 12/01/16)

<sup>31</sup> Boston Gas Company d/b/a National Grid 2015 Annual Report Submitted to Massachusetts Department of Public Utilities (D.P.U. 15-SQ-05), submitted on February 27, 2015, available on-line from <http://web1.env.state.ma.us> (accessed 12/10/16)

## *II. Sharing of Pipeline Information*

### *A. How does the city communicate and work with utility companies in the detection of leaks?*

It appears from publicly available data and communications that the city relies mostly on the DPU to communicate with utility companies. And, the utility company in Boston, Boston Gas Company/National Grid, submits their annual leak reports (GESP) to the DPU that includes: (1) the location of each Grade 1, Grade 2, and Grade 3 leak; (2) the date each Grade 1, Grade 2, and Grade 3 leak was reported; and (3) the dates of repairs performed on each Grade 1, Grade 2, and Grade 3 leak. These annual reports are available publicly and the addresses of each leak detected are given. In fact, the 2014 Massachusetts Gas Leaks Act explicitly states that this data must be made available to municipalities. In addition to leak detection, a 2016 Special Commission report was issued to establish a better coordination mechanism between municipalities and gas utilities to coordinate road work and gas pipeline leak repairs and line replacements.

### *B. How does the city track the location and status of existing gas pipeline infrastructure?*

There is no indication from secondary or primary sources reviewed that the city tracks this independently of the Massachusetts DPU. The 2014 law does require that utilities provide maps of distribution infrastructure to cities, but cities have to know first to ask for these reports. An independent investigation conducted by government transparency organization MuckRock between 2015 and into 2016 found that the City of Boston's Environment Department was the only municipality to have taken advantage of the new right to access this data as of March 2015<sup>32</sup>. Such data could be used by cities to geocode locations on city maps to pinpoint leaks and even establish hot spot areas that Public Works, emergency first responders, and residents could monitor.

### *C. Is there a city-wide mapping system?*

No mapping system that is created by Boston's city government could be found on-line, or by reference in reviewed documents. The Massachusetts Geographic Information System (MassGIS) office has data layers available that show gas service provider areas of service, transmission lines, LNG plants, and other oil and gas infrastructure within the Boston city limits, but there is no readily available geographic information found on leak surveys or

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<sup>32</sup> MuckRock (Beryl Lipton), "Fire down below: Boston only municipality in Massachusetts to release gas leak data," March 30, 2015, available at <https://www.muckrock.com/news/archives/2015/mar/30/gasleaks-boston/>



detection of leaks in the city.

However, there are two private, non-governmental projects that are creating maps of gas leaks in the City of Boston. One is an Environmental Defense Fund and Google Earth Outreach nation-wide city gas leak mapping project<sup>33</sup> that uses independent leak detection equipment and research. The other is a Home Energy Efficiency Team (HEET) Massachusetts-wide municipality gas leak mapping project<sup>34</sup> that uses 2014 and 2015 annual reports submitted by gas companies to DPU.

*D. Does the city have a system for notification of city employees, residents, businesses, emergency responders when there are known safety concerns in the gas pipeline infrastructure?*

There is a Dig Safe Law in Massachusetts that requires the city and city contractors to call before any excavation in order to have a locator service mark the underground utilities. Also, in the 2014 Gas Leaks Act, gas companies are required to notify city or town fire departments and chief law enforcement officers when they detect a Grade 1 leak in their systems.

### *III. Hazardous release preparedness and leak response best practices*

On-line<sup>35</sup> PHMSA significant incident<sup>36</sup> records and Massachusetts DPU incident data indicate that between 2003 and 2013 there were two significant incidents within the City of Boston. One was caused by third party excavator damage and one by incorrect operation during

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<sup>33</sup> <https://www.edf.org/climate/methanemaps/city-snapshots/boston> (accessed 12/10/16)

<sup>34</sup> <http://www.heetma.org/squeaky-leak/natural-gas-leaks-maps/> (accessed 12/10/16)

<sup>35</sup> PHMSA Massachusetts Significant Incidents Listing at

[https://primis.phmsa.dot.gov/comm/reports/safety/IncDetSt\\_st\\_MAflt\\_sig.html](https://primis.phmsa.dot.gov/comm/reports/safety/IncDetSt_st_MAflt_sig.html) (accessed 12/01/16). MA DPU Incident Reports at <http://www.mass.gov/eea/grants-and-tech-assistance/guidance-technical-assistance/agencies-and-divisions/dpu/dpu-divisions/pipeline-safety-division/incident-reports/> (accessed 12/01/16).

<sup>36</sup> PHMSA defines "significant incident" as those including any of the following conditions: 1. Fatality or injury requiring in-patient hospitalization, 2. \$50,000 or more in total costs, measured in 1984 dollars, 3. Highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more, 4. Liquid releases resulting in an unintentional fire or explosion.

installation of a new service line by the gas utility contractor. In 2014, there was a third gas pipeline incident in the City of Boston in which 12 people were injured, two critically, and a duplex destroyed<sup>37</sup>. However, there was no incident report available on this explosion and fire.

According to incident reports from DPU, when leaks are discovered by the public they are called into 911 and the Fire Department or Police to respond. After arriving on-scene, if the fire department determines that there is in fact a gas leak the utility company is notified via phone. In November 2016 National Grid announced its launching of a "First Responder App" that allows the first responders to take geographically-tagged photos of the location and give the utility visual and more specific details prior to their responding to the scene<sup>38</sup>.

In addition, the 2014 Gas Leaks Act mandates that if a gas company detects a Grade 1 leak they must repair the leak immediately and monitor the line until the conditions are no longer hazardous. If a Grade 2 leak is detected, the company must monitor at least once every 6 months until the leak is eliminated, and the line should be repaired or replaced within 12 months from the date the leak was classified. And, finally, if a Grade 3 leak is detected the gas company must reevaluate the leak during the next scheduled survey, or within 12 months from the date last evaluated, whichever occurs first, until the leak is eliminated or the main is replaced. However, if a municipal or state public safety official reasonably believes that the leak poses a threat to public safety, they can request a reevaluation prior to the next scheduled company survey, or sooner than 12 months from the date the leak was last evaluated.

#### *IV. What gaps in regulatory guidance exist with regard to setting leak detection policies and procedures at the city level?*

There seems to be a poorly understood definition of what a "leak" is and no uniform standard for the measurement and calculation of leak grades. In 2013, Nathan Phillips at Boston University led a survey on all Boston city roads that found 3,356 gas leaks<sup>39</sup>. In contrast, the

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<sup>37</sup> <http://www.necn.com/news/new-england/Family-Suing-National-Grid-After-Boston-Home-Explosion-277825561.html>

<sup>38</sup> [https://www9.nationalgridus.com/aboutus/a3-1\\_news2.asp?document=10724](https://www9.nationalgridus.com/aboutus/a3-1_news2.asp?document=10724)

<sup>39</sup> Phillips NG, R Ackley, ER Crosson, A Down, LR Hutyra, M Brondfield, JD Karr, K Zhao, RB Jackson. 2013.

annual report filed by Boston Gas Company/National Grid with DPU is about half that number. There are also disparities in leak classification in Boston between utilities and independent researchers. This same DPU 2014 annual report cited a total of 36 Grade 1 leaks<sup>40</sup>—but independent leak surveys by Boston University identified 15 out of 100 leaks as Grade 1, suggesting that the National Grid's Grade 1 leak figure may be low. In addition, company GSEP's that set a timeline of necessary repairs and replacements need to be strictly adhered to once approved by the State. There is apparently resistance from National Grid, the primary gas distribution company in the City of Boston, regarding their responsibilities to pay for such maintenance. As of 2016, the utility has gotten approval from the State to pass along the costs to ratepayers. Clearly costs of replacement and repair in an aging pipeline system such as the one in Boston means that financial and safety incentives go hand-in-hand. Since we were unable to directly speak with a City of Boston official or staff, we do not know what the biggest concerns about gas pipeline safety are to the city.

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Mapping urban pipeline leaks: methane leaks across Boston. *Environmental Pollution* 173:1-4.

<sup>40</sup> Boston Gas Company d/b/a National Grid 2015 Annual Report Submitted to Massachusetts Department of Public Utilities (D.P.U. 15-SQ-05), submitted on February 27, 2015, available on-line from <http://web1.env.state.ma.us> (accessed 12/10/16)

#### 4. AUSTIN, TEXAS

The City of Austin has an estimated population of 931,830 people in an estimated 351,195 households over an area of 297.90 square miles<sup>41</sup>. In 2015, the company owning the majority of gas distribution pipeline facilities in the city, Texas Gas Service Company (a division of One Gas Inc.), reported 9,817.8 miles of main lines and 608,093 service lines throughout their service areas.

The majority of miles of mains were installed between 1970 and 1979 and between 2000 and 2009 and consist of 58% miles steel pipe (284.13 miles unprotected and 5,426.13 miles cathodically protected), 40.2% miles plastic PE pipe, 1.1% plastic PVC, and 0.52% miles cast/wrought iron pipe. The majority of services were also installed between 1970 and 1979 and between 2000 and 2009. Across their system, Texas Gas Service Company reports 50.3% steel services (106,945 unprotected units and 30,828 cathodically protected services), 49.2% plastic PE services, 0.2% plastic PVC services, and 0.2% plastic ABS services<sup>42</sup>. Texas Gas Service Company submits annual reports to the Plastic Pipe Database, a voluntary data collection initiative of the American Gas Association (AGA), American Public Gas Association (APGA), Plastics Pipe Institute (PPI), National Association of Regulatory Utility Commissioners (NARUC), National Association of Pipeline Safety Representatives (NAPSR), National Transportation Safety Board (NTSB) and U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) that since 1999 has sought to document in-service plastic piping system failures and/or leaks with the objective of identifying possible performance issues<sup>43</sup>.

No face-to-face interviews with city staff or officials were granted to us. Information used in this case study was collected from primary sources-- state policies and investigations, legislative documents and laws, PHMSA data, State-commissioned studies, peer-reviewed scientific papers -- and secondary sources -- white papers, policy assessments or reviews

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<sup>41</sup> United States Census Bureau, Austin, Texas Quick Facts (2010-2015).

<sup>42</sup> PHMSA Form 7100.1-1, Texas Gas Service Company, a Division of One Gas, Inc. 2015 Annual Report- Gas Distribution System, Submitted PHMSA Office of Pipeline Safety on 2/29/2016.

<sup>43</sup> Plastic Pipe Database Committee, "Plastic Piping Data Collection Initiative Status Report, August 18, 2016." Administered by American Gas Association 400 North Capitol Street, N.W., 4th Floor Washington, DC 20001 U.S.A., [https://www.aga.org/sites/default/files/ppdc\\_august\\_2016\\_status\\_report.pdf](https://www.aga.org/sites/default/files/ppdc_august_2016_status_report.pdf)

and news interviews.

### *I. City Leak Detection Policies and Procedures*

We found no evidence that the City of Austin has its own gas pipeline safety inspectors or that leak detection surveys are conducted on a scheduled routine basis by the city. This does not mean that the city does not have its own inspectors nor that they do not do leak detection surveys, only that we did not find evidence of a schedule of facilities inspections or any reports of city inspections or leak surveys. However, the city's water utility does maintain a fairly extensive and easily used water leakage database, which could perhaps also be used to also track gas leaks when and if the city were to implement such a program<sup>44</sup>.

While gas distribution system leaks do not seem to be tracked, through its Telecommunications and Regulatory Affairs office the City of Austin is actively involved in tracking the financial aspects of the gas utility company's operations, rate-related complaints, and the energy conservation values of gas usage in the city. The city maintains an Ordinance with Texas Gas Service that is a Franchise Agreement related to the distribution and sale of gas through the use of public streets, easements, and rights-of-way<sup>45</sup>.

### *A. State Oversight, Regulations and Policies on Gas Distribution Leak Detection*

As a state certified by PHMSA under Section 60105(a), the Railroad Commission of Texas has safety responsibility over natural gas and LP-gas distribution lines (more than 148,167 miles), hazardous liquid and natural gas transmission lines (more than 66,382 miles), and intrastate production and gathering lines leaving a lease lines (more than 175,928 miles) throughout Texas.

In 2008 the Railroad Commission of Texas adopted Section 8.206-8.208, relating to "Risk Based Leak Survey Program, Leak Grading and Repair, and Mandatory Removal and

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<sup>44</sup> <http://www.austintexas.gov/online-form/online-leak-report-form>

<sup>45</sup> ORDINANCE NO. 20061005-023, AN ORDINANCE GRANTING A FRANCHISE TO TEXAS GAS SERVICE, A DIVISION OF ONEOK, INC., RELATING TO THE DISTRIBUTION AND SALE OF GAS IN THE CITY THROUGH THE USE OF PUBLIC STREETS, EASEMENTS, AND RIGHTS-OF-WAY; AND REPEALING ORDINANCE NO. 86-0918-T <http://www.austintexas.gov/edims/document.cfm?id=98577>

Replacement Program."<sup>46</sup> The adopted rules require gas distribution companies operating in Texas to establish a risk-based schedule of increased leak inspections; standardize leak grading and repair time frames; and repair or remove and replace certain compression couplings due to leaks or serviceability. It does not set a uniformed grading system that the companies must follow, but it does explicitly state risk factors that must be accounted for in developing company-specific pipeline system leak survey plans.

With regard to frequency of surveys, the Texas Railroad Commission established the following schedule for gas distribution companies:

"(g) Operators electing to use a prescriptive leak survey program shall conduct leak surveys no less frequently than:

- (1) annually for all systems within a business district;
- (2) every five years for non-business district polyethylene systems or segments within a system;
- (3) every three years for all other non-business district cathodically protected steel systems or segments within a system; and
- (4) every two years for all other non-business district systems or segments within a system."<sup>47</sup>

These rules also require gas distribution companies to submit annual or semi-annual leak reports via an on-line reporting system and Form PS-95<sup>48</sup>. However, we were unable to locate these completed forms for Texas Gas Service Company, or any other distribution companies, on the Railroad Commission website. The only statistic on leaks from Texas Gas Service Company's distribution system we found was from a gas utility audit report of investor-owned unaccounted for gas from page 34 of the Texas Railroad Commission's 2014

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<sup>46</sup> TAC Title 16 Part 1 Chapter 8: PIPELINE SAFETY REGULATIONS

[http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac\\_view=4&ti=16&pt=1&ch=8](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=8)

<sup>47</sup> TAC Title 16 §8.206: Risk-Based Leak Survey Program,

[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1p\\_tac=&ti=16&pt=1&ch=8&rl=206](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1p_tac=&ti=16&pt=1&ch=8&rl=206)

<sup>48</sup> TAC Title 16 §8.210: Reports,

[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1p\\_tac=&ti=16&pt=1&ch=8&rl=210](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1p_tac=&ti=16&pt=1&ch=8&rl=210)

Distribution Annual Report<sup>49</sup>.

In 1999, Texas passed the Underground Facility Damage Prevention and Safety Act<sup>50</sup> that provides for the protection of buried utility infrastructure throughout the State. In 2007, the state legislature established specific procedures for the Underground Pipeline Damage Prevention program. This program and the notification center for pipeline damage prevention is administered by the Texas Railroad Commission<sup>51</sup>.

## *II. Sharing of Pipeline Information*

### *A. How does the city communicate and work with utility companies in the detection of leaks?*

Texas' pipeline damage prevention notification center is used by the city and utility companies to communicate in order to prevent leaks caused by third-party damage. The city and city contractors are required to call the notification center before any underground or digging work. It is unclear how the City of Austin communicates with utility companies on the detection of existing leaks, but there is a toll-free number set up by Texas Gas Service Company to report suspected leaks<sup>52</sup>.

### *B. How does the city track the location and status of existing gas pipeline infrastructure?*

No tracking mechanism could be identified.

### *C. Is there a city-wide mapping system?*

No city-wide mapping system that is readily available to the public was found.

### *D. Does the city have a system for notification of city employees, residents, businesses,*

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<sup>49</sup> Summarized in TABLE 2 - UNACCOUNTED-FOR GAS, INVESTOR-OWNED DISTRIBUTION SYSTEMS JULY 1, 2013 TO JUNE 30, 2014, page 18: Texas Gas Service Company- Austin- 2.88% of purchased gas unaccounted for - available at <http://www.rrc.state.tx.us/media/33151/gsd-table-2.pdf>

<sup>50</sup> TEXAS UTILITIES CODE, TITLE 5. PROVISIONS AFFECTING THE OPERATION OF UTILITY FACILITIES CHAPTER 251. UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY, available at <http://www.statutes.legis.state.tx.us/Docs/UT/htm/UT.251.htm> (accessed 12/10/16)

<sup>51</sup> TAC Title 16 § 18.1-12 Underground Pipeline Damage Prevention, available at [http://texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac\\_view=4&ti=16&pt=1&ch=18&rl=Y](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=16&pt=1&ch=18&rl=Y) (accessed 12/10/16)

<sup>52</sup> [https://www.texasgasservice.com/#!/safety-if\\_you\\_smell\\_natural\\_gas](https://www.texasgasservice.com/#!/safety-if_you_smell_natural_gas)

*emergency responders when there are known safety concerns in the gas pipeline infrastructure?*

Could not identify a notification system used by the city with regard to safety concerns in the gas pipeline infrastructure.

*III. Hazardous release preparedness and leak response best practices*

Texas Gas Company directs all residents to call their toll-free emergency number to report gas leaks, and they also mail their customers pipeline safety tips. However, it is not clear from the City of Austin public websites who city residents are to call when they smell gas, although response to a 911 call because of a gas leak would be done by the city fire department.

*IV. What gaps in regulatory guidance exist with regard to setting leak detection policies and procedures at the city level?*

Since we were unable to directly speak with a City of Austin official or staff, we do not know what the gaps and biggest concerns about gas pipeline safety are to the city. From this outside review it appears that the utility company takes the lead on most gas leak issues, followed by the state regulator on oversight and inspection of distribution line integrity management plans, and then the Austin Fire Department when a resident calls 911. The City Code Compliance office certainly has a role to play in new construction or building maintenance as well, although there was no evidence found of what authority they operate under or how that role is carried out with regards to gas utilities in the city.



## 5. LAFAYETTE, COLORADO

The City of Lafayette has an estimated population of 27,729 people in an estimated 10,729 households over an area of 9.46 square miles<sup>53</sup>. In 2015, the company owning the majority of gas distribution pipeline facilities in the city, Atmos Energy Corporation, reported 3,177.57 miles of main lines and 97,881 service lines throughout their service areas.

The majority of miles of mains were installed between 2000 and 2009 and consist of 50.8% miles plastic PE pipe, 40.3% miles steel pipe (58.58 miles unprotected and 1,220.7 miles cathodically protected), and 8.9% plastic PVC. The majority of services were installed between 1990 and 1999. Across their system, Atmos Energy Corporation reports 67% plastic PE services and 33% steel services (2,029 unprotected services and 30,237 cathodically protected services)<sup>54</sup>. Atmos Energy submits annual reports to the Plastic Pipe Database, a voluntary data collection initiative of the American Gas Association (AGA), American Public Gas Association (APGA), Plastics Pipe Institute (PPI), National Association of Regulatory Utility Commissioners (NARUC), National Association of Pipeline Safety Representatives (NAPSR), National Transportation Safety Board (NTSB) and U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) that since 1999 has sought to document in-service plastic piping system failures and/or leaks with the objective of identifying possible performance issues<sup>55</sup>.

No face-to-face interviews with city staff or officials were granted to us. Information used in this case study was collected from primary sources-- state policies and investigations, legislative documents and laws, PHMSA data, State-commissioned studies, peer-reviewed scientific papers -- and secondary sources -- white papers, policy assessments or reviews and news interviews.

### *I. City Leak Detection Policies and Procedures*

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<sup>53</sup> United States Census Bureau, Lafayette, Colorado Quick Facts (2010-2015).

<sup>54</sup> PHMSA Form 7100.1-1, Atmos Energy Corporation - Colorado/Kansas 2015 Annual Report- Gas Distribution System, Submitted PHMSA Office of Pipeline Safety on 3/14/2016.

<sup>55</sup> Plastic Pipe Database Committee, "Plastic Piping Data Collection Initiative Status Report, August 18, 2016." Administered by American Gas Association 400 North Capitol Street, N.W., 4th Floor Washington, DC 20001 U.S.A., [https://www.aga.org/sites/default/files/ppdc\\_august\\_2016\\_status\\_report.pdf](https://www.aga.org/sites/default/files/ppdc_august_2016_status_report.pdf)

We found no evidence that the city has its own pipeline safety inspectors or that leak detection surveys are conducted on a scheduled routine basis by the city. This does not mean that the city does not have its own inspectors nor that they do not do leak detection surveys, only that we did not find evidence of schedule of facilities inspections or any reports of state or city inspections or leak surveys. Unlike the other cities reviewed, Lafayette is also within an area of active oil and gas well development, so in addition to distribution pipelines there may also be gathering and transmission lines being constructed or already in operation within or just outside of city limits.

#### *A. State Oversight, Regulations and Policies on Gas Distribution Leak Detection*

As a state certified by PHMSA under Section 60105(a), the Colorado Public Utility Commission (CPUC) Gas Pipeline Safety Section inspects and monitors intrastate gas pipeline system operators throughout the state. At the end of 2012, this responsibility included approximately 54,000 miles of gas distribution lines, 3,200 miles of gas transmission lines and 1,000 miles of regulated gas gathering lines<sup>56</sup>.

The rules currently governing the operational safety, reporting, and other issues related to gas distribution pipelines in Colorado were codified in 2013<sup>57</sup>. There are no uniform leak grading classification requirements or state-specific schedule of surveys for gas distribution pipelines. In 2013 Colorado also modified its Excavation Requirements under Title 9, Article 1.5, Section 101-107 of the Industrial and Commercial Safety codes, which had established the Utility Notification Center of Colorado (UNCC and "811 Colorado").<sup>58</sup>

Active new gas development in the Niobrara Shale is also influencing Lafayette, and in a trip to the County (Boulder) where Lafayette is located and neighboring Weld County in October 2016, we were able to meet with staff from the Colorado Oil and Gas Conservation Commission and the Colorado of Public Health and the Environment to learn more about their

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<sup>56</sup> <https://www.colorado.gov/pacific/dora/aboutgaspipelines>

<sup>57</sup> 4 CCR 723-4.4900-4976 Gas Pipeline Safety Rules, available at <https://www.colorado.gov/pacific/dora/gasrules> (accessed 12/19/16)

<sup>58</sup> CRS Title 9 Article 1.5 § 101-107 Excavation Requirements, available at [http://tornado.state.co.us/gov\\_dir/leg\\_dir/olls/2013TitlePrintouts/CRS%20Title%2009%20\(2013\).pdf](http://tornado.state.co.us/gov_dir/leg_dir/olls/2013TitlePrintouts/CRS%20Title%2009%20(2013).pdf) (12/19/16)

improvements to odor and health complaints related to fugitive emissions from gas pipeline infrastructure at production facilities in Boulder County. While these complaints are filed and investigated at the State level, Boulder County and the City of Lafayette have also put in place specific ordinances and review processes for new oil and gas development projects that officials think may interfere with the health, safety, and future planning within residential areas<sup>59</sup>. For the past two years there has been a contentious debate between State and Local governments about which level of government should have authority to control new oil and gas projects (especially involving the use of horizontal drilling and hydraulic fracturing technologies) and who should monitor those projects<sup>60</sup>.

## *II. Sharing of Pipeline Information*

### *A. How does the city communicate and work with utility companies in the detection of leaks?*

The city and city contractors are required to call the UNCC "811" line before any underground or digging work. It is unclear how the City of Lafayette communicates with utility companies on the detection of existing leaks, but there is a toll-free number set up by Atmos Energy Corporation to report suspected leaks<sup>61</sup>.

### *B. How does the city track the location and status of existing gas pipeline infrastructure?*

No tracking mechanism could be identified.

### *C. Is there a city-wide mapping system?*

No city-wide mapping system that is readily available to the public was found.

### *D. Does the city have a system for notification of city employees, residents, businesses, emergency responders when there are known safety concerns in the gas pipeline*

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<sup>59</sup> Lafayette, Colorado Code of Ordinances, Chapter 26 Development and Zoning, Section 26-22.1-14. Oil and Gas Development available at

[https://www.municode.com/library/co/lafayette/codes/code\\_of\\_ordinances?nodeId=COOR\\_CH26DEZO\\_S2622.1OIGADE](https://www.municode.com/library/co/lafayette/codes/code_of_ordinances?nodeId=COOR_CH26DEZO_S2622.1OIGADE) (accessed 12/01/16)

<sup>60</sup> Colin C. Deihl, Jamal L. Knight, Alexander F. Logemann, and Ann E. Prouty. 2014. Tug of War Over Colorado's

Energy Future: State Preemption of Local Fracking Bans, *Environmental Law Reporter* 44:10524-10536;

<sup>61</sup> <https://www.atmosenergy.com/safety/natural-gas-safety>

*infrastructure?*

Could not identify a notification system used by the city with regard to safety concerns in the gas pipeline infrastructure.

*III. Hazardous release preparedness and response best practices*

Atmos Energy directs all residents to call their toll-free emergency number to report gas leaks. And, the City of Lafayette public website does inform city residents that the city's fire department is does respond to calls of potential gas leaks.

*IV. What gaps in regulatory guidance exist with regard to setting leak detection policies and procedures at the city level?*

Since we were unable to directly speak with a City of Lafayette official or staff, we do not know what the gaps and biggest concerns about gas pipeline safety are to the city. From this outside review it appears that the utility company takes the lead on most distribution gas leak issues, followed by the state regulator on annual oversight and inspection of distribution line integrity management plans and enforcement, and then the Lafayette Fire Department when a resident calls 911. The building codes office certainly has a role to play in new construction or building maintenance as it relates to service lines and meters as well, although there was no evidence found of what authority they operate under or how that role is carried out with regards to gas utilities in the city.

## City Distribution Pipeline Safety Needs Assessment & Recommendations

Based on the preceding case studies, this needs assessment at a minimum identifies risk management education and training needs specific to gas pipeline and infrastructure safety specific to local government officials and awareness programs about existing pipeline safety and prevention awareness programs such as “811” Call-Before-You-Dig or One-Call programs. However, we also include specific recommendations regarding information sharing between cities, utility/distribution pipeline companies and operators, state regulators and citizens.

**1. There is a need for local government officials, city staff and state regulators to learn about, encourage, and understand how to incorporate state-of-the-art independent leak detection research, such as that being conducted by EDF and Google on methane gas leaks in cities,<sup>62</sup> into pipeline safety integrity management plans and emergency response plans.** Such knowledge would encourage uniform measurement instrumentation and leak calculation standards to be used by utilities and independent inspectors or researchers. Uniform measurements could assist with integration and comparison of leak surveys across time, geography and inspectors. Such data, if mapped alongside distribution infrastructure and shared across sectors in a uniform manner would provide essential information for states and cities to communicate with utilities regarding repair and replacements in hot spots of leakage, in avoiding preventable accidents, and in preparing for potential accidents should they occur.

**2. Cities and states need to develop and maintain more PHMSA-certified pipeline safety inspectors and engineers who can conduct third party inspections of gas distribution systems.** Such training of experts could be part of local educational and job-training programs designed to employ local residents and improve employment opportunities for city residents.

3. One recommendation from the September 2015 Accufacts report was: "Intrastate gas pipeline safety regulation should be made readily accessible to the public via more

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<sup>62</sup> <https://www.edf.org/climate/methanemaps/city-snapshots>

transparency and clear, easy to use, websites that are not overwhelmed by volumes of reports and studies that can get in the way of understanding these important rules."

We confirmed with this case study research the Accufacts recommendation and concur that **websites and other tools related to gas distribution pipeline safety, leak surveys, information sharing and emergency response need to be simplified, informative, and transparent to all public users.** These on-line resources need to include clear visuals such as local pipeline system maps, clear and downloadable links to annual PHMSA Form 7100.1-1 (**Appendix 3**) and Form 7100.1 for each utility company operating within the city, clear and downloadable links to state and federal accident investigation reports, plain language explanation of federal, state and local pipeline safety laws as well as their implementing regulations, policies, and procedures that govern national, state, and local management of gas distribution systems. If a state or city has a gas leak classification system they should also clearly indicate the calendar or annual schedule of when inspections are due and requirements for utility companies to submit annual or semi-annual reports. All of this information should be front and center on city and state public safety websites.

Overall, the public needs access to the same reliable, validated and timely pipeline infrastructure information as cities have access to since such information will make everyone safer and better equip the public to understand the real safety risks related to gas distribution pipeline facilities. This can be done in ways that do not compromise the security of the distribution facilities or company proprietary data, but that enhance the overall awareness and knowledge of residents. Homeowners, local businesses, social service providers, community educators, real estate professionals, and anyone with a genuine interest in the safety, well-being, and security of local communities should have access to this information. It is in the pipeline operators, utility companies and city officials' best interests to educate and inform the public about risks in order to avoid confusion and distrust. Such transparency is a cornerstone of American ingenuity, democratic principles and public safety and security.

**4. There is an urgent need for cities to be more pro-active in working with gas utility companies on issues related to public safety and infrastructure repair and maintenance, and to play a much larger role in encouraging active participation by public officials, emergency agencies, local businesses, residents and social service**

**providers in education and communication related to pipeline safety.** There are federal pipeline safety regulations that require gas company emergency plans meet certain fundamental minimum requirements including that each operator establish communication with appropriate fire, police and public officials; learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency; acquaint the officials with the operator's ability in responding to a gas pipeline emergency; identify the types of gas pipeline emergencies of which the operator notifies the officials; and plan how the operator and officials can engage in mutual assistance to minimize hazards to life and property."<sup>63</sup> Since gas pipeline incidents are low probability, high consequence events, the motto should be "Prepare for the worst, hope for the best."

**In addition to city officials and emergency departments being aware, city residents must know what to do and who to call if they smell the rotten egg odor of mercaptan, where to find evacuation guidelines and to have a plan in case of an evacuation.** They should also know who to contact for disaster assistance, whether county, city, state, or private organizations such as the Red Cross. It was not clear from the majority of cities we looked at in this study whether there were clear protocols between utilities and cities about emergency plans. If such plans do exist they are not readily available, and the Seattle official we spoke with thought the responsibility was with the private utility companies or the state, not with the city. We were also unable to locate public communication plans on pipeline safety and education prior to, during, and after an incident.

5. Most states and cities seem to have done a fairly good job of developing utility damage prevention programs. However, the majority of cities we looked at in this study did not have direct access to distribution pipeline data. **It is an on-going need that utility damage prevention programs and excavator locator services continue to get funding from federal sources and from state legislatures and are seen not only as a loss prevention mandate but as an essential program for bridging pipeline safety communication and providing pipeline safety education among cities, utilities, residents, and local businesses.**

**6. Cities need to work directly with gas utility companies to develop both secured**

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<sup>63</sup> 49 CFR§192.615 Emergency plans.

**access and publicly accessible (to a scale appropriate) geographic information systems that provide the location of distribution pipelines and problem areas (known leaks and/or problematic material types) within city jurisdiction.** We recommend that a system similar to PHMSA's Pipeline Integrity Management Mapping Application (PIMMA), used for mapping transmission pipelines, LNG plants and break-out tanks, be developed on a city-by-city or county basis<sup>64</sup>. This would go a long way towards improving communications, emergency preparedness, transparency and trust. For example, gas distribution company annual reports submitted to Massachusetts' DPU contain each company's detection of a leak by address. Those leak addresses could be used to geo-code leaks across the city and create a map.

**7. There needs to be put in place a process of review and approval by municipalities of a gas distribution company's pipeline integrity management plan (“DIMP”).** In many cases this will mean that the states must include local government in the review and approval process, but in our review we could not verify in all cases whether that municipal government review and approval was already occurring. Related to this, we support the recommendation by Accufacts, Inc. to include post-leak elimination/repair information (Form 7100.1-1, **Appendix 3**) that is statutorily required to be submitted to PHMSA by gas distribution pipeline operators as a report on meeting their annual performance measures as laid out in their company's Integrity Management (IM) programs, needs to be available from state websites and sent to city departments such as emergency services, planning, and public works, and placed on city websites in order for city residents to better understand if leaks are being reasonably addressed. These company reports from 2014-2016 are available for the states and cities that were covered in this report, but these reports should be directly available from city and state websites instead of buried in PHMSA's website.

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<sup>64</sup> 49 CFR§191.29 National Pipeline Mapping System.





## APPENDIX 1

### MCPS 2016 CITIES TAG INTERVIEW GUIDE

*REMEMBER this is an opportunity to build relationships with city administrators and mayors' staff through giving them a chance to tell us what they have experienced and would like to see with regards to improving pipeline safety in their cities.*

(Make sure you get everyone speaking to complete the CONSENT/RELEASE FORM. You may want to send this form along with the one-page brief to them before you meet so that they can have any questions ready before the interview.)

#### **INTRODUCTORY SCRIPT**

(For the interviewer to use in introducing project- does not need to be read verbatim, but should cover all the points when you first sit down to start the interview.)

“Thank you for taking time out of your busy schedule(s) to meet with me/us. The Mayors Council on Pipeline Safety (MCPS) has been funded by the Pipeline Hazardous Materials Safety Administration Technical Assistance Grant to engage industry, local officials, government and non-government entities to collaboratively move Gas Pipeline Safety Initiatives of the MCPS forward by identifying key cities to participate in a case study of city officials’ knowledge base in order to produce subjective needs assessments benchmarks, identify risk management education and training needs specific to gas pipeline and infrastructure safety specific to local government officials, implement data to educate city officials and obtain proactive membership in MCPS and MCPS initiative outcomes. (The following will also be on a one-page brief that should be given to everyone interviewed.) We will be meeting with city offi-

cials like yourself throughout the summer to understand your unique insights and knowledge about gas pipeline infrastructure safety programs in cities around the country.

A cornerstone of this TAG study is to speak directly with city officials to determine their information, experience, and perspectives regarding these 5 Safety Initiatives:

1. Local, state and national pipeline leak detection policies and regulations such as what qualifies as a leak, how leaks are classified, and what is done about discovered leaks
2. The need for national regulatory standards for leak detection class, leak detection monitoring by non-utility organizations, frequency of leak surveys, use of plastic v. steel in replacement of aging systems and in new systems.
3. Development of a model Urban Pipeline Initiative in which utilities and cities share pipeline mapping information
4. Prescriptive response best practices specific to urban communities
5. Prescriptive use of automatic shut off valves

The information we collect from city officials will be used to:

1. Develop a national campaign, spearheaded by the Mayors' Council on Pipeline Safety that advocates for more consistent and prescriptive distribution line safety regulations
2. Identify municipal needs and benchmarks based on pre- and post- study data
3. Identify risk management education and training needs specific to gas pipeline and infrastructure safety specific to local government officials, including increased awareness of "811"
4. Use outcomes of study to educate city officials, encourage and obtain proactive membership in a Mayors' Council on Pipeline Safety, and develop and implement a strategic social media plan and campaign that addresses city officials' pipeline safety experiences, needs, and goals.

You should view this conversational interview as an opportunity to explore your assets and needs/gaps with regards to pipeline safety. You should also use it to share your experiences and perspectives about current pipeline safety arrangements in your city, state, region or even nationally. You have the opportunity to either remain on or off record by selecting a box on the consent form.”

## **QUESTIONS**

1. Could you describe your city's gas pipeline leak detection policies and procedures, or any state or national regulations, that you look to in developing those policies?

PROBES (use as line of questioning if the interviewee does not address in response or has trouble responding):

1. How often does the city conduct leak detection surveys?
  2. What qualifies as a leak?
  3. How are leaks classified?
  4. What is done when leaks are discovered?
  5. What gaps in regulatory guidance could be helpful in setting leak detection policies and procedures at the city/municipal level?
2. How does the city communicate and work with utility companies in the detection of leaks?
  3. How does the city track the location and status of existing gas pipeline infrastructure?

PROBES:

1. Is there a city-wide mapping system?
2. If there is a mapping system is it public information or Proprietary/Confidential Information?

3. Does the city have a system for notification of city employees, residents, businesses, emergency responders when there are known safety concerns in the gas pipeline infrastructure?
  
4. What are your top 3-5 biggest concerns about gas pipeline safety or other underground infrastructure, i.e., "What keeps you up at night?" PROBES:
  1. How would you characterize your city's ability to respond to a gas pipeline disaster?
  
5. Can you think of any organizations, groups, or individuals in your city or at the neighborhood level who are most concerned about and who have advocated for greater pipeline safety/integrity programs? PROBES:
  1. Would you share their names and contact information with MCPS so we can follow up with them?

## APPENDIX 2

### MAYORS' COUNCIL ON PIPELINE SAFETY 2016 GAS PIPELINE SAFETY INITIATIVES

1. Could you describe your city's gas pipeline leak detection policies and procedures, or any state or national regulations, that you look to in developing those policies? How often does the city conduct leak detection surveys? What qualifies as a leak? How are leaks classified? What is done when leaks are discovered? What gaps in regulatory guidance could be helpful in setting leak detection policies and procedures at the city/municipal level?
2. How does the city communicate and work with utility companies in the detection of leaks?
3. How does the city track the location and status of existing gas pipeline infrastructure? Is there a city-wide mapping system? If there is a mapping system is it public information or Proprietary/Confidential Information? Does the city have a system for notification of city employees, residents, businesses, emergency responders when there are known safety concerns in the gas pipeline infrastructure?
4. What are your top 3-5 biggest concerns about gas pipeline safety or other underground infrastructure, i.e., "What keeps you up at night?" How would you characterize your city's ability to respond to a gas pipeline disaster?

5. Can you think of any organizations, groups, or individuals in your city or at the neighborhood level who are most concerned about and who have advocated for greater pipeline safety/integrity programs? Would you share their names and contact information with MCPS so we can follow up with them?

## **APPENDIX 3**





2.MILES OF MAINS IN SYSTEM AT END OF YEAR											
MATERIAL	UNKNOWN	2" OR LESS	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8" THRU 12"	OVER 12"	SYSTEM TOTALS				
STEEL	0	2858.3	554.1	542.4	94.8	69.18	4118.78				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	0	0	0	0	0	0				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	0	0	0	0	0	0				
PLASTIC PE	0	6886.1	1061.6	529.6	0	0	8477.3				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	9744.4	1615.7	1072	94.8	69.18	12596.08				
Describe Other Material:											
3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR											
					AVERAGE SERVICE LENGTH: 85						
MATERIAL	UNKNOWN	1" OR LESS	OVER 1" THRU 2"	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8"	SYSTEM TOTALS				
STEEL	0	108886	16966	342	46	4	126244				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	0	0	0	0	0	0				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	0	0	0	0	0	0				
PLASTIC PE	0	532265	128858	1869	36	0	663028				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	641151	145824	2211	82	4	789272				
Describe Other Material:											
4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION											
	UNKNOWN	PRE-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	TOTAL

<b>MILES OF MAIN</b>	0	0	0	218	1999	1513	1742	3780	2752	592	12596
<b>NUMBER OF SERVICES</b>	0	0	0	0	93225	70285	114600	245461	208929	56772	789272

**PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR**

CAUSE OF LEAK	MAINS		SERVICES	
	TOTAL	HAZARDOUS	TOTAL	HAZARDOUS
CORROSION FAILURE	47	5	38	23
NATURAL FORCE DAMAGE	3	3	25	24
EXCAVATION DAMAGE	101	98	798	794
OTHER OUTSIDE FORCE DAMAGE	3	3	43	43
PIPE, WELD OR JOINT FAILURE	90	44	58	31
EQUIPMENT FAILURE	109	7	120	16
INCORRECT OPERATIONS	8	4	20	7
OTHER CAUSE	33	4	54	32

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 65

**PART D - EXCAVATION DAMAGE**

**PART E-EXCESS FLOW VALUE(EFV) DATA**

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 980

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 15089

- a. One-Call Notification Practices Not Sufficient: 336
- b. Locating Practices Not Sufficient: 261
- c. Excavation Practices Not Sufficient: 333
- d. Other: 50

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 116393

2. NUMBER OF EXCAVATION TICKETS : 169879

**PART F - LEAKS ON FEDERAL LAND**

**PART G-PERCENT OF UNACCOUNTED FOR GAS**

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 0.1%

**PART H - ADDITIONAL INFORMATION**

**PART I - PREPARER**

Darryl Hong, operator (Preparer's Name and Title)	(425) 462-3911 (Area Code and Telephone Number)
darryl.hong@pse.com (Preparer's email address)	(425) 462-3770 (Area Code and Facsimile Number)

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629  
EXPIRATION DATE: 5/31/2018



U.S Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/15/2016

Form Type:

SUPPLEMENTAL

Date Submitted:

05/31/2016

### ANNUAL REPORT FOR CALENDAR YEAR 2015 GAS DISTRIBUTION SYSTEM

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0629. Public reporting for this collection of information is estimated to be approximately 16 hours per response, including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.

**Important:** Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

#### PART A - OPERATOR INFORMATION

(DOT use only)

20165868-29115

1. Name of Operator	ATLANTA GAS LIGHT CO
2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED)	
2a. Street Address	10 Peachtree Place, NE
2b. City and County	ATLANTA Fulton
2c. State	GA
2d. Zip Code	30309
3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER	792
4. HEADQUARTERS NAME & ADDRESS	
4a. Street Address	10 PEACHTREE PLACE NE
4b. City and County	ATLANTA
4c. State	GA
4d. Zip Code	30309
5. STATE IN WHICH SYSTEM OPERATES	GA
6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.)	
Natural Gas	
7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.):	
Privately Owned	

#### PART B - SYSTEM DESCRIPTION

##### 1.GENERAL

	STEEL				PLASTIC	CAST/ WROUGHT IRON	DUCTILE IRON	COPPER	OTHER	RECONDITION ED CAST IRON	SYSTEM TOTAL
	UNPROTECTED		CATHODICALLY PROTECTED								
	BARE	COATED	BARE	COATED							
MILES OF MAIN	0	0	0	11240.6	20626.8	0	0	0	0		31867.4
NO. OF SERVICES	0	0	0	313721	1308212	0	0	10	0		1621943

2.MILES OF MAINS IN SYSTEM AT END OF YEAR											
MATERIAL	UNKNOWN	2" OR LESS	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8" THRU 12"	OVER 12"	SYSTEM TOTALS				
STEEL	0	5869.9	2613.4	2359.5	363.5	34.3	11240.6				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	0	0	0	0	0	0				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	0	0	0	0	0	0				
PLASTIC PE	0	16488.8	3749.1	384.9	4.0	0	20626.8				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	22358.7	6362.5	2744.4	367.5	34.3	31867.4				
Describe Other Material:											
3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR					AVERAGE SERVICE LENGTH: 104						
MATERIAL	UNKNOWN	1" OR LESS	OVER 1" THRU 2"	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8"	SYSTEM TOTALS				
STEEL	0	286373	26333	908	104	3	313721				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	10	0	0	0	0	10				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	0	0	0	0	0	0				
PLASTIC PE	0	1236415	71200	567	30	0	1308212				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	1522798	97533	1475	134	3	1621943				
Describe Other Material:											
4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION											
	UNKNOWN	PRE-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	TOTAL

<b>MILES OF MAIN</b>	758.1	0.1	0.3	981.7	4580.6	3701.3	6409.1	6998.1	6438.2	1999.9	31867.4
<b>NUMBER OF SERVICES</b>	39936	0	0	58043	243319	187099	329123	358482	312803	93138	1621943

**PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR**

CAUSE OF LEAK	MAINS		SERVICES	
	TOTAL	HAZARDOUS	TOTAL	HAZARDOUS
CORROSION FAILURE	104	12	321	131
NATURAL FORCE DAMAGE	67	38	543	240
EXCAVATION DAMAGE	493	487	2339	2275
OTHER OUTSIDE FORCE DAMAGE	18	14	383	315
PIPE, WELD OR JOINT FAILURE	99	42	561	148
EQUIPMENT FAILURE	327	127	11215	2069
INCORRECT OPERATIONS	71	29	263	138
OTHER CAUSE	19	10	104	45

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 327

**PART D - EXCAVATION DAMAGE**

**PART E-EXCESS FLOW VALUE(EFV) DATA**

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 2841

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 25061

- a. One-Call Notification Practices Not Sufficient: 723
- b. Locating Practices Not Sufficient: 772
- c. Excavation Practices Not Sufficient: 1266
- d. Other: 80

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 399916

2. NUMBER OF EXCAVATION TICKETS : 797085

**PART F - LEAKS ON FEDERAL LAND**

**PART G-PERCENT OF UNACCOUNTED FOR GAS**

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 19

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.71%

**PART H - ADDITIONAL INFORMATION**

**PART I - PREPARER**

Ralph McCollum, Sr Compliance Engineer (Preparer's Name and Title)	(404) 584-3733 _____ (Area Code and Telephone Number)
rmccollu@aglresources.com (Preparer's email address)	(404) 584-4710 _____ (Area Code and Facsimile Number)



NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629  
EXPIRATION DATE: 5/31/2018



U.S Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/15/2016

Form Type:

SUPPLEMENTAL

Date Submitted:

03/15/2016

### ANNUAL REPORT FOR CALENDAR YEAR 2015 GAS DISTRIBUTION SYSTEM

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**Important:** Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at <http://www.phmsa.dot.gov/pipeline/library/forms>.

#### PART A - OPERATOR INFORMATION

(DOT use only)

20165820-28627

1. Name of Operator	BOSTON GAS CO
2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED)	
2a. Street Address	175 E OLD COUNTRY RD Main Office Bldg, 1st FL, South Wing
2b. City and County	HICKSVILLE
2c. State	NY
2d. Zip Code	11801
3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER	1640
4. HEADQUARTERS NAME & ADDRESS	
4a. Street Address	40 SYLVAN ROAD
4b. City and County	WALTHAM
4c. State	MA
4d. Zip Code	02451
5. STATE IN WHICH SYSTEM OPERATES	MA
6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.)	
Natural Gas	
7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.):	
Privately Owned	

#### PART B - SYSTEM DESCRIPTION

##### 1.GENERAL

	STEEL				PLASTIC	CAST/ WROUGHT IRON	DUCTILE IRON	COPPER	OTHER	RECONDITION ED CAST IRON	SYSTEM TOTAL
	UNPROTECTED		CATHODICALLY PROTECTED								
	BARE	COATED	BARE	COATED							
MILES OF MAIN	722.692	457.924	127.531	868.762	2279.116	1888.351	0.000	0.060	0.000	4.908	6349.344
NO. OF SERVICES	85337	21608	0	30828	268606	1460	0	8969	83606	0	500414

2.MILES OF MAINS IN SYSTEM AT END OF YEAR											
MATERIAL	UNKNOWN	2" OR LESS	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8" THRU 12"	OVER 12"	SYSTEM TOTALS				
STEEL	0.000	727.608	641.907	561.939	169.610	75.845	2176.909				
DUCTILE IRON	0.000	0.000	0.000	0.000	0.000	0.000	0				
COPPER	0.000	0.060	0.000	0.000	0.000	0.000	.06				
CAST/WROUGHT IRON	0.000	15.764	681.682	863.905	221.795	105.205	1888.351				
PLASTIC PVC	0.000	0.000	0.000	0.000	0.000	0.000	0				
PLASTIC PE	0.000	630.559	569.189	1047.819	31.548	.001	2279.116				
PLASTIC ABS	0.000	0.000	0.000	0.000	0.000	0.000	0				
PLASTIC OTHER	0.000	0.000	0.000	0.000	0.000	0.000	0				
OTHER	0.000	0.000	0.000	0.000	0.000	0.000	0				
RECONDITIONED CAST IRON	0.000	0.000	0.027	0.266	2.056	2.559	4.908				
TOTAL	0	1373.991	1892.805	2473.929	425.009	183.61	6349.344				
Describe Other Material:											
3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR											
					AVERAGE SERVICE LENGTH: 46.27						
MATERIAL	UNKNOWN	1" OR LESS	OVER 1" THRU 2"	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8"	SYSTEM TOTALS				
STEEL	1429	27022	105394	3443	445	40	137773				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	6	8156	804	2	1	0	8969				
CAST/WROUGHT IRON	0	313	1068	73	6	0	1460				
PLASTIC PVC	0	0	0	0	0	0	0				
PLASTIC PE	116	158522	104339	4814	801	14	268606				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	79902	650	2923	120	11	0	83606				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	81453	194663	214528	8452	1264	54	500414				
Describe Other Material:		Material of service is unknown									
4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION											
	UNKNOWN	PRE-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	TOTAL

<b>MILES OF MAIN</b>	0.000	2192.13 1	176.061	460.408	842.228	341.420	224.242	597.715	851.842	663.297	6349.344
<b>NUMBER OF SERVICES</b>	82025	78522	10868	16114	33933	33128	36456	65391	82745	61232	500414

**PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR**

CAUSE OF LEAK	MAINS		SERVICES	
	TOTAL	HAZARDOUS	TOTAL	HAZARDOUS
CORROSION FAILURE	876	376	1284	828
NATURAL FORCE DAMAGE	542	443	161	114
EXCAVATION DAMAGE	72	67	378	373
OTHER OUTSIDE FORCE DAMAGE	0	0	16	13
PIPE, WELD OR JOINT FAILURE	27	18	30	22
EQUIPMENT FAILURE	351	174	592	452
INCORRECT OPERATIONS	0	0	1	1
OTHER CAUSE	3620	1844	124	80

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 226

**PART D - EXCAVATION DAMAGE**

**PART E-EXCESS FLOW VALUE(EFV) DATA**

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 341

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 4553

- a. One-Call Notification Practices Not Sufficient: 82
- b. Locating Practices Not Sufficient: 15
- c. Excavation Practices Not Sufficient: 155
- d. Other: 89

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 83571

2. NUMBER OF EXCAVATION TICKETS : 120276

**PART F - LEAKS ON FEDERAL LAND**

**PART G-PERCENT OF UNACCOUNTED FOR GAS**

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 2.9%

**PART H - ADDITIONAL INFORMATION**

Service leak repairs (Total and Hazardous) include 2 Hazardous above ground leak repairs (2 Equipment).

**PART I - PREPARER**

Saadat Khan, Engineer Manager (Preparer's Name and Title)	(516)545-4369 _____ (Area Code and Telephone Number)
saadat.khan@nationalgrid.com (Preparer's email address)	_____ (Area Code and Facsimile Number)

NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629  
EXPIRATION DATE: 5/31/2018



U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

02/29/2016

Form Type:

INITIAL

Date Submitted:

**ANNUAL REPORT FOR  
CALENDAR YEAR 2015  
GAS DISTRIBUTION SYSTEM**

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**PART A - OPERATOR INFORMATION**

(DOT use only)

20165121-27525

1. Name of Operator	TEXAS GAS SERVICE COMPANY, A DIVISION OF ONE GAS, INC.
2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED)	
2a. Street Address	401 N HARVEY AVE
2b. City and County	OKLAHOMA CITY
2c. State	OK
2d. Zip Code	73102
3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER	18532
4. HEADQUARTERS NAME & ADDRESS	
4a. Street Address	1301 MOPAC EXPRESSWAY
4b. City and County	AUSTIN
4c. State	TX
4d. Zip Code	78746
5. STATE IN WHICH SYSTEM OPERATES	TX
6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.)	
Natural Gas	
7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.):	
Investor Owned	

**PART B - SYSTEM DESCRIPTION**

**1.GENERAL**

	STEEL				PLASTIC	CAST/ WROUGHT IRON	DUCTILE IRON	COPPER	OTHER	RECONDITION ED CAST IRON	SYSTEM TOTAL
	UNPROTECTED		CATHODICALLY PROTECTED								
	BARE	COATED	BARE	COATED							
MILES OF MAIN	203.11	81.02	240.84	5185.39	4056.43	51.01	0	0	0	0	9817.8
NO. OF SERVICES	10050	351	6809	288800	301582	0	0	501	0	0	608093

2.MILES OF MAINS IN SYSTEM AT END OF YEAR											
MATERIAL	UNKNOWN	2" OR LESS	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8" THRU 12"	OVER 12"	SYSTEM TOTALS				
STEEL	0	3494.32	1440.64	579.15	163.13	30.29	5707.53				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	0	0	0	0	0	0				
CAST/WROUGHT IRON	0	2.62	34.44	13.95	0	0	51.01				
PLASTIC PVC	0	84.83	22.00	0	0	0	106.83				
PLASTIC PE	0	2928.23	719.70	303.43	0.07	0	3951.43				
PLASTIC ABS	0	1	0	0	0	0	1				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	6511	2216.78	896.53	163.2	30.29	9817.8				
Describe Other Material:											
3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR											
					AVERAGE SERVICE LENGTH: 48						
MATERIAL	UNKNOWN	1" OR LESS	OVER 1" THRU 2"	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8"	SYSTEM TOTALS				
STEEL	0	242028	63266	690	26	0	306010				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	500	1	0	0	0	501				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	1226	0	0	0	0	1226				
PLASTIC PE	0	284050	14938	338	22	0	299348				
PLASTIC ABS	0	980	28	0	0	0	1008				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	528784	78233	1028	48	0	608093				
Describe Other Material:											
4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION											
	UNKNOWN	PRE-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	TOTAL

<b>MILES OF MAIN</b>	559.50	377.57	690.53	1181.20	1104.45	1442.19	1160.37	1071.35	1398.18	832.46	9817.8
<b>NUMBER OF SERVICES</b>	28602	11914	38249	68647	64148	92666	70539	67504	90448	75376	608093

**PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR**

CAUSE OF LEAK	MAINS		SERVICES	
	TOTAL	HAZARDOUS	TOTAL	HAZARDOUS
CORROSION FAILURE	364	158	1048	427
NATURAL FORCE DAMAGE	99	6	84	60
EXCAVATION DAMAGE	132	128	618	609
OTHER OUTSIDE FORCE DAMAGE	26	24	364	316
PIPE, WELD OR JOINT FAILURE	85	28	115	43
EQUIPMENT FAILURE	232	73	1752	419
INCORRECT OPERATIONS	59	42	259	211
OTHER CAUSE	63	18	273	31

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 2421

**PART D - EXCAVATION DAMAGE**

**PART E-EXCESS FLOW VALUE(EFV) DATA**

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 813

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 9872

- a. One-Call Notification Practices Not Sufficient: 215
- b. Locating Practices Not Sufficient: 102
- c. Excavation Practices Not Sufficient: 223
- d. Other: 273

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 138996

2. NUMBER OF EXCAVATION TICKETS : 207050

**PART F - LEAKS ON FEDERAL LAND**

**PART G-PERCENT OF UNACCOUNTED FOR GAS**

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 35

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.77%

**PART H - ADDITIONAL INFORMATION**

**PART I - PREPARER**

Stephanie Lenex, Tech Analyst (Preparer's Name and Title)	(405)551-6762 _____ (Area Code and Telephone Number)
Stephanie.Lenex@onegas.com (Preparer's email address)	_____ (Area Code and Facsimile Number)



NOTICE: This report is required by 49 CFR Part 191. Failure to report can result in a civil penalty not to exceed 100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.

OMB NO: 2137-0629  
EXPIRATION DATE: 5/31/2018



U.S Department of Transportation  
Pipeline and Hazardous Materials Safety Administration

Initial Date Submitted:

03/14/2016

Form Type:

SUPPLEMENTAL

Date Submitted:

03/14/2016

### ANNUAL REPORT FOR CALENDAR YEAR 2015 GAS DISTRIBUTION SYSTEM

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#### PART A - OPERATOR INFORMATION

(DOT use only)

20165670-28483

1. Name of Operator	ATMOS ENERGY CORPORATION - COLORADO/KANSAS
2. LOCATION OF OFFICE (WHERE ADDITIONAL INFORMATION MAY BE OBTAINED)	
2a. Street Address	Atmos Energy Corporation 1200 11th Avenue
2b. City and County	Greeley Weld
2c. State	CO
2d. Zip Code	80631
3. OPERATOR'S 5 DIGIT IDENTIFICATION NUMBER	6720
4. HEADQUARTERS NAME & ADDRESS	
4a. Street Address	5430 LBJ FREEWAY
4b. City and County	DALLAS
4c. State	TX
4d. Zip Code	75240
5. STATE IN WHICH SYSTEM OPERATES	CO
6. THIS REPORT PERTAINS TO THE FOLLOWING COMMODITY GROUP (Select Commodity Group based on the predominant gas carried and complete the report for that Commodity Group. File a separate report for each Commodity Group included in this OPID.)	
Natural Gas	
7. THIS REPORT PERTAINS TO THE FOLLOWING TYPE OF OPERATOR (Select Type of Operator based on the structure of the company included in this OPID for which this report is being submitted.):	
Investor Owned	

#### PART B - SYSTEM DESCRIPTION

##### 1.GENERAL

	STEEL				PLASTIC	CAST/ WROUGHT IRON	DUCTILE IRON	COPPER	OTHER	RECONDITION ED CAST IRON	SYSTEM TOTAL
	UNPROTECTED		CATHODICALLY PROTECTED								
	BARE	COATED	BARE	COATED							
MILES OF MAIN	58.58		66.31	1154.39	1898.29						3177.57
NO. OF SERVICES	2029		3256	26981	65615						97881

2.MILES OF MAINS IN SYSTEM AT END OF YEAR											
MATERIAL	UNKNOWN	2" OR LESS	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8" THRU 12"	OVER 12"	SYSTEM TOTALS				
STEEL	0	748.34	371.85	156.74	2.35	0	1279.28				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	0	0	0	0	0	0				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	260.32	23.27	0	0	0	283.59				
PLASTIC PE	0	1266.50	324.83	23.37	0	0	1614.7				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	0	2275.16	719.95	180.11	2.35	0	3177.57				
Describe Other Material:											
3.NUMBER OF SERVICES IN SYSTEM AT END OF YEAR											
						AVERAGE SERVICE LENGTH: 82					
MATERIAL	UNKNOWN	1" OR LESS	OVER 1" THRU 2"	OVER 2" THRU 4"	OVER 4" THRU 8"	OVER 8"	SYSTEM TOTALS				
STEEL	42	24941	6320	893	69	1	32266				
DUCTILE IRON	0	0	0	0	0	0	0				
COPPER	0	0	0	0	0	0	0				
CAST/WROUGHT IRON	0	0	0	0	0	0	0				
PLASTIC PVC	0	0	0	0	0	0	0				
PLASTIC PE	0	59949	4618	1046	1	1	65615				
PLASTIC ABS	0	0	0	0	0	0	0				
PLASTIC OTHER	0	0	0	0	0	0	0				
OTHER	0	0	0	0	0	0	0				
RECONDITIONED CAST IRON	0	0	0	0	0	0	0				
TOTAL	42	84890	10938	1939	70	2	97881				
Describe Other Material:											
4.MILES OF MAIN AND NUMBER OF SERVICES BY DECADE OF INSTALLATION											
	UNKNOWN	PRE-1940	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2009	2010-2019	TOTAL

<b>MILES OF MAIN</b>	0	27.45	137.52	243.72	447.05	465.64	457.07	458.08	818.93	122.11	3177.57
<b>NUMBER OF SERVICES</b>	0	6563	10182	6057	7120	12437	11333	26297	11566	6326	97881

**PART C - TOTAL LEAKS AND HAZARDOUS LEAKS ELIMINATED/REPAIRED DURING THE YEAR**

CAUSE OF LEAK	MAINS		SERVICES	
	TOTAL	HAZARDOUS	TOTAL	HAZARDOUS
CORROSION FAILURE	65	8	55	4
NATURAL FORCE DAMAGE	7	2	12	3
EXCAVATION DAMAGE	26	25	62	60
OTHER OUTSIDE FORCE DAMAGE	1	1	8	6
PIPE, WELD OR JOINT FAILURE	5	1	12	5
EQUIPMENT FAILURE	3		7	1
INCORRECT OPERATIONS	12		11	2
OTHER CAUSE				

NUMBER OF KNOWN SYSTEM LEAKS AT END OF YEAR SCHEDULED FOR REPAIR : 205

**PART D - EXCAVATION DAMAGE**

**PART E-EXCESS FLOW VALUE(EFV) DATA**

1. TOTAL NUMBER OF EXCAVATION DAMAGES BY APPARENT ROOT CAUSE: 88

NUMBER OF EFV'S INSTALLED THIS CALENDER YEAR ON SINGLE FAMILY RESIDENTIAL SERVICES: 1482

- a. One-Call Notification Practices Not Sufficient: 16
- b. Locating Practices Not Sufficient: 17
- c. Excavation Practices Not Sufficient: 55
- d. Other:

ESTIMATED NUMBER OF EFV'S IN THE SYSTEM AT THE END OF YEAR: 8178

2. NUMBER OF EXCAVATION TICKETS : 45832

**PART F - LEAKS ON FEDERAL LAND**

**PART G-PERCENT OF UNACCOUNTED FOR GAS**

TOTAL NUMBER OF LEAKS ON FEDERAL LAND REPAIRED OR SCHEDULED TO REPAIR: 0

UNACCOUNTED FOR GAS AS A PERCENT OF TOTAL INPUT FOR THE 12 MONTHS ENDING JUNE 30 OF THE REPORTING YEAR.

INPUT FOR YEAR ENDING 6/30: 1.20%

**PART H - ADDITIONAL INFORMATION**

Part A-2-2b. The county of Weld was left off the original report. This has been corrected. Part G-Percent of Unaccounted For Gas - A misunderstanding caused zero to be entered. This has been corrected and an L&U of 1.20 has been entered.

**PART I - PREPARER**

Steve Mitchell, operator (Preparer's Name and Title)	(970) 304-2066 _____ (Area Code and Telephone Number)
steve.mitchell@atmosenergy.com (Preparer's email address)	(970) 304-2085 _____ (Area Code and Facsimile Number)