STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

CASE 23-G-0224 - In the Matter of Staff's Analysis of Local Distribution Company Performance Related to the Pipeline Safety Measures.

2022 PIPELINE SAFETY PERFORMANCE MEASURES REPORT

Office of Energy System Planning and Performance
Pipeline Safety Section
June 22, 2023

Table of Contents

Executive Summary

The pipeline safety performance measures that make up this report are the result of collaborative efforts beginning in the 1990's between New York's 11 major natural gas local distribution companies (LDCs) and the New York State Department of Public Service (DPS). Revised in 2017, these measures improve identification and tracking in areas that are critical to pipeline safety. Most of the data used in the report was gathered and submitted by the LDCs using processes developed from these collaborative efforts.

This report examines the results of LDCs performance in specific safety areas that include damage prevention, emergency response, and leak management for 2022, as well as the results of Staff's audits and investigations that verify compliance with the minimum pipeline safety regulations for 2021. The Pipeline Safety Section of the Office of Energy System Planning and Performance has been producing this report since 2004.

For damage prevention measure, in 2022, the data shows a decrease of about 1.4% in the number of one-call tickets, going from 808,652 to 797,613 (or 11,039 less tickets), and an increase of 47 damages, going from 1,312 to 1,359, compared to 2021. This resulted in a decline in performance of the total damage rate, going from a rate of 1.62 per 1,000 one-call tickets in 2021 to a rate of 1.70 per 1,000 one-call ticket in 2022. For the emergency response measure, the 30-minute, 45-minute, and 60-minute emergency response time performances slightly declined within about a 1% range. For leak management measure, the total year-end leak backlog improved about 13.4% from the previous calendar year, going from 8,454 to 7,325 in 2022. Both the total number of leaks discovered, and the number of leak repairs decreased from 14,847 in 2021 to 13,838 in 2022, or 1,009 less leaks, and from 17,209 in 2021 to 15,643 in 2022,

2or 1,566 less leaks, respectively. Due to the increase in the number of miles of leak prone pipe replaced every year, since 2015, with pipe materials that are less prone to leak, there has been a steady decrease in the number of both, leaks discovered and repaired. In 2021, non-compliances were identified in all 11 of the major LDCs' operating service territories.

Overall, the data indicates that performance has substantially improved for LDCs across the state over the twenty-year period Staff has been reporting performance to the New York State Public Service Commission (Commission). It is important to note that the LDCs maintained focus on these performance measures, which ensured the same, if not a greater, level of public safety. As LDCs continue their outreach and education efforts, adopt better practices in responding to leak, odor, and emergency reports, work to replace leak-prone infrastructure, and QA/QC programs continue to mature, Staff expects further performance improvements will occur. A high-level discussion of the results for each performance measure follows below.

The first measure, damage prevention, gauges the LDCs' achievement in minimizing damages to buried natural gas facilities caused by excavation activities. The damage prevention measure is broken down into four categories: damages due to (1) mismarks, or the inaccurate marking by the LDC of its affected underground facility(s); (2) LDC's and its contractors error; (3) third party excavator error; and (4) no-calls, or failure of an excavator to provide notice of intent to excavate to the one-call notification system. Two of the four categories saw a decrease in performance as follows: mismarks damage rate increased slightly from 0.38 per 1,000 one-call tickets in 2021, to 0.40 in 2022 (5.3%); third party damage rate also increased from 0.79 in 2021 to 0.89 in 2022 (12.7%). Two of the measures

showed improvements as follow: the no-calls damage rate showed a slight decrease, going from 0.37 per 1,000 one-call tickets, to 0.34 in 2022 (8.03%) and operators' and their contractors' damage rate decreased from 0.08 damages per 1,000 one-call tickets in 2021, to 0.07 in 2022 (12.6%). Each one-call ticket is a request for mark-outs of the affected underground facility prior to the commencement of excavation.

The second measure, emergency response, reflects the LDCs' ability to respond promptly to reports of leak, odor, and emergency notifications by examining the percentage of reports that were responded to within three response time intervals. The first criterion is respond to 75% of emergency reports within 30 minutes; the second, respond to 90% of emergency reports within 45 minutes; and the third, respond to 95% of emergency reports within 60 minutes.

In 2022, LDCs' performance for each of the emergency response time intervals slightly declined compared to 2021, still with levels exceeding the established percentages. In general, the LDCs have continued to use technologies such as global position systems (GPS) to quickly identify the most appropriate employee to respond to leak, odor, or emergency reports, and have continued placing, or adding, personnel in certain geographical areas during times of day that have historically high volumes of emergency notifications. In addition, the Commission has begun to incorporate incentives or positive revenue adjustments within the LDCs' respective rate proposals to encourage further improvements.

The third measure, leak management, examines LDCs' performances related to their leak inventories, in addition to the evaluation of leaks discovered and leaks repaired. Potentially hazardous leaks include any leak that requires repair pursuant to Title 16 New York Codes Rules and Regulations

(16 NYCRR) Part 255 (Types 1, 2A, and 2). Type 3 leaks, which do not currently have a prescribed repair timeframe in Part 255 are, by definition, considered to be "non-hazardous". Pursuant to 16 NYCRR Part 255, Type 3 leaks require reevaluation during the next required leakage survey or annually, whichever is sooner, to ensure that a public safety concern has not developed. While Type 3 leaks are not expected to become a safety concern, LDCs continue to eliminate these leaks on their systems because it reduces lost gas, maintenance costs, the total number of emergency reports, methane emissions, and any potential dampening effect the persistent odor has on public awareness efforts.

For leaks requiring repair, the end of the calendar year generally coincides with the beginning of the frost season. During this timeframe, there is a greater chance of natural gas migration into a building because the natural gas cannot vent as readily through the soil to the atmosphere due to the impermeable blanket of frost. In general, all LDCs have demonstrated improvement in these measures over the past several years. The total year-end leak backlog improved by approximately 13% from the previous calendar year, a reduction of 1,129 leaks (reduced from a backlog of 8,454 leaks in 2021 to 7,325 leaks in 2022). The repairable year-end leak backlog had a slight increase of three leaks, going from 41 leaks in 2021 to 44 leaks in 2022. The total number of leaks discovered decreased by about 6.8% or 1,009 leaks, from 14,847 leaks in 2021 to 13,838 leaks in 2022, and the total number of leaks repaired also decreased by 9.1% or 1,566 leaks, going from 17,209 in 2021 to 15,643 in 2022. As indicated above, this shows the positive effect the leak prone pipe replacement has had on the leak management performance measure.

For the fourth measure, non-compliances identified by Staff through annual audit activity, LDCs are evaluated on their compliance with the Commission's minimum pipeline safety regulations. This measure looks at non-compliance issues identified by Staff during audits and investigations of the LDCs. Each year, Staff conducts statistically based audits and investigations of the LDCs to determine their compliance with gas safety regulations. Each non-compliance identified by Staff represents an area where an LDC failed to meet these minimum requirements as prescribed.

The data reported varies greatly from year to year, which is due, in part, to Staff's audit cycle. These audits and investigations of the pipeline safety regulations are conducted on varying frequencies determined by the risk each individual regulation poses to public safety. The regulations are identified either as "high risk", in which an audit is conducted annually, or as "other risk", which are evaluated on a frequency not to exceed five years (two, three, four, or five-years). Additionally, because of the timing of Staff's audits and required LDC response(s) to them, this measure looks at 2021, as opposed to the other measures, which look at 2022.

In 2021, Staff identified non-compliances in all 11 of the major LDCs' operating service territories. A review of the number of non-compliances incurred by LDCs in 2021, shows that the number of non-compliances significantly increased for two LDCs, while for the majority the number of non-compliances decreased. For those LDCs that showed an increase in the number of non-compliances in 2021, the increase is primarily attributed to LDCs misunderstanding or misinterpretation of the safety regulations regarding service regulators and vents (inspection), Valve maintenance (service line valves), and Internal Corrosion control or inadequately documenting all pertinent steps of

required inspections. After identifying and bringing these issues to LDCs' attention, the LDCs have developed and implemented remediation plans including, but not limited to, retraining their employees, revising documentation used to record inspections so that all required steps are recorded, and resuming specific activities that were suspended during the COVID emergency.

Regardless of the efforts made thus far, the goal for each LDC should remain the complete elimination of all non-compliances with pipeline safety regulations.

Introduction

The pipeline safety performance measures were developed as a means of evaluating LDC performance in areas presenting higher safety risks to life, property, and the environment. These performance measures are tools used to gauge whether NY LDCs sustain and improve the safe and reliable operation and maintenance of natural gas distribution and transmission systems. These measures show how companies are performing from year to year, as well as the performance trends over time.

In developing the performance measures, Staff first identified areas in the LDCs' systems or operations that carry greater potential for harm to the public if performance is sub-standard. Methods were then developed for recording and tracking data so they could be used as a practical management tool. This process resulted in identifying four performance measures: damage prevention – which examines damage to the LDCs' buried facilities resulting from excavator activities; emergency response – which examines the amount of time that it takes an LDC to reach the site of a reported gas leak, odor, or emergency notification; and leak management - which examines LDC performance in reducing and managing leak inventory levels at year-end, and the evaluation of leaks discovered, and leaks repaired, in total, and per each LDC's respective system mileage.

On August 15, 2013, the Commission issued a request for proposals for an independent consultant to perform a focused operational audit of the performance measure data as submitted by nine of the 11 LDCs mentioned in this report.[1] The audit's

[1] Case 13-M-0314, Central Hudson Gas & Electric Corporation, et al. – Operational Audit, Letters to LCDs (issued August 15, 2013).

objectives were to assess the completeness and accuracy of the performance measure data submitted by LDCs and assess comparability among LDCs.

On April 20, 2016, the Commission issued an Order releasing the audit report and provided guidance on LDCs' response to the recommendations.[2] Implementation plans to address each recommendation were due by May 20, 2016. In general, the consultant reported that the LDCs complied with the intent of these performance measures and, for the most part, accurately reported their respective data. Some of the consultant's recommendations focused on the LDCs' lack of written policies and procedures to address and collect data, instances where the methodology used to calculate the data has varied, and minor inconsistencies among LDCs in the compilation of their respective data.

On March 10, 2017, the Commission issued an Order approving the implementation plans submitted by LDCs and directed the LDCs to implement those plans.[3] As a result of those plans having been implemented, the data used since 2017 in the report should be more consistent across each LDC than prior reports.

For the final measure, non-compliances identified by Staff, LDCs are evaluated on their compliance with the Commission's minimum pipeline safety regulations. This measure looks at non-compliance issues as identified by Staff during audits and investigations of the LDCs. Each year, Staff conducts audits and investigations of the LDCs to determine their compliance with the gas safety regulations. Each non-compliance identified

---

[2] Case 13-M-0314, supra, Order Releasing Report and Providing Guidance on Response (issued April 20, 2016).

[3] Case 13-M-0314, supra, Order Approving Implementation Plans (issued March 10, 2017).

represents an area in which an LDC failed to meet the prescribed minimum requirements found in these regulations.

Non-compliance with pipeline safety regulations could cause or contribute to a major incident. For this reason, it's important these audit findings are publicly transparent and continue to track performance, as well as repeat non-compliances, over time. A further deterrent to non-compliances with pipeline safety regulations are negative revenue adjustments, which have been incorporated into ten of the 11 LDCs' respective rate plans.

While all gas corporations are subject to the Commission's pipeline safety regulations, this report only looks at the performance of the 11 largest local distribution companies, which includes 99.5% of the customers in the state. These are as follow: Central Hudson Gas and Electric Corporation (Central Hudson), Consolidated Edison Company of New York, Inc. (Con Edison), Corning Natural Gas Corporation (Corning), KeySpan Gas East Corporation d/b/a National Grid (NGrid LI), National Fuel Gas Distribution Corporation (NFG), Niagara Mohawk Power Corporation, d/b/a National Grid (NGrid Upstate), New York State Electric & Gas Corporation (NYSEG), Liberty Utilities (St. Lawrence Gas) Corp., Orange and Rockland Utilities, Inc. (O&R), Rochester Gas & Electric Corporation (RG&E), The Brooklyn Union Gas Company d/b/a National Grid NY (NGrid NY).

Performance and Analysis

Throughout this report, except for the compliance measure, the figures display performance results from 2018 through 2022 for each LDC.[4] For the compliance measure, the results from 2017 through 2021 are displayed based on the timing of when audits were completed. The grey columns in the bar graphs represent prior four years', and the black column represents the most recent year's performance. The blue horizontal lines on the bar graphs represent the combined LDC performance levels for the specifically identified measure.

Damage Prevention

Damage to underground natural gas facilities due to excavation activity is one of the leading causes of natural gas pipeline failures and accidents, both statewide and nationally.

The general damage prevention process is as follows: (1) an excavator provides notice of their intent to excavate to a one-call notification system[5] and waits two full working days for underground facilities to be marked; (2) the one-call notification system transmits an excavation notice ("one-call ticket" or "ticket") to the member operators whose facilities may be affected by that excavation activity; (3) the affected operators clearly and accurately mark the location of their buried facilities in or near the excavation area; and (4) excavators work carefully around the marked facilities to avoid

[4] Historical calendar year data and associated Case numbers can be found in Appendix A of this report.

[5] New York State has two one-call notification systems, one for New York City and Long Island, New York 811, and the second for the remainder of the state, UDig NY (formerly known as Dig Safely New York).

damages. A damage to an underground facility can be categorized by identifying where in this four-step process the root cause of the incident lies.

Evaluating the number of damages in relation to the volume of construction and excavation activity in an LDC's respective service territory provides a useful basis for assessing performance. The data used in these analyses are contained in Appendices B and C. The method used to normalize each LDC's data is the number of damages per 1,000 one-call tickets received by that LDC in a given year. As previously mentioned, inconsistencies were identified through the operational audit issued in 2016, and pursuant implementation plans approved in 2017. Thus, the data represented in this year's report may vary by LDC when compared to prior performance measure reports, but the numbers should be more accurate than previous years.

The numbers of damages are then categorized as damages resulting from mismarks, excavator error, company employees and contractors, or no-calls. Each ticket received provides an LDC with the opportunity to mark its affected facilities accurately. Hence, for damages due to mismarks, the report examines the number of damages caused by mismarks per 1,000 tickets received for each LDC and so on for each of the other categories.

Once a one-call ticket is requested by calling the toll-free telephone number (811) and the facilities are marked, the excavator can, if working carefully, avoid damage to underground facilities. Third party excavator error damages are historically the largest component of total damages, primarily because of the need to educate third party contractors in safe excavation and best practices. Most large excavators are aware of the existence of the one-call systems and their requirement to provide notification. Many excavators, especially small excavators, are not as well-versed in the additional

requirements - such as respecting tolerance zones, verifying locations of underground facilities by means of hand-dug test holes, notifying operators of unverifiable marked facilities, maintaining the markings, and maintaining four inches of clearance with powered equipment and the verified facility. Educating excavators on how to avoid underground facility damage once mark-outs have been requested requires more in-depth outreach and training, particularly given employee turnover for some excavators. The Commission cannot order such training for non-utility excavator personnel. This is one of the reasons why, through its enforcement process, the Commission considers reducing penalties for excavator's contingent upon successful completion of training provided by the one-call centers.

Damages caused by LDCs' personnel or by their own contractors are also included in the damage analysis as a separate category. Because of robust damage prevention programs and operator qualification requirements for LDCs, the LDCs' personnel and contractors should have sufficient training, knowledge, qualifications, and experience to work carefully near the LDC's facilities. LDCs should also have better control over the contractors they hire to perform work than they have over unaffiliated excavators. Thus, this category should be the smallest contributor to the total damages and, in theory, the easiest to improve. The current measure tracks damages caused by all utility operations within an LDC. That is, for an electric and gas combination utility, damages to gas facilities caused by electric crews or electric company contractors are combined.

Damages due to no-calls are instances where an excavator failed to provide notice of their intent to excavate to either of the one-call notification systems located in the State. This measure provides an indication of the general level of awareness

excavators have about the one-call notification systems. A high percentage of damage in this category indicates that additional and more effective outreach efforts are needed by the LDC to make excavators aware of the dangers of working around buried facilities and the importance of using the one-call notification systems.

A total of 1,359 underground damages were reported in 2022 for the 11 major natural gas LDC facilities. For the previous ten years, the average number of total damages has been 1,526, with a standard deviation of 122. This consistency demonstrates that any performance improvements or declines have primarily been driven by the number of one-call tickets. In 2022, the data shows a decrease of about 1.4% in the number of one-call tickets, going from 808,652 to 797,613 (or 11,039 less tickets), and an increase of 47 damages, going from 1,312 to 1,359, compared to 2021. This resulted in a decline in performance of the total damage, with a damage rate going from a rate of 1.62 per 1,000 one-call tickets in 2021 to a rate of 1.70 per 1,000 one-call ticket in 2022.

Staff supports the LDCs' and excavators' efforts to eliminate damages by enforcing the Commission's damage prevention regulations prescribed within 16 NYCRR Part 753 - Protection of Underground Facilities. Over the past five years, approximately 1,840 citations that were issued, and that led to 357 training sessions that were completed by excavators with either New York 811 or UDig NY as part of the Commission's enforcement process. Additionally, approximately $4,843,294 in penalties have been collected for this same period.

Figure 1 below displays the collective performance regarding the damage prevention measures.

Damage Prevention Measure	2018	2019	2020	2021	2022
Number of Tickets	777,371	841,849	765,498	808,652	797,613
Mismarks	0.52	0.48	0.42	0.38	0.40
Co. & Co. Contractor Error	0.11	0.08	0.08	0.08	0.07
Excavator Error	1.01	0.88	0.97	0.79	0.89
No-Calls	0.41	0.40	0.38	0.37	0.34
Total Damages (per 1,000)	2.05	1.84	1.85	1.62	1.70

Figure 1 – Collective Damage Prevention Performance

As previously mentioned, there was a 1.4% decrease in the number of one-call tickets when comparing 2022 to 2021.[6] A review of the number of damages, shows that in 2022 there were ten more mismark damages, going from 308 to 318, and 27 fewer no-call damages going from 302 to 275. Although in 2022 the number of mismark damages was higher than in 2021, still this number was well below the five-year average (2018-2022), that is 350 mismark damages. The decrease in the number of no-call damages might indicate that the efforts made in educating excavators of the importance, and the need of, using the one call notification system for providing notice of their intent to excavate has been functional and helpful. For LDC's and their contractors, the number of damages also decreased from 64 in 2021 to 59 in 2022. For third-party damages, there was an

[6] The total damage performance may not equal the sum of the four categories due to rounding.

increase in the number of damages, of about 11% (going from 638 in 2021 to 707 in 2022). Specific operator performance for each of the damage prevention categories are located in Appendices B and C.

Individual LDC performance for total damages per 1,000 tickets, is displayed in Figure 2 below.

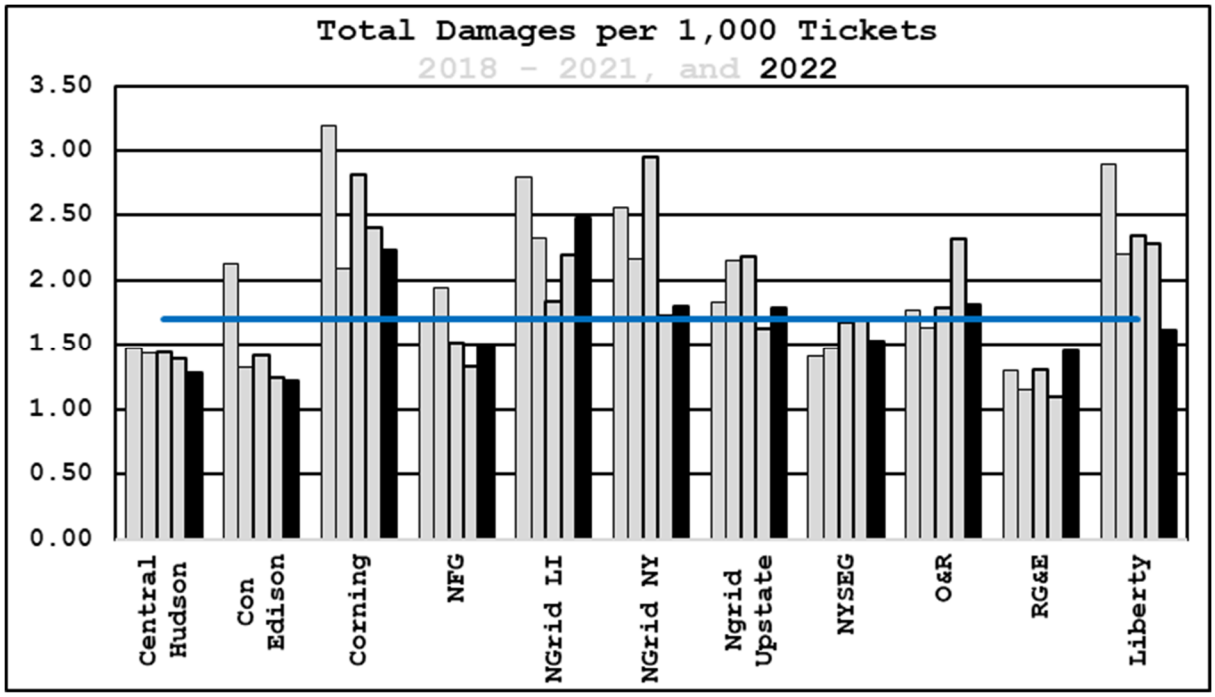


Figure 2 – Total Damages per 1,000 Tickets

As seen in Figure 2, six LDCs improved, and five LDCs performed worse than the previous year. Specifically: Central Hudson improved by 7.1%, going from 42 total damages in 2021 to 39 total damages in 2022 while also receiving 278 additional tickets; Con Edison performance improved by 2.0%, going from 146 total damages in 2021 to 143 in 2022 while also receiving 612 additional tickets; Corning's performance improved by 15.4%, going from 13 total damages in 2021 to 11 total damages in 2022; NYSEG improved by 5.0%, going from 101 damages in 2021 to 96 in 2022 despite receiving 2,921 more tickets,; O&R improved by

17.4%, going from 86 in 2021 to 71 in 2022, despite receiving 2,302 more tickets, and Liberty improved by 27.3%, going from eleven damages in 2021 to eight in 2022, while receiving 157 more tickets. As mentioned above, five LDCs performed worse than the previous year. Among these are: NFG performance decreased by about 8.0%, going from 172 total damages in 2021 to 186 total damages in 2022 while receiving 5,768 fewer tickets; NGrid LI performed worse than previous year by 4.7%, going from 300 total damages in 2021 to 314 in 2022, despite receiving 10,146 less tickets; NGrid NY shows decrease in performance by 8.6%, going from 174 in 2021 to 189 damages in 2022, while receiving 4,820 more tickets; NGrid Upstate also shows a decrease in performance by 6.0%, going from 185 in 2021 to 196 in 2022, or 11 more damages in 2022, while receiving 3,999 more tickets; RG&E's performance decreased by 29.3%, going from total damages of 82 in 2021 to 106 total damages in 2022, despite receiving 1,752 less tickets.

LDCs performance for excavator error damages per 1,000 tickets, is displayed in Figure 3 below.

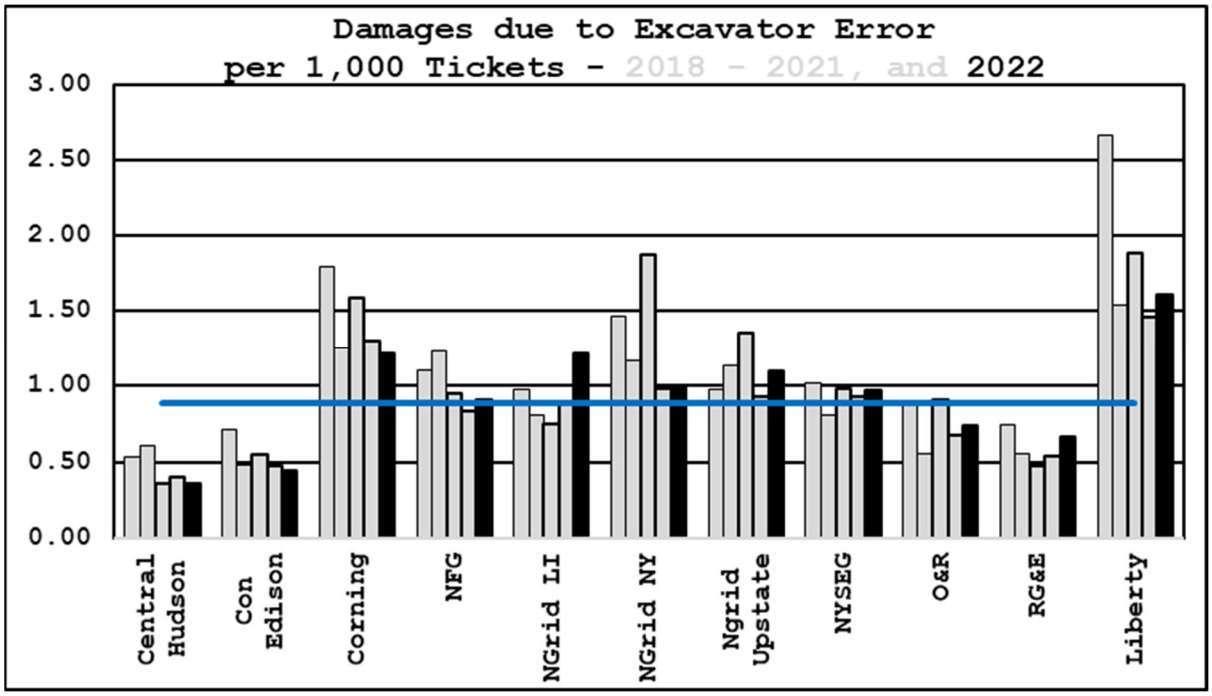


Figure 3 – Excavator Error Damages per 1,000 Tickets

As seen in Figure 3, three LDCs improved and eight LDCs performed worse than the previous year. Among those that performed worse compared to the previous year are NGrid LI showing a significant increase in the number of excavator damages (26%), going from 122 excavator error damages in 2021 to 154 in 2022, and RG&E showing a 22.5% decrease, going from 40 in 2021 to 49 excavator damages in 2022.

LDC performance for no-call damages per 1,000 tickets, is displayed in Figure 4 below.

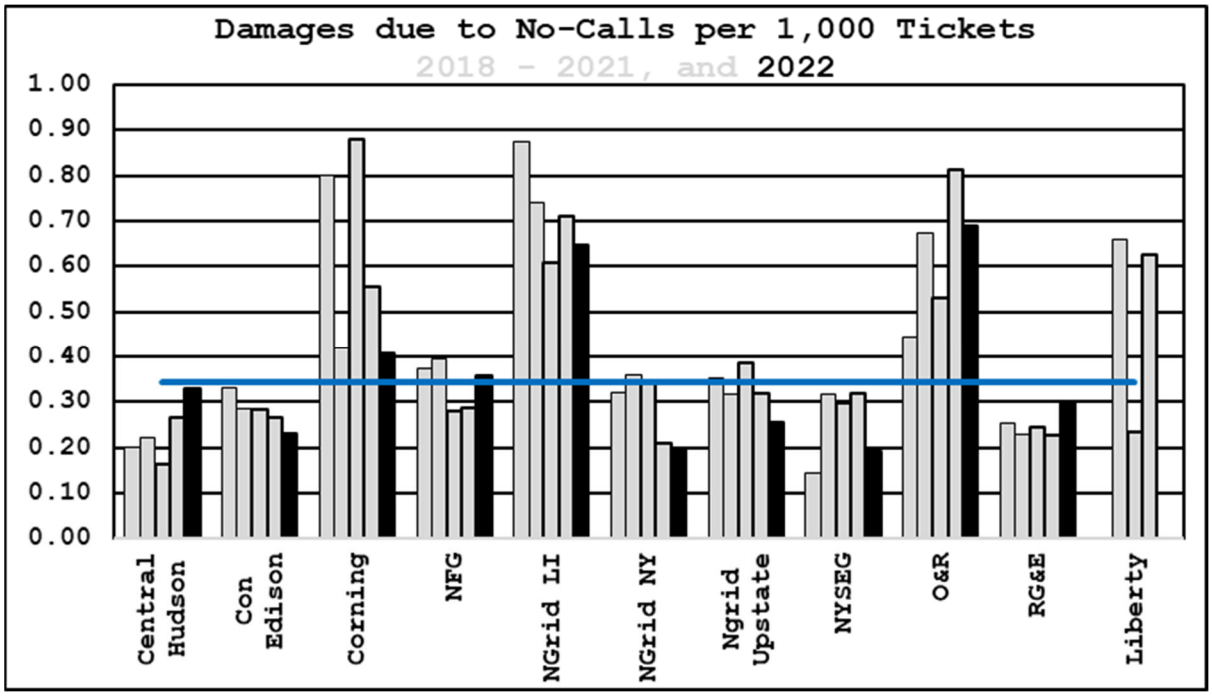


Figure 4 – No-call Damages per 1,000 Tickets

As seen in Figure 4, seven LDCs improved, three LDCs performed worse than the previous year, and one LDC remained the same as previous year. Among those improving, gains were made by: Con Edison (13.0%) going from 31 no-call damages in 2021, to 27 in 2022; Corning (33.3%) going from three to two; NGrid LI (15.5%) going from 97 to 82; NGrid Upstate (22.2%) going from 36 to 28. NYSEG (36.8%) going from 19 to 12, O&R (10%) going from 30 to 27 and Liberty (100%) going from one to zero damages due to no call. NGrid NY remained the same as the previous year at 21 damages due to no call.

Use of the three-digit 811 dialing system, consistent and regular enforcement taken by the Commission for non-compliances of 16 NYCRR Part 753, newer legislation,[7] and public outreach, education, and training efforts taken by LDCs and the one-call

[7] Implemented through Case 18-M-0777, In the Matter of Excavator Training Requirements to Comply with Chapter 333 of the Laws of 2018 (commenced December 19, 2018).

systems, all contributed to raising excavator awareness regarding their obligations to not only participate in the one-call system, but to excavate safely around underground facilities.

To aid in the enforcement of 16 NYCRR Part 753, LDCs voluntarily forward information they collect about excavators who damage underground facilities without having mark-out requests. In a more recent effort, some LDCs have also begun reporting all of their damages, regardless of cause or entity that damaged the facility, allowing Staff to perform more damage investigations in real-time, before mark-outs are removed/refreshed as part of the repair effort.

Once notified, Staff evaluates the specifics of each damage, performs on-site interviews and investigations, identifies the root cause, or causes, of the damage, obtains any pertinent information (such as photographs, measurements, etcetera), and pursues enforcement actions where appropriate. This enforcement effort, coupled with increased reporting frequencies and associated penalties, are deterrents to non-compliance. Where appropriate, enforcement cases are resolved by a consent order agreement in which the financial penalty is often reduced if the excavator agrees to complete a training session provided by the one-call system covering the area where the damage occurred. All LDCs are encouraged to continue their efforts in notifying Staff of 16 NYCRR Part 753 incidents as close to the initial damage as possible.

LDC performance for mismark damages per 1,000 tickets is displayed in Figure 5 below.

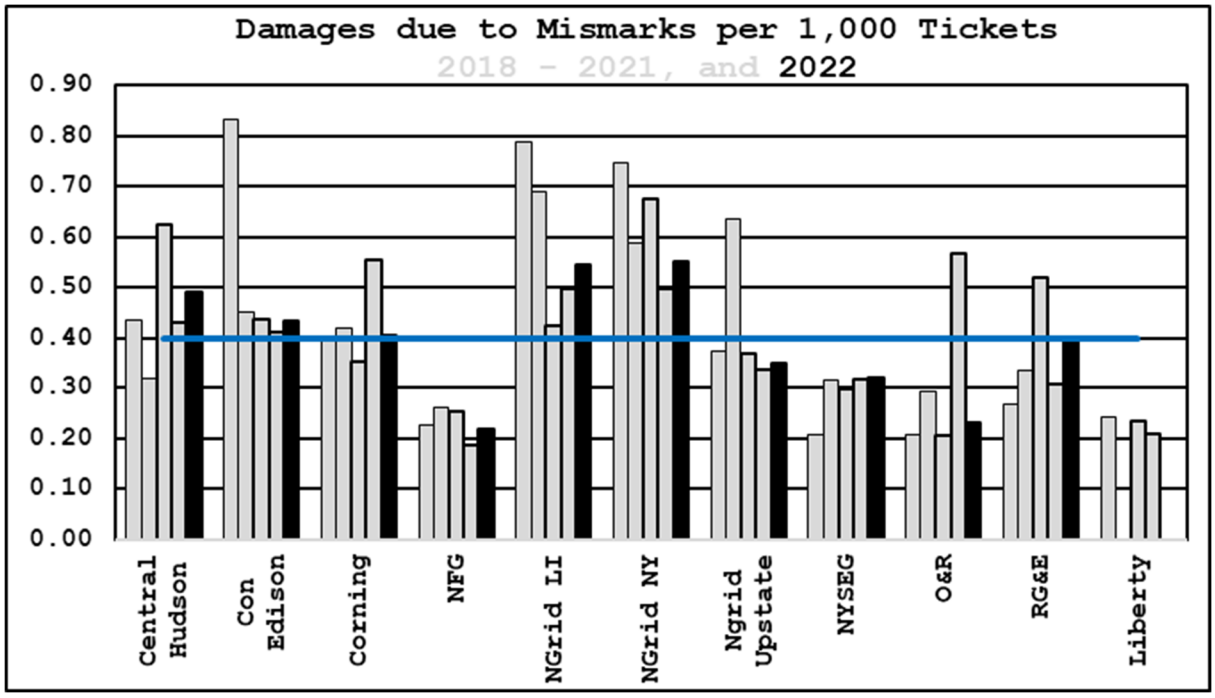


Figure 5 – Mismark Damages per 1,000 Tickets

As seen in Figure 5, seven LDCs performed worse and three LDCs improved and one LDC remained the same as the previous year. Among those improving, gains were made by: Corning 33.3%, going from 3 to two, O&R 57.1% from 21 to 9 and Liberty 100% going from one to zero. Overall, the LDCs showed a 3.25% decrease in performance going from 308 in 2021 to 318 in 2022.

Staff typically expects to see general improvements for damages due to mismarks as LDCs continually adopt best practices to locate their facilities, as they remove older leak- prone pipe, which is more difficult to accurately identify on facility records than the newer pipe (whose exact locations are known) that replaced it, and as LDCs develop better controls over their locating contractors.

LDC performance for company and its contractor damages per 1,000 tickets is displayed in Figure 6 below.

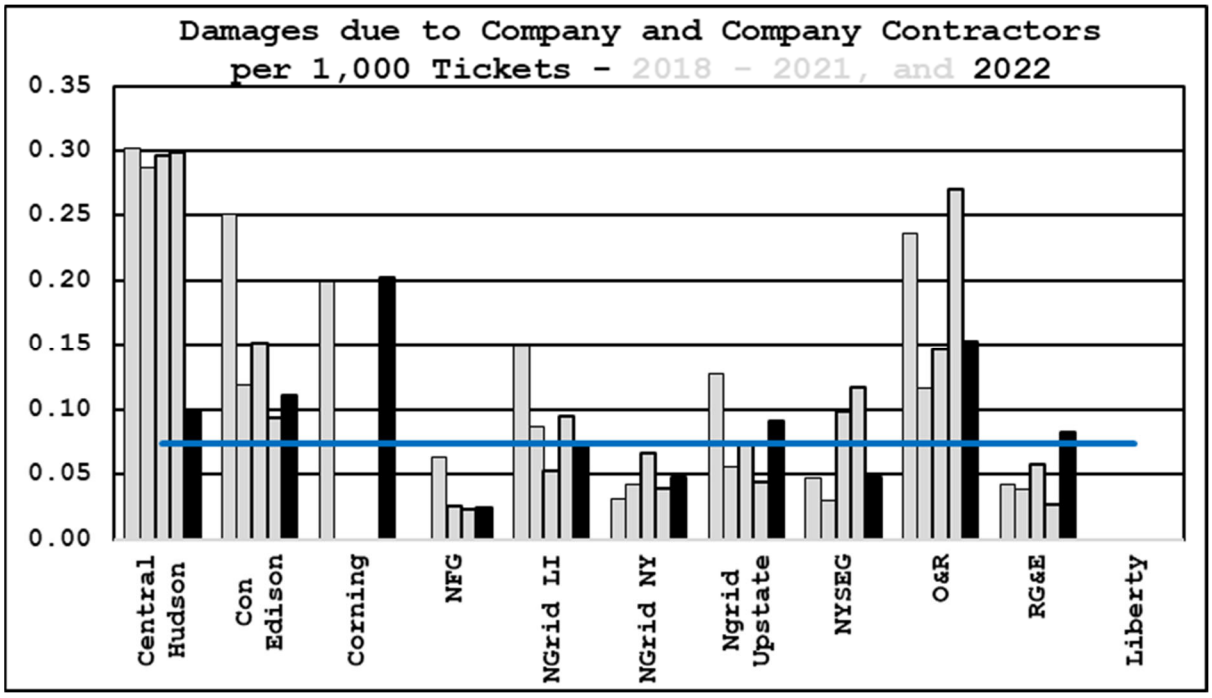


Figure 6 – Damages due to Company and Company Contractors per 1,000 Tickets

As seen in Figure 6, four LDCs improved, three LDCs, Corning, Liberty and NFG, remained at the same level as the previous year, and four LDCs performed worse than the previous year.

With the Commission's support and encouragement, the LDCs have increased their proactive removal of leak-prone pipe. This leads to more excavation from both the LDCs' and their contractors near and around buried natural gas facilities and, in turn, increases the opportunity for damage. Despite the increased excavation activity, the number of damages in this category went down from 64 to 59 damages in 2022, or five damages less than in 2021.

The LDCs are expected to maintain better control over the contractors they hire to perform work for them than they have over non-affiliated third-party excavators. These LDC employees/contractors should have the training, knowledge,

qualifications, and experience to work carefully near and around underground natural gas facilities. The LDCs point out that often these damages are to facilities that are in the process of being removed. When a damage occurs, the LDCs own crews and contractors are more prepared than third-party excavators to promptly control the situation.

While it's true that damages to facilities can occur while they are removed, Staff believes that LDCs should not underestimate this category of damages. These damages still have the potential to harm workers and members of the public, therefore should be avoided. All damages not only pose safety concerns, but also have the potential to lead to service outages and other disruptions, such as road closures and evacuations.

As noted above, this measure has the lowest number of damages and is the smallest contributor to the overall damage prevention measure. Further, the graph's vertical scale in Figure 6 makes the year-to-year changes appear more dramatic than those displayed in Figures 2, 3, 4, and 5.

This graph's vertical scale exaggerates the fluctuations for the smaller LDCs. It has been noted several times in previous reports that the smaller LDCs (such as Corning and Liberty) can have great variations from year to year because of the relatively small number of one-call tickets within their service territories

Figure 7 below displays a comparison between 2013 and 2022 of the collective damage prevention performance, broken down by damage category:

Metric	2013	2022
Number of Tickets	741,729	797,613
Mismarks	0.41	0.40
Co. & Co. Contractor Error	0.09	0.07
Excavator Error	1.13	0.89
No-calls	0.52	0.34
Total (per 1,000)	2.15	1.70

Figure 7 – Comparison between 2013 and 2022

Emergency Response

Commission regulation 16 NYCRR §255.825(d) requires that LDCs provide a monthly report that includes a breakdown of the total number of leak, odor, and emergency reports received and responded to during the prior calendar month broken down in intervals of 15 minutes during normal business hours, weekdays outside business hours, and weekends and holidays.

The following have been established as expected emergency response standards: respond to 75% of leak, odor, and emergency reports within 30 minutes; 90% within 45 minutes; and 95% within 60 minutes. Typically, LDCs have few instances of response times exceeding 60 minutes.[8]

[8] The LDCs are expected to review the circumstances of each instance exceeding 60 minutes and, where possible, work towards their elimination.

The intent of the reporting requirement and the performance measure is to evaluate LDCs response to natural gas leak, odor, and emergency notifications that are generated by the public or other authorities (for example, police, fire, and municipalities).

For the purposes of reporting, the response times are measured from the call received time to the time qualified company personnel arrive at the location.[9]

Figure 8 displays the 11 major LDCs' annual emergency response time performance for each standard since 2018, with the 2022 performance presented in black. In 2022, the total number of leak, odor, and emergency reports was 2.0% lower than 2021, going from 154,996 in 2021 to 150,633 in 2022.

In 2022, the LDCs performance has slightly declined compared to the previous year; however, all 11 LDCs exceeded the 75%, 90%, and 95%, minimum standards for the 30-minute, 45-minute and 60-minute response time. The data over the five-year period, 2018 through 2022, shows that the LDCs continue to improve their performance for this category. Staff believes that due to the fact that in 2020 and 2021 there was less vehicle traffic, due to the COVID pandemic, the LDCs' performance was artificially improved during these years. With traffic patterns returning close to pre-2020 levels, the 2022 performance is more in line with what we would expect if these years (2020 and 2021) were eliminated.

[9] Qualified personnel are defined as company representatives who are properly trained and equipped to investigate leak, odor, and emergency reports in accordance with approved company procedures and 16 NYCRR §255.604, operator qualification requirements.

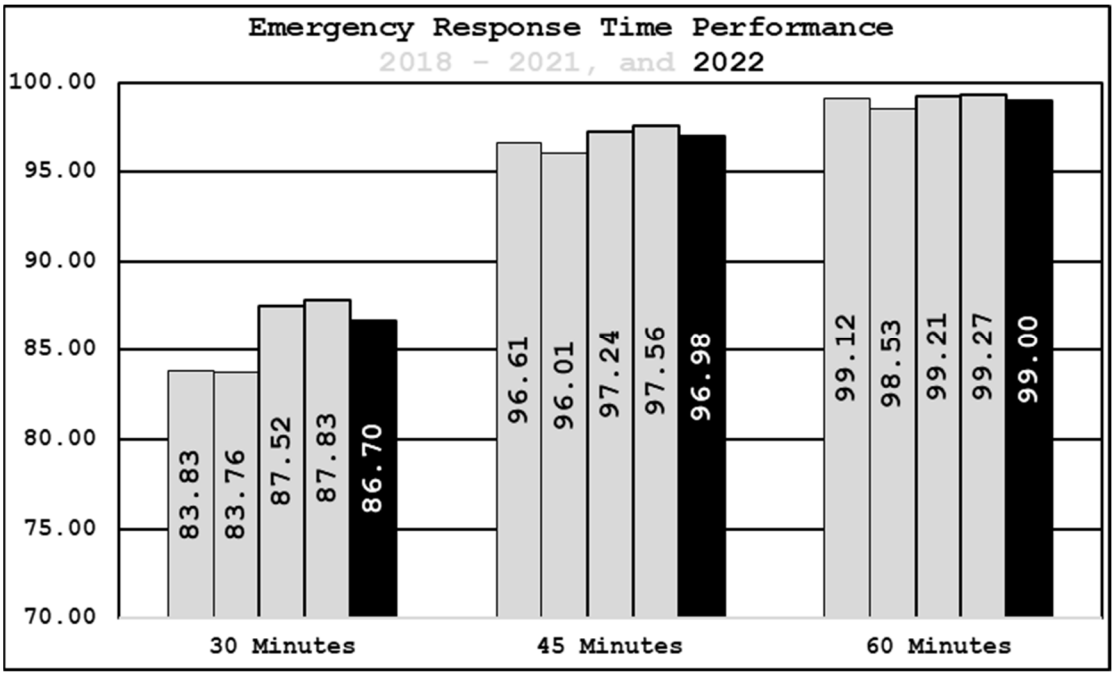


Figure 8 – Emergency Response Time Performance

The past 10 years data, 2013 through 2022, shows a downward trendline in number of calls, with an average of 176,425 leak, odor, and emergency notifications per year across the LDCs.

The decline in number of notifications may be attributed to the reduction of leaks, which will be discussed below in the leak management section, and also due to more aggressive and proactive leak prone pipe removal programs approved by the Commission within rate case proceedings, which also reduces the number of leaks and odor complaints associated with them.

Figure 9 below presents the percentage of emergency response times achieved within 30 minutes by each LDC in the past five calendar years, 2018 through 2022.

LDCs	2018	2019	2020	2021	2022
Central Hudson	82.8	83.3	84.4	84.3	85.6
Con Edison	92.0	94.9	98.3	95.9	97.2
Corning	77.2	79.9	77.3	86.5	82.8
NFG	94.7	95.0	95.4	95.8	93.1
NGrid LI	74.1	75.4	83.1	82.1	78.5
NGrid NY	78.9	78.1	81.5	78.7	78.2
NGrid Upstate	79.3	79.4	80.5	84.3	81.1
NYSEG	76.1	72.5	76.7	83.6	82.5
O&R	88.2	92.4	93.2	91.8	87.8
RG&E	75.6	64.3	77.9	89.1	88.5
Liberty	79.6	81.9	75.4	77.7	76.3

Figure 9 – Emergency Response Times for 30 Minutes (%)

As seen in Figure 9, all eleven LDCs met and exceeded the 30-minute response time for 75% standard. Also, all 11 LDCs exceeded the 90% and 95% minimum standards for the 45-minute and 60-minute response time, respectively. The data for the 45- and 60-minute response times are provided in Appendices D and E, respectively.

It is encouraging to see that all LDCs have made efforts over the years to reach and exceed the emergency response time standards jointly established for this measure. Staff expects

that all LDCs continue to evaluate and monitor their performance and to identify areas where best practices can be implemented to further exceed the benchmarks.

Leak Management

The purpose of evaluating the LDCs' leak management programs is to gauge how the LDCs are responding to and addressing leaks on their systems, eliminating potentially hazardous leaks that are found, reducing total leak backlogs, and evaluating the number of leaks discovered and leaks repaired, in total and per each LDC's respective system mileage.

The natural gas pipeline safety regulations contained in 16 NYCRR Part 255 include requirements for classifying leaks according to their relative hazard by considering factors such as whether natural gas migration is detected near buildings, in manholes, vaults, catch basins, under paved versus unpaved areas, etcetera. All leaks classified as potentially hazardous must be monitored and repaired according to the pipeline safety regulations, with any hazardous conditions being immediately eliminated. All other leaks must be reevaluated during the next required leakage survey or annually, whichever is less, but have no mandatory repair timeframes.

Unrepaired, potentially hazardous leaks pose an increased safety risk to the public. The risk is further exacerbated when the ground contains frost, which increases the chance natural gas will migrate into buildings. The frost essentially acts as a blanket that does not allow the gas to readily vent to atmosphere through the soil, forcing the natural gas to "pool" under the surface where it can find underground pathways and enter structures. Although leak backlogs on any day are a snapshot in time, the end of the calendar year is significant since it generally coincides with the beginning of the frost

season. Thus, all data analyses are presented as of the last two weeks in December.

The data reported by the LDCs related to leak management are contained in Appendices F through L. The leak management measure looks at the year-end backlog of potentially hazardous leaks and in total. This measure does not substitute for, and is not a reflection upon, any LDC's compliance with pipeline safety regulations. The data reported include leak repairs on mains and services by material type; the backlogs of potentially hazardous leaks and in total; and repaired and discovered potentially hazardous leaks.

Analysis of leak management data can also provide an indication of the material type's susceptibility to leakage. As a means of continuously improving leak management programs, Staff encourages LDCs to identify and remove leak prone pipe, such as cast or wrought iron, bare or ineffectively coated steel, and certain brittle plastic materials. Incentive programs to remove deteriorating and leak prone infrastructure and/or reduce leak backlogs have been incorporated into most of the LDCs' past and current rate plans. The long-term goal is the elimination of aging pipeline infrastructure that, due to its vulnerability to leakage, presents greater safety risks to the public and environment. Thus, the aging pipeline infrastructure should be removed and replaced with modern materials that have shown to be less likely to leak. These replacement programs are the primary driver in the significant reduction of hazardous leaks, total leaks, and the associated fugitive methane emissions associated with the leaks.

The overall year-end backlog of potentially hazardous leaks slightly increased from 41 in 2021 to 44 in 2022 and is down 96.3% when compared to 1,178 in 2003. This demonstrates that LDCs have maintained continual efforts in managing leak surveys

and are completing them earlier in the year, to allow for time to repair discovered leaks.

Figure 10 displays the backlog of potentially hazardous leaks[10] from 2018 through 2022. The numerical leak data for this category is contained in Appendix H.

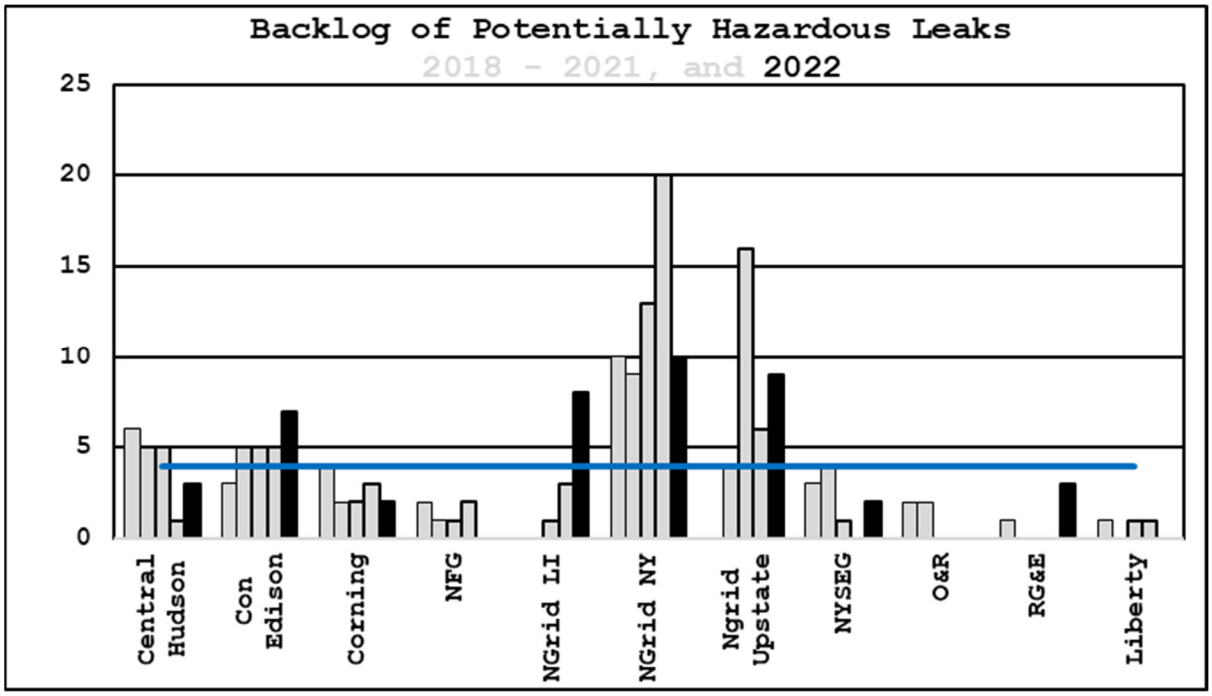


Figure 10 – Backlog of Potentially Hazardous Leaks

As seen in Figure 10, LDCs' continued efforts have led to negligible backlogs for potentially hazardous leaks entering the frost season, the last two weeks in December.

[10] The backlog of leaks requiring repair is defined as active leaks in the system consisting of: Type 1, requiring immediate effort to protect life and property, continuous action to eliminate the hazard, and repairs on a day-after-day basis or the condition kept under daily surveillance until corrected; Type 2A, monitored every two weeks and repaired within six months; and Type 2, monitored every two months and repaired within one year.

Total leak backlogs include all potentially hazardous leaks, as identified above, and Type 3 leaks. In the State's pipeline safety regulations, Type 3 leaks are defined as not potentially hazardous at the time of inspection and are reasonably expected to remain that way. However, Type 3 leaks must be reevaluated during the next regularly scheduled required leakage survey or annually, whichever is less, though they have no mandatory repair timeframe.

Without a mandatory repair timeframe, LDCs could allow the total leak backlog to grow while still meeting the minimum pipeline safety regulations. In recent years, and like that of potentially hazardous leak backlogs, negative revenue adjustments have been incorporated into most of the respective LDC's rate plans in an effort to reduce each company's total leak backlog. In addition, some LDCs' rate plans provide for positive revenue adjustments, as incentives for LDCs to continue reducing Type 3 leaks, that would result in a reduction of methane emission, which is in line with State's goal to reduce carbon footprint and meet the requirements of Climate Leadership and Community Protection Act.

Figure 11 displays the backlog of total leaks (Type 1, 2A, 2, and 3) from 2018 through 2022. The numerical leak data is contained in Appendix K.

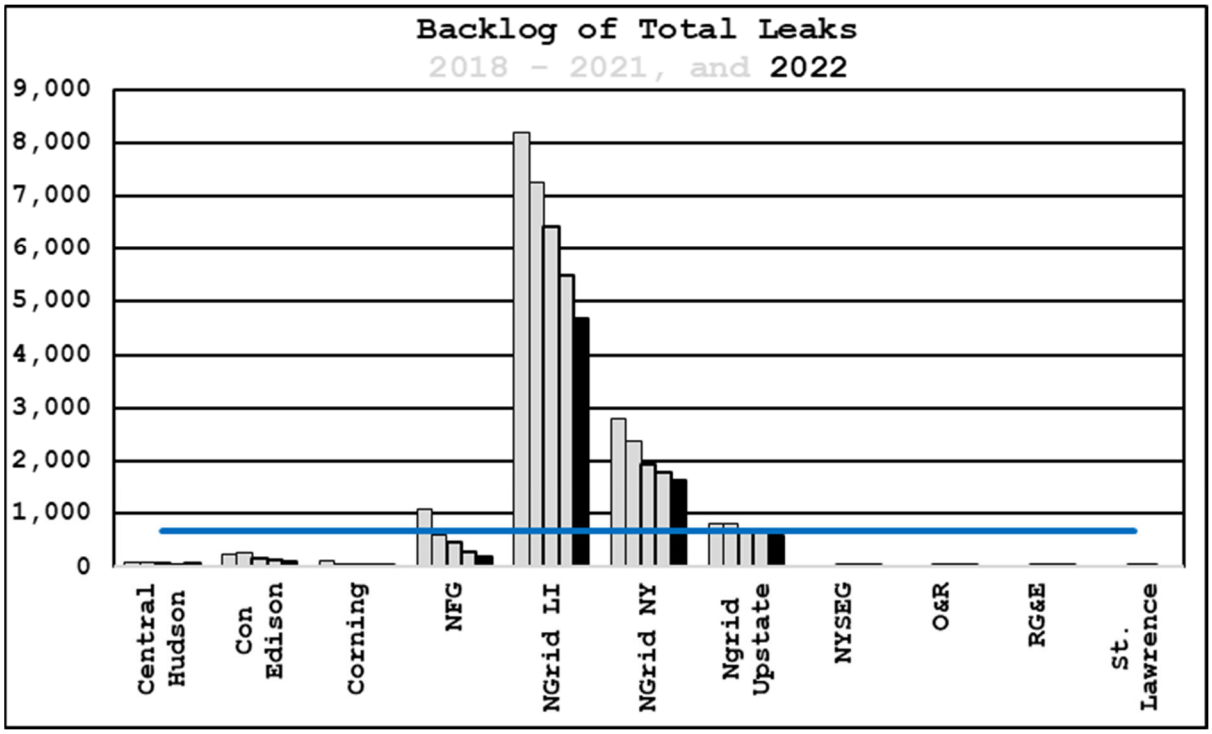


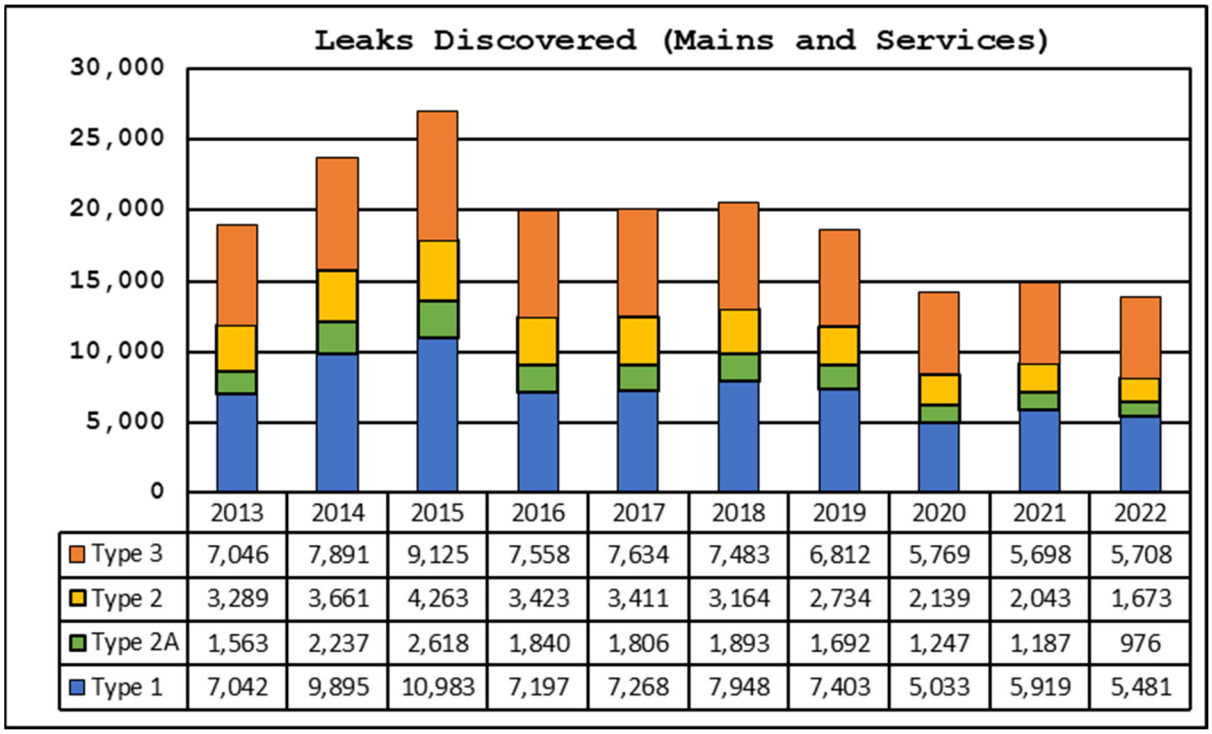
Figure 11 – Backlog of Total Leaks

As seen in Figure 11, NGrid LI and Ngrid NY continue to be outliers in this category even though they have improved from the previous calendar year. NGrid LI and NGrid NY improved by 14.9% and 8.5%, respectively, when comparing 2022 to 2021. This resulted in a total of 975 fewer leaks in 2022. Their total leak backlogs, however, are considerably higher than that of the next highest LDC, NGrid Upstate, and accounts for 86% of the overall total leak backlog. Taken in total, NGrid LI, NGRid NY, and NGrid Upstate (NGrid companies) account for 94.1% of the entire LDCs' total leak backlog. The past five years data shows a downward trendline for the overall leak backlog. However, given the fact that over 94% of the State's total leak backlog comprises leaks on NGrid companies' pipeline systems, it is expected that, going forward, NGrid companies will make every effort to aggressively reduce the leak backlog numbers, by accelerating the elimination of leak prone pipe from their

systems and ramping up their leak repair on pipe not scheduled for replacement. In fact, because of NGrid's performance in this metric, the overall average total leak backlog is artificially high, making comparisons with other LDCs difficult and overshadowing the progress many other companies have made in reducing their backlogs.

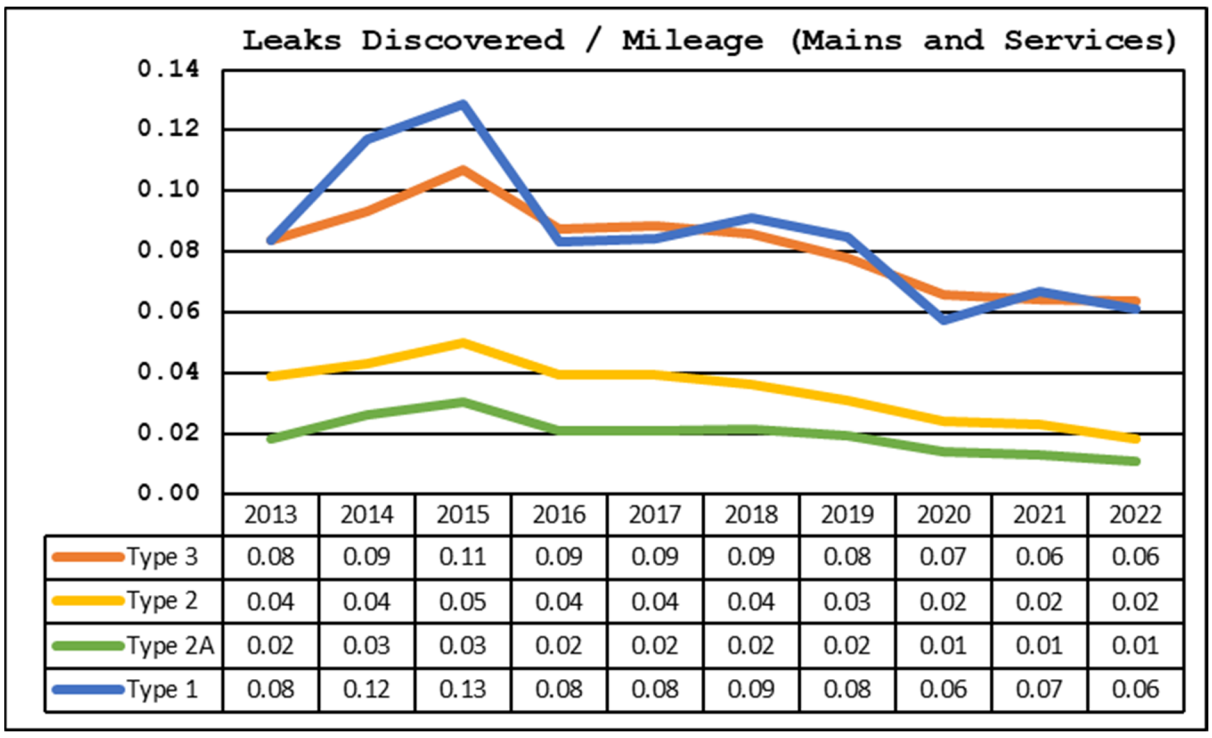
Statistically, performance improvements within this measure include the following: Con Edison (21.9%) going from 137 to 107; Corning (20%) going from 40 to 32; NFG (29.6%) going from 297 to 209; NGrid LI (14.9%) going from 5,494 to 4,671; NGrid NY (8.5%) going from 1,779 to 1,627; NGrid Upstate (8.3%) going from 648 to 594; Corning (11.1%) going from 45 to 40. NYSEG (200%) going from three to nine; RG&E (100%) going from six to 12. As the accelerated removal of leak prone pipe continues over the next several years, Staff expects that the backlog of total leaks will continue to improve.

Figures 12 and 13 display the number of leaks discovered per leak type, and per system mileage, respectively. Figures 14 and 15 display the number of leaks repaired per leak type, and per system mileage, respectively. Figures 16 and 17 display the number of leaks repaired per material type, and per system mileage, respectively.



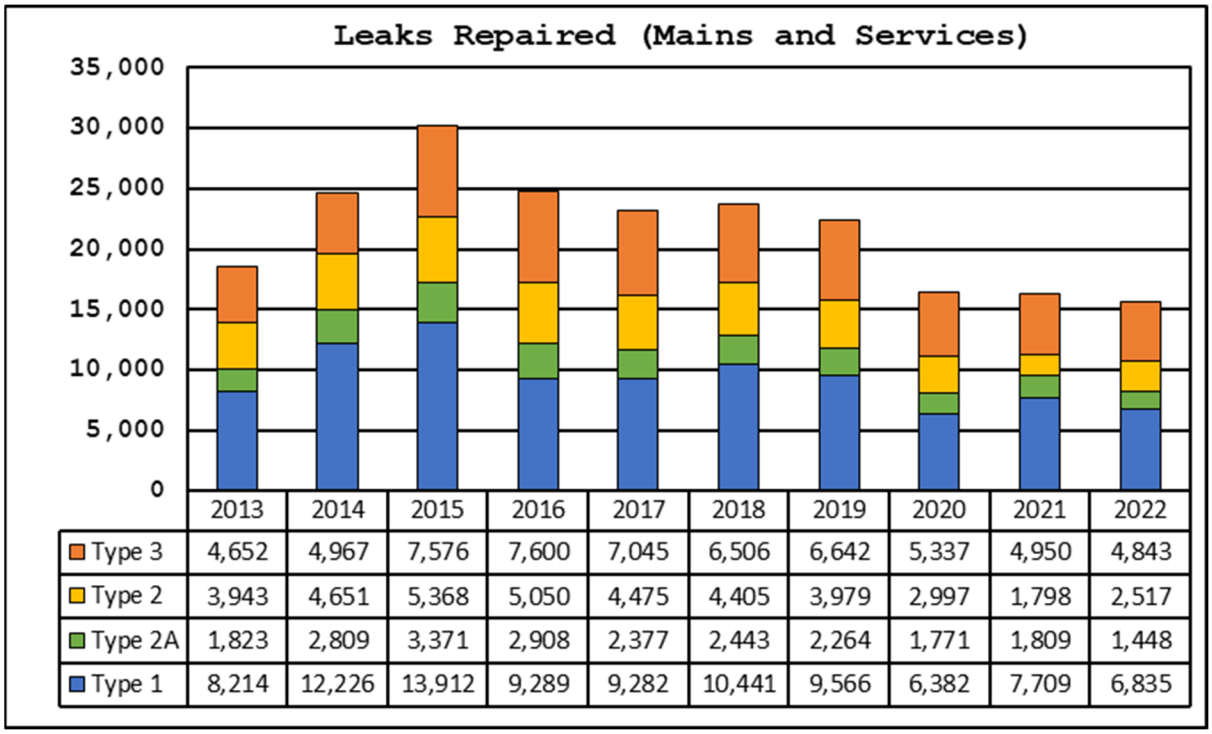
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Type 3	7,046	7,891	9,125	7,558	7,634	7,483	6,812	5,769	5,698	5,708
Type 2	3,289	3,661	4,263	3,423	3,411	3,164	2,734	2,139	2,043	1,673
Type 2A	1,563	2,237	2,618	1,840	1,806	1,893	1,692	1,247	1,187	976
Type 1	7,042	9,895	10,983	7,197	7,268	7,948	7,403	5,033	5,919	5,481

Figure 12 – Leaks Discovered by Type



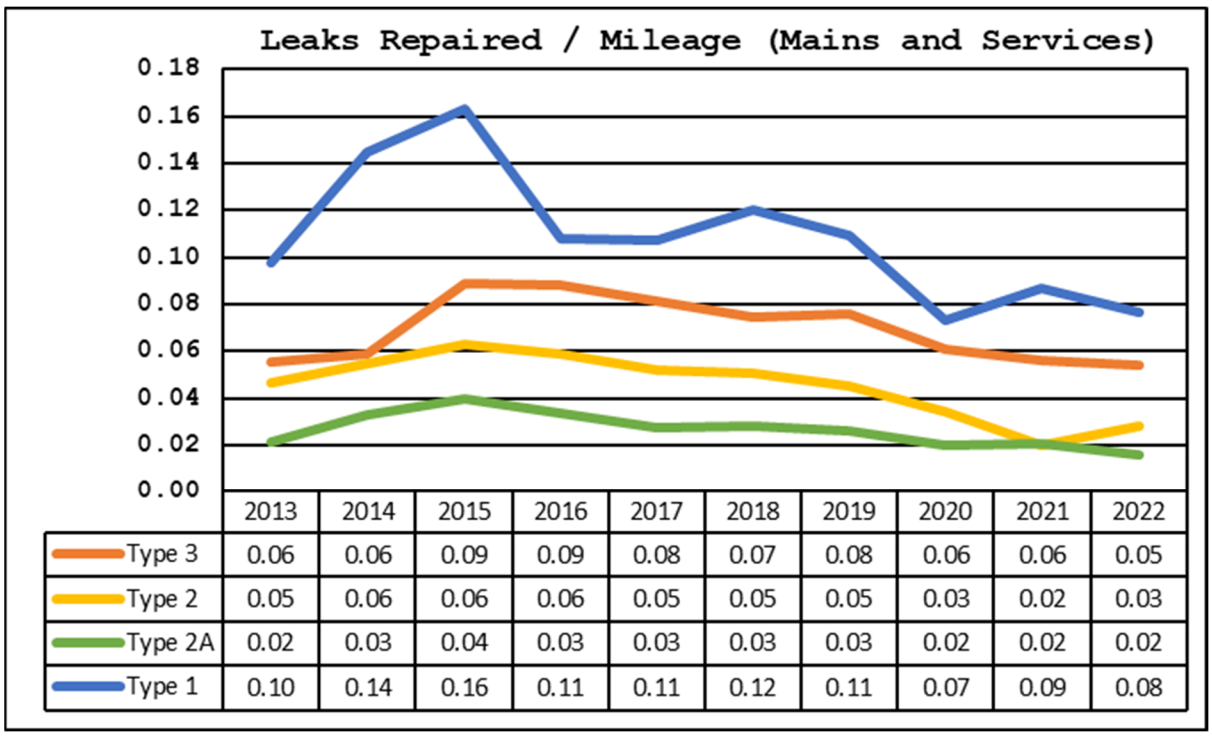
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Type 3	0.08	0.09	0.11	0.09	0.09	0.09	0.08	0.07	0.06	0.06
Type 2	0.04	0.04	0.05	0.04	0.04	0.04	0.03	0.02	0.02	0.02
Type 2A	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01
Type 1	0.08	0.12	0.13	0.08	0.08	0.09	0.08	0.06	0.07	0.06

Figure 13 – Leaks Discovered by Type / Mileage



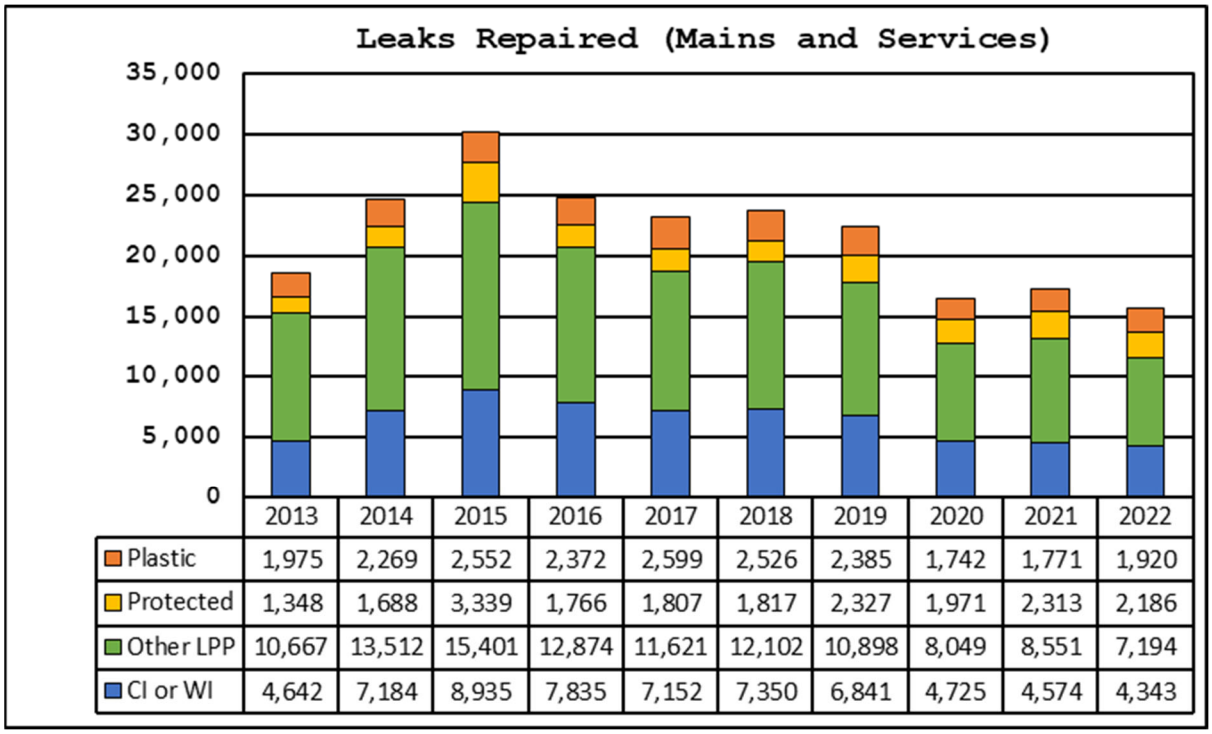
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Type 3	4,652	4,967	7,576	7,600	7,045	6,506	6,642	5,337	4,950	4,843
Type 2	3,943	4,651	5,368	5,050	4,475	4,405	3,979	2,997	1,798	2,517
Type 2A	1,823	2,809	3,371	2,908	2,377	2,443	2,264	1,771	1,809	1,448
Type 1	8,214	12,226	13,912	9,289	9,282	10,441	9,566	6,382	7,709	6,835

Figure 14 – Leaks Repaired by Type



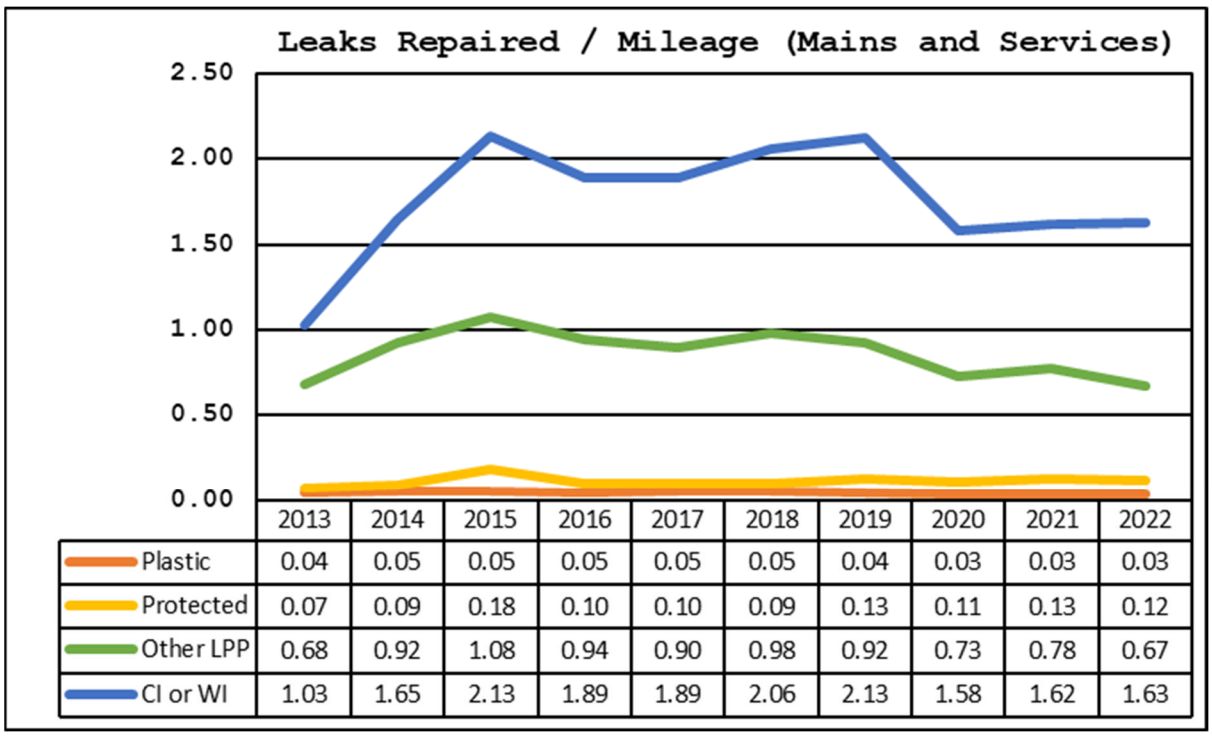
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Type 3	0.06	0.06	0.09	0.09	0.08	0.07	0.08	0.06	0.06	0.05
Type 2	0.05	0.06	0.06	0.06	0.05	0.05	0.05	0.03	0.02	0.03
Type 2A	0.02	0.03	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02
Type 1	0.10	0.14	0.16	0.11	0.11	0.12	0.11	0.07	0.09	0.08

Figure 15 – Leaks Repaired by Type / Mileage



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Plastic	1,975	2,269	2,552	2,372	2,599	2,526	2,385	1,742	1,771	1,920
Protected	1,348	1,688	3,339	1,766	1,807	1,817	2,327	1,971	2,313	2,186
Other LPP	10,667	13,512	15,401	12,874	11,621	12,102	10,898	8,049	8,551	7,194
CI or WI	4,642	7,184	8,935	7,835	7,152	7,350	6,841	4,725	4,574	4,343

Figure 16 – Leaks Repaired by Material



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Plastic	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.03	0.03	0.03
Protected	0.07	0.09	0.18	0.10	0.10	0.09	0.13	0.11	0.13	0.12
Other LPP	0.68	0.92	1.08	0.94	0.90	0.98	0.92	0.73	0.78	0.67
CI or WI	1.03	1.65	2.13	1.89	1.89	2.06	2.13	1.58	1.62	1.63

Figure 17 – Leaks Repaired by Material / Mileage

As seen in Figures 12 through 15, in 2022 there was a fluctuation in the number of leaks discovered and repairs by leak type and material. For instance, the number of Type 1, Type 2A and Type 2 leaks discovered decreased in 2022 compared to 2021, whereas the number of Type 3 leaks discovered increased in 2022. Also, the number of Type 1, Type 2A and Type 3 leaks repaired decreased in 2022, whereas the Type 2 leaks repaired increased. The fluctuation in the number of leaks discovered and repaired by leak type and material could be attributed to the removal of leak prone infrastructure.

Figure 16 shows the number of leaks repaired per material type (plastic, protected, other leak prone pipe excluding cast and wrought-iron, and cast and wrought-iron). Each year from 2013 through 2022 there was a higher number of leaks repaired on other leak prone pipe (7,194) than on cast and wrought iron (4,343). However, when normalizing these figures by the respective materials system mileage, as seen in Figure 17, a opposite relationship is shown. While more leaks are repaired on other leak prone pipe, the rate for leaks repaired on cast and wrought iron (1.63) is more than double that of other leak prone pipe (0.67). This data suggests that cast and wrought iron pipelines have a greater potential for leakage than other leak prone pipe, with other leak prone pipe being five times more likely to leak than non-leak prone pipe.

The LDCs account for this within their leak prone pipe removal programs by assigning weighted factors to each material type. When the risk assessment models are finalized, these prioritized listings of leak prone pipe segments are used by LDCs to focus their replacement efforts. This provides a higher level of public safety.

Non-Compliances Identified through Audit Process

For the final measure, non-compliances identified by Staff through the audit process, LDCs are being evaluated on their compliance with the Commission's minimum pipeline safety regulations. This measure looks at non-compliance issues as identified by Staff during audits and investigations of the LDCs. Each year, Staff conducts statistically based audits and investigations of the LDCs to determine their level of compliance with the Commission's regulations. Each non-compliance identified represents an area in which an LDC failed to meet these minimum requirements as prescribed.

Staff conducts compliance audits and investigations on a calendar year basis. The statistically based audits typically include a review of record and field activities. For the record audits, Staff reviews the previous calendar year's documentation and reports on any instances of non-compliance with the pipeline safety regulations. Throughout the remainder of the year, Staff observes LDC crews as they perform field audits of the actual work being performed and compares those tasks with the regulations and the LDCs' applicable procedures. Like the record audit, any instances of non-compliance are documented and then reported.

For investigations, Staff is made aware, either through mandatory reporting and notifications or through complaints from the public, that an accident or incident has occurred or there is a pipeline related concern that needs attention. Once notified, Staff evaluates the details of the event, performs on-site investigations and/or interviews, identifies the root cause or causes of the accident or incident, obtains any pertinent information or photographs, and documents any instances of non-compliance.

For this measure, the year identified includes both the statistically based audits and investigations for that calendar year.[11] This measure is a 'lagging' indicator since time is needed to conduct audits, report audit findings and for LDCs to respond to Staff's findings. Audits are not considered 'complete' until all steps are completed. Because of this, 2021 findings are reported here. Audits of 2022 records are in currently in progress and will be reported in next year's Performance Measure Report. Figure 18 below displays the total number of non-compliances for the 5-year period from 2017 through 2021. The total number of non-compliances are then normalized by the number of operating headquarters (OHQs) within an LDC. For each OHQ, Staff conducts a separate statistically based audit of activities as prescribed by Staff's five-year audit plan. The associated data per LDC and the number of OHQs are located in Appendices M and N.

[11] This typically includes records generated, field activities performed, or accidents and incidents which occurred during the given specific calendar year.

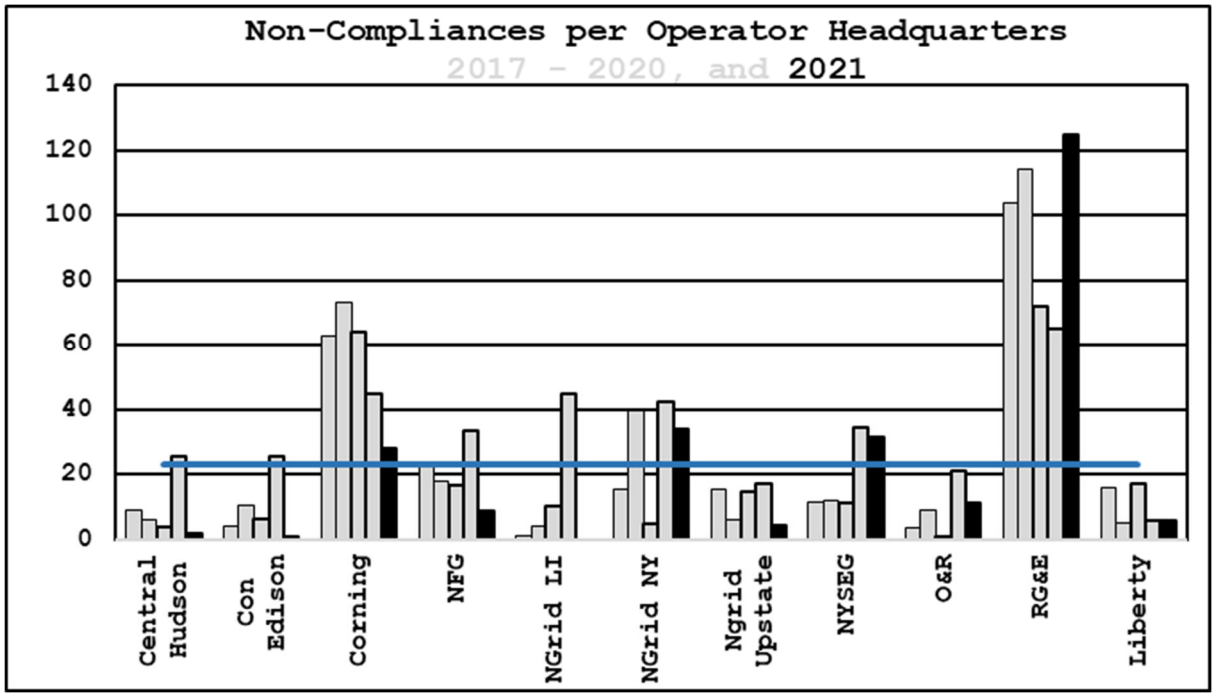


Figure 18 – Non-Compliances Identified through Audits

As seen in Figure 18, the data varies greatly from year to year. This is due, in part, to Staff's five-year audit plan, which reviews sections of the pipeline safety regulations on varying frequencies based on the likelihood of risk to public safety (life, property, and the environment). Therefore, the year-to-year graph does not represent a direct comparison of year-to-year compliance, but summarizes the portion of the 5-year audit conducted during each given year.

The regulations are either identified as "high risk", which are audited annually, or as "other risk", which are audited on a two, three, four, or five-year frequency, not exceed five years.

Staff's focus is on compliance with the minimum pipeline safety regulations, but also includes areas in which LDCs, based upon historic experiences and identified risks, have chosen to exceed these minimum standards. In 2021, non-compliances were identified in all 11 of the major LDCs' operating service territories.

A review of the number of non-compliances incurred by LDCs in 2021, shows that the number of non-compliances significantly increased for a couple of LDCs, while for the majority of the LDCs the number of non-compliances decreased. For those LDCs that showed an increase in the number of non-compliances in 2021, the increase is primarily attributed to problems experienced during the transition to electronic records (from paper records), inspections that were not completed during the COVID emergency because of exposure risks to the public and/or to company personnel, and LDCs' misunderstanding and misinterpretation of the safety regulations regarding Service regulators and vents: inspection, Valve maintenance: service line valves, and Internal Corrosion control. However, after identifying and bringing these issues to LDCs' attention, the LDCs have developed and implemented remediation plans to re-train their employees, revise electronic forms to capture required steps in inspections, and complete inspections that were either not completed or not documented properly. Staff does not expect a reoccurrence of violations related to these issues.

As indicated earlier, the data reported varies greatly from year to year, which is due, in part, to Staff's five-year audit cycle and different required activities being reviewed during different years. These audits and investigations to verify compliance with the pipeline safety regulations are conducted on varying frequencies determined by the risk each regulation poses to public safety.

Conclusion

Natural gas is a safe and reliable energy commodity when handled and transported properly. Pipeline safety performance measures are an important management tool that provides the ability to evaluate trends in key areas such as damage prevention, emergency response, leak management, compliance with the Commission's regulations. The LDCs must continue to focus on these areas to further reduce risks in providing natural gas to consumers.

Over the past ten years, LDCs have worked to improve performance in the key areas of safety as identified within this report. Over this time, damage prevention performance improved 20.0%, going from 2.15 damages per 1,000 locate requests in 2013 to 1.70 in 2022; response to leak, odor, and emergency reports within 30-minutes improved from 83.20% to 86.70%; and the year-end backlogs of potentially hazardous leaks and Damage Prevention Program Enhancements total leaks have decreased 59% and 69%, respectively, going from 108 and 23,945 in 2013, to 44 and 7,325 in 2022, respectively. As LDCs continue their outreach and education efforts, adopt best practices in responding to leak, odor, and emergency reports, work to remove leak prone pipe, and as QA/QC programs continue to mature, Staff's expectation is that further improvements will be realized.

Staff will continue to evaluate LDCs' performance via the measures contained within this report and encourage LDCs to evaluate their past and current practices. LDCs with clear opportunities for improvement when compared to their peers should reach out to the LDCs that showed superior performance levels to determine the incremental and, if necessary, entirely new approaches needed to achieve improvement on a sustained basis.

Those LDCs that made significant improvements are further encouraged to respond to this report and share the best practices that have enabled them to make these improvements. Staff will continue to meet with LDCs on a regular basis and will continue to monitor LDCs' performance. Performance trends will be discussed with LDCs at these meetings and will be further analyzed in future performance measure reports.

Monitoring LDCs' performances and making significant improvements to these metrics is an important step in improving public safety. In addition to improved safety, there are also a series of benefits associated with increased LDC performance. As indicated earlier, eliminating leak prone pipe has proven to reduce the number of leaks, reduce in the costs associated with responding to leak calls, repairing and monitoring existing leaks, and provides and overall reduction of methane releases, and, as methane is known to be a greenhouse gas, improving the environment and helping the State meet its goals pursuant to the Climate Leadership and Community Protection Act.

Appendix A

Historical Case Numbers[12]

Year Analyzed	Case Number
2003	04-G-0457
2004	05-G-0204
2005	06-G-0566
2006	07-G-0461
2007	08-G-0413
2008	09-G-0454
2009	10-G-0225
2010	11-G-0242
2011	12-G-0222
2012	13-G-0213
2013	14-G-0176
2014	15-G-0248
2015	16-G-0254
2016	17-G-0245
2017	18-G-0260
2018	19-G-0298
2019	20-G-0195
2020	21-G-0165
2021	22-G-0165
2022	23-G-0224

[12] The appendices to this report include the most recent year under analysis plus the four previous years. This table is provided to aid those wishing to research prior years.

Appendix B

Number of One-Call Tickets

LDCs	2018	2019	2020	2021	2022
Central Hudson	29,795	31,422	30,414	30,187	30,465
Con Edison	111,669	126,182	98,678	116,897	117,509
Corning	5,010	4,772	5,676	5,398	4,934
NFG	101,503	111,451	115,115	129,056	123,288
NGrid LI	126,872	137,703	151,040	136,705	126,559
NGrid NY	128,359	139,826	90,473	100,391	105,211
NGrid Upstate	101,798	107,008	106,054	113,528	109,529
NYSEG	62,853	66,504	60,685	59,894	62,815
O&R	33,777	34,209	34,004	36,970	39,272
RG&E	71,598	78,227	69,105	74,818	73,066
Liberty	4,137	4,545	4,254	4,808	4,965

Number of Damages due to Mismarks

LDCs	2018	2019	2020	2021	2022
Central Hudson	13	10	19	13	15
Con Edison	93	57	43	48	51
Corning	2	2	2	3	2
NFG	23	29	29	24	27
NGrid LI	100	95	64	68	69
NGrid NY	96	82	61	50	58
NGrid Upstate	38	68	39	38	38
NYSEG	13	21	18	19	20
O&R	7	10	7	21	9
RG&E	19	26	36	23	29
Liberty	1	0	1	1	0

Damages due to Mismarks per 1,000 Tickets

LDCs	2018	2019	2020	2021	2022
Central Hudson	0.44	0.32	0.62	0.43	0.49
Con Edison	0.83	0.45	0.44	0.41	0.43
Corning	0.40	0.42	0.35	0.56	0.41
NFG	0.23	0.26	0.25	0.19	0.22
NGrid LI	0.79	0.69	0.42	0.50	0.55
NGrid NY	0.75	0.59	0.67	0.50	0.55
NGrid Upstate	0.37	0.64	0.37	0.33	0.35
NYSEG	0.21	0.32	0.30	0.32	0.32
O&R	0.21	0.29	0.21	0.57	0.23
RG&E	0.27	0.33	0.52	0.31	0.41
Liberty	0.24	0.00	0.24	0.21	0.00

Appendix B (Continued)

Number of Damages due to No-calls

LDCs	2018	2019	2020	2021	2022
Central Hudson	6	7	5	8	10
Con Edison	37	36	28	31	27
Corning	4	2	5	3	2
NFG	38	44	32	37	44
NGrid LI	111	102	92	97	82
NGrid NY	41	50	31	21	21
NGrid Upstate	36	34	41	36	28
NYSEG	9	21	18	19	12
O&R	15	23	18	30	27
RG&E	18	18	17	17	22
Liberty	0	3	1	3	0

Damages due to No-calls per 1,000 Tickets

LDCs	2018	2019	2020	2021	2022
Central Hudson	0.20	0.22	0.16	0.27	0.33
Con Edison	0.33	0.29	0.28	0.27	0.23
Corning	0.80	0.42	0.88	0.56	0.41
NFG	0.37	0.39	0.28	0.29	0.36
NGrid LI	0.87	0.74	0.61	0.71	0.65
NGrid NY	0.32	0.36	0.34	0.21	0.20
NGrid Upstate	0.35	0.32	0.39	0.32	0.26
NYSEG	0.14	0.32	0.30	0.32	0.19
O&R	0.44	0.67	0.53	0.81	0.69
RG&E	0.25	0.23	0.25	0.23	0.30
Liberty	0.00	0.66	0.24	0.62	0.00

Number of Damages due to Excavator Error

LDCs	2018	2019	2020	2021	2022
Central Hudson	16	19	11	12	11
Con Edison	80	60	54	56	52
Corning	9	6	9	7	6
NFG	112	137	110	108	112
NGrid LI	124	111	114	122	154
NGrid NY	188	164	169	99	105
NGrid Upstate	100	122	144	106	120
NYSEG	64	54	60	56	61
O&R	30	19	31	25	29
RG&E	53	43	33	40	49
Liberty	11	7	8	7	8

Appendix B (Continued)

Damages due to Excavator Error per 1,000 Tickets

LDCs	2018	2019	2020	2021	2022
Central Hudson	0.54	0.60	0.36	0.40	0.36
Con Edison	0.72	0.48	0.55	0.48	0.44
Corning	1.80	1.26	1.59	1.30	1.22
NFG	1.10	1.23	0.96	0.84	0.91
NGrid LI	0.98	0.81	0.75	0.89	1.22
NGrid NY	1.46	1.17	1.87	0.99	1.00
NGrid Upstate	0.98	1.14	1.36	0.93	1.10
NYSEG	1.02	0.81	0.99	0.93	0.97
O&R	0.89	0.56	0.91	0.68	0.74
RG&E	0.74	0.55	0.48	0.53	0.67
Liberty	2.66	1.54	1.88	1.46	1.61

Number of Damages due to Co. & Co. Contractor Error

LDCs	2018	2019	2020	2021	2022
Central Hudson	9	9	9	9	3
Con Edison	28	15	15	11	13
Corning	1	0	0	0	1
NFG	0	7	3	3	3
NGrid LI	19	12	8	13	9
NGrid NY	4	6	6	4	5
NGrid Upstate	13	6	8	5	10
NYSEG	3	2	6	7	3
O&R	8	4	5	10	6
RG&E	3	3	4	2	6
Liberty	0	0	0	0	0

Damages due to Co. & Co. Contractor Error per 1,000 Tickets

LDCs	2018	2019	2020	2021	2022
Central Hudson	0.30	0.29	0.30	0.30	0.10
Con Edison	0.25	0.12	0.15	0.09	0.11
Corning	0.20	0.00	0.00	0.00	0.20
NFG	0.00	0.06	0.03	0.02	0.02
NGrid LI	0.15	0.09	0.05	0.10	0.07
NGrid NY	0.03	0.04	0.07	0.04	0.05
NGrid Upstate	0.13	0.06	0.08	0.04	0.09
NYSEG	0.05	0.03	0.10	0.12	0.05
O&R	0.24	0.12	0.15	0.27	0.15
RG&E	0.04	0.04	0.06	0.03	0.08
Liberty	0.00	0.00	0.00	0.00	0.00

Appendix B (Continued)

Number of Total Damages

LDCs	2018	2019	2020	2021	2022
Central Hudson	44	45	44	42	39
Con Edison	238	168	140	146	143
Corning	16	10	16	13	11
NFG	173	217	174	172	186
NGrid LI	354	320	278	300	314
NGrid NY	329	302	267	174	189
NGrid Upstate	187	230	232	185	196
NYSEG	89	98	102	101	96
O&R	60	56	61	86	71
RG&E	93	90	90	82	106
Liberty	12	10	10	11	8

Total Damages per 1,000 Tickets

LDCs	2018	2019	2020	2021	2022
Central Hudson	1.48	1.43	1.45	1.39	1.28
Con Edison	2.13	1.33	1.42	1.25	1.22
Corning	3.19	2.10	2.82	2.41	2.23
NFG	1.70	1.95	1.51	1.33	1.51
NGrid LI	2.79	2.32	1.84	2.19	2.48
NGrid NY	2.56	2.16	2.95	1.73	1.80
NGrid Upstate	1.84	2.15	2.19	1.63	1.79
NYSEG	1.42	1.47	1.68	1.69	1.53
O&R	1.78	1.64	1.79	2.33	1.81
RG&E	1.30	1.15	1.30	1.10	1.45
Liberty	2.90	2.20	2.35	2.29	1.61

Appendix C[13]

Central Hudson	2018	2019	2020	2021	2022	LDCs
Number of Tickets	29,795	31,422	30,414	30,187	30,465	797,613
Mismarks	0.44	0.32	0.62	0.43	0.49	0.40
No-Calls	0.20	0.22	0.16	0.27	0.33	0.34
Excavator Error	0.54	0.60	0.36	0.40	0.36	0.89
Co. & Co. Contractor Error	0.30	0.29	0.30	0.30	0.10	0.07
Total	1.48	1.43	1.45	1.39	1.28	1.70

Con Edison	2018	2019	2020	2021	2022	LDCs
Number of Tickets	111,669	126,182	98,678	116,897	117,509	797,613
Mismarks	0.83	0.45	0.44	0.41	0.43	0.40
No-Calls	0.33	0.29	0.28	0.27	0.23	0.34
Excavator Error	0.72	0.48	0.55	0.48	0.44	0.89
Co. & Co. Contractor Error	0.25	0.12	0.15	0.09	0.11	0.07
Total	2.13	1.33	1.42	1.25	1.22	1.70

Corning	2018	2019	2020	2021	2022	LDCs
Number of Tickets	5,010	4,772	5,676	5,398	4,934	797,613
Mismarks	0.40	0.42	0.35	0.56	0.41	0.40
No-Calls	0.80	0.42	0.88	0.56	0.41	0.34
Excavator Error	1.80	1.26	1.59	1.30	1.22	0.89
Co. & Co. Contractor Error	0.20	0.00	0.00	0.00	0.20	0.07
Total	3.19	2.10	2.82	2.41	2.23	1.70

[13] The "Total" performance level may not equal the sum of the four-metrics due to rounding.

Appendix C[13] (Continued)

NFG	2018	2019	2020	2021	2022	LDCs
Number of Tickets	101,503	111,451	115,115	129,056	123,288	797,613
Mismarks	0.23	0.26	0.25	0.19	0.22	0.40
No-Calls	0.37	0.39	0.28	0.29	0.36	0.34
Excavator Error	1.10	1.23	0.96	0.84	0.91	0.89
Co. & Co. Contractor Error	0.00	0.06	0.03	0.02	0.02	0.07
Total	1.70	1.95	1.51	1.33	1.51	1.70

NGrid LI	2018	2019	2020	2021	2022	LDCs
Number of Tickets	126,872	137,703	151,040	136,705	126,559	797,613
Mismarks	0.79	0.69	0.42	0.50	0.55	0.40
No-Calls	0.87	0.74	0.61	0.71	0.65	0.34
Excavator Error	0.98	0.81	0.75	0.89	1.22	0.89
Co. & Co. Contractor Error	0.15	0.09	0.05	0.10	0.07	0.07
Total	2.79	2.32	1.84	2.19	2.48	1.70

NGrid NY	2018	2019	2020	2021	2022	LDCs
Number of Tickets	128,359	139,826	90,473	100,391	105,211	797,613
Mismarks	0.75	0.59	0.67	0.50	0.55	0.40
No-Calls	0.32	0.36	0.34	0.21	0.20	0.34
Excavator Error	1.46	1.17	1.87	0.99	1.00	0.89
Co. & Co. Contractor Error	0.03	0.04	0.07	0.04	0.04	0.07
Total	2.56	2.16	2.95	1.73	1.80	1.70

Appendix C[13] (Continued)

NGrid Upstate	2018	2019	2020	2021	2022	LDCs
Number of Tickets	101,798	107,008	106,054	113,528	109,529	797,613
Mismarks	0.37	0.64	0.37	0.33	0.35	0.40
No-Calls	0.35	0.32	0.39	0.32	0.26	0.34
Excavator Error	0.98	1.14	1.36	0.93	1.10	0.89
Co. & Co. Contractor Error	0.13	0.06	0.08	0.04	0.09	0.07
Total	1.84	2.15	2.19	1.63	1.79	1.70

NYSEG	2018	2019	2020	2021	2022	LDCs
Number of Tickets	62,853	66,504	60,685	59,894	62,815	797,613
Mismarks	0.21	0.32	0.30	0.32	0.32	0.40
No-Calls	0.14	0.32	0.30	0.32	0.19	0.34
Excavator Error	1.02	0.81	0.99	0.93	0.97	0.89
Co. & Co. Contractor Error	0.05	0.03	0.10	0.12	0.05	0.07
Total	1.42	1.47	1.68	1.69	1.53	1.70

O&R	2018	2019	2020	2021	2022	LDCs
Number of Tickets	33,777	34,209	34,004	36,970	39,272	797,613
Mismarks	0.21	0.29	0.21	0.57	0.23	0.40
No-Calls	0.44	0.67	0.53	0.81	0.69	0.34
Excavator Error	0.89	0.56	0.91	0.68	0.74	0.89
Co. & Co. Contractor Error	0.24	0.12	0.15	0.27	0.15	0.07
Total	1.78	1.64	1.79	2.33	1.81	1.70

Appendix C[13] (Continued)

RG&E	2018	2019	2020	2021	2022	LDCs
Number of Tickets	71,598	78,227	69,105	74,818	73,066	797,613
Mismarks	0.27	0.33	0.52	0.31	0.40	0.40
No-Calls	0.25	0.23	0.25	0.23	0.30	0.34
Excavator Error	0.74	0.55	0.48	0.53	0.67	0.89
Co. & Co. Contractor Error	0.04	0.04	0.06	0.03	0.08	0.07
Total	1.30	1.15	1.30	1.10	1.45	1.70

Liberty	2018	2019	2020	2021	2022	LDCs
Number of Tickets	4,137	4,545	4,254	4,808	4,965	797,613
Mismarks	0.24	0.00	0.24	0.21	0.00	0.40
No-Calls	0.00	0.66	0.24	0.62	0.00	0.34
Excavator Error	2.66	1.54	1.88	1.46	1.61	0.89
Co. & Co. Contractor Error	0.00	0.00	0.00	0.00	0.00	0.07
Total	2.90	2.20	2.35	2.29	1.61	1.70

Appendix D

Emergency Response Times for 45 Minutes (%)

LDCs	2018	2019	2020	2021	2022
Central Hudson	98.8	98.9	99.4	99.1	99.4
Con Edison	99.5	99.7	99.9	99.2	99.9
Corning	95.6	96.9	95.0	97.0	96.5
NFG	98.7	98.9	99.1	99.3	96.4
NGrid LI	95.3	96.0	97.7	96.9	95.4
NGrid NY	94.8	95.3	96.2	95.6	95.3
NGrid Upstate	94.3	94.3	93.7	95.9	94.9
NYSEG	92.9	89.1	93.0	96.3	95.5
O&R	99.1	99.3	99.3	99.0	97.9
RG&E	95.5	82.5	93.8	98.2	97.9
Liberty	93.2	91.7	92.0	93.5	91.4

Appendix E

Emergency Response Times for 60 Minutes (%)

LDCs	2018	2019	2020	2021	2022
Central Hudson	99.8	99.9	99.9	99.9	99.9
Con Edison	99.9	99.9	99.9	99.4	99.9
Corning	98.6	98.7	98.6	98.5	98.8
NFG	99.6	99.7	99.8	99.9	97.2
NGrid LI	99.6	99.5	99.7	99.5	98.8
NGrid NY	98.5	98.8	99.1	98.9	98.8
NGrid Upstate	98.2	98.1	97.4	98.4	98.3
NYSEG	97.8	94.6	97.9	99.1	99.0
O&R	99.9	99.9	99.9	99.9	99.9
RG&E	97.7	89.2	98.2	99.7	99.6
Liberty	98.2	95.7	97.3	98.5	97.4

Appendix F

Leak Repairs on Mains by Material

LDCs	Unprot. Bare	Unprot. Coated	Prot. Bare	Prot. Coated	Plastic	Cast / Wrought Iron	Copper	Other
Central Hudson	29	0	0	27	9	80	0	0
Con Edison	2,657	116	0	269	67	2,347	0	0
Corning	31	2	0	4	1	0	0	0
NFG	969	0	0	96	42	67	0	12
NGrid LI	264	67	0	4	69	85	0	0
NGrid NY	138	0	0	75	31	1,603	0	0
NGrid Upstate	5	15	0	45	15	119	0	0
NYSEG	5	0	0	2	14	0	0	5
O&R	56	0	0	15	34	0	0	0
RG&E	2	0	0	69	8	0	0	51
Liberty	0	0	0	0	0	0	0	0

Appendix G

Leak Repairs on Services by Material

LDCs	Unprot. Bare	Unprot. Coated	Prot. Bare	Prot. Coated	Plastic	Cast / Wrought Iron	Copper	Other
Central Hudson	30	0	0	59	35	41	0	0
Con Edison	1,299	96	0	954	326	0	121	0
Corning	9	4	0	2	25	0	0	0
NFG	195	0	0	38	276	0	0	1
NGrid LI	295	93	11	4	190	0	13	0
NGrid NY	183	0	0	216	419	0	189	0
NGrid Upstate	43	42	0	115	120	1	5	0
NYSEG	17	0	0	12	30	0	0	3
O&R	126	0	0	26	148	0	0	0
RG&E	0	0	0	142	61	0	3	3
Liberty	0	0	0	1	0	0	0	0

Appendix H

Backlog of Potentially Hazardous Leaks

LDCs	2018	2019	2020	2021	2022
Central Hudson	6	5	5	1	3
Con Edison	3	5	5	5	7
Corning	4	2	2	3	2
NFG	2	1	1	2	0
NGrid LI	0	0	1	3	8
NGrid NY	10	9	13	20	10
NGrid Upstate	0	4	16	6	9
NYSEG	3	4	1	0	2
O&R	2	2	0	0	0
RG&E	1	0	0	0	3
Liberty	1	0	1	1	0

Appendix I

Repaired Potentially Hazardous Leaks

LDCs	2018	2019	2020	2021	2022
Central Hudson	326	224	170	198	184
Con Edison	7,713	7,406	5,814	6,869	5,322
Corning	98	133	54	66	39
NFG	1,069	843	707	839	776
NGrid LI	2,226	2,085	1,225	1,048	921
NGrid NY	4,356	4,095	2,168	2,399	2,745
NGrid Upstate	775	586	590	446	405
NYSEG	171	87	102	77	63
O&R	291	239	187	177	204
RG&E	260	110	132	136	141
Liberty	4	0	1	4	1

Appendix J

Discovered Potentially Hazardous Leaks

LDCs	2018	2019	2020	2021	2022
Central Hudson	304	208	158	176	172
Con Edison	4,259	3,814	2,903	3,738	2,924
Corning	95	118	49	67	45
NFG	1,071	826	693	831	772
NGrid LI	1,997	1,947	1,239	1,050	819
NGrid NY	3,340	3,400	2,129	2,317	2,367
NGrid Upstate	1,145	836	739	528	545
NYSEG	199	145	149	94	83
O&R	297	250	180	178	204
RG&E	294	285	178	166	198
Liberty	4	0	2	4	1

Appendix K

Backlog of Total Leaks

LDCs	2018	2019	2020	2021	2022
Central Hudson	91	87	80	47	62
Con Edison	250	262	173	137	107
Corning	115	48	45	40	32
NFG	1,073	608	453	297	209
NGrid LI	8,199	7,256	6,435	5,494	4,671
NGrid NY	2,803	2,382	1,944	1,779	1,627
NGrid Upstate	815	803	714	648	594
NYSEG	10	14	13	3	9
O&R	10	7	3	2	2
RG&E	14	23	10	6	12
Liberty	1	0	1	1	0

Appendix L

System Totals (Mains and Services)

Year	Steel (in Miles)			
	Unprotected		Protected	
	Bare	Coated	Bare	Coated
2013	10,230	3,420	614	17,963
2014	9,362	3,385	541	18,036
2015	9,313	3,141	533	18,049
2016	8,795	3,196	543	17,699
2017	7,878	3,518	338	17,832
2018	7,570	3,300	339	18,794
2019	7,073	3,331	332	17,692
2020	6,659	3,154	324	17,792
2021	6,501	3,134	320	17,713
2022	6,347	3,060	303	17,706

Appendix L (Continued)

System Totals (Mains and Services)

Year	Plastic (in Miles)	Cast and Wrought Iron (in Miles)	Copper (in Miles)	Other (in Miles)
2013	45,283	4,521	1,651	305
2014	46,823	4,356	1,729	151
2015	48,157	4,194	1,712	134
2016	50,200	4,150	1,539	109
2017	51,499	3,783	1,414	100
2018	51,970	3,570	1,355	99
2019	54,304	3,217	1,349	93
2020	55,207	2,983	1,185	92
2021	56,689	2,826	1,276	88
2022	58,006	2,664	1,268	85

Appendix L (Continued)

System Totals (Mains and Services)

Year	Average Service Length (in Feet)	Number of Services	System Totals (in Miles)
2013	64.40	3,180,639	83,987
2014	64.97	3,173,759	84,383
2015	66.15	3,143,133	85,232
2016	65.70	3,203,732	86,232
2017	65.80	3,200,736	86,361
2018	65.77	3,233,062	86,998
2019	65.79	3,248,187	87,391
2020	66.23	3,261,548	87,397
2021	66.83	3,294,803	88,546
2022	68.00	3,284,900	89,439

Appendix M

High Risk Non-Compliances Identified through Audit Process

LDCs	2017	2018	2019	2020	2021	# of OHQs
Central Hudson	36	123	14	5	9	5
Con Edison	17	17	27	30	3	5
Corning	8	36	34	13	12	1
NFG	116	55	57	56	26	9
NGrid LI	2	8	13	11	0	2
NGrid NY	19	16	5	24	51	2
NGrid Upstate	45	44	38	74	17	11
NYSEG	71	74	79	338	64	13
O&R	5	5	2	5	12	2
RG&E	22	45	57	52	17	1
Liberty	9	3	8	2	5	1

Appendix N

Other Risk Non-Compliances Identified through Audit Process

LDCs	2017	2018	2019	2020	2021	# of OHQs
Central Hudson	9	4	6	124	0	5
Con Edison	3	35	5	97	1	5
Corning	55	37	30	32	16	1
NFG	100	108	92	243	55	9
NGrid LI	0	0	4	79	0	2
NGrid NY	12	63	5	61	17	2
NGrid Upstate	125	21	121	117	29	11
NYSEG	77	83	66	109	345	13
O&R	2	13	0	37	10	2
RG&E	82	69	15	13	106	1
Liberty	7	2	9	4	1	1