

ARIZONA CORPORATION COMMISSION

Office of Pipeline Safety-AZOPS



2020 Damage Prevention Performance Report

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1 CONTENTS

2 EXECUTIVE SUMMARY 3

3 INTRODUCTION 3

4 METHODOLOGY 5

5 DATA SUMMARY 7

6 HISTORICAL DATA 8

7 RECOMMENDATIONS TO IMPROVE PIPELINE DAMAGE PROGRAMS 12

8 CONCLUSION 14

List of figures

Figure 1. Damage Prevention Trend 2020 5

Figure 2. Pipeline Damages by Cause 2020 6

Figure 3. 811 tickets received per year 8

Figure 4. Pipeline Damage "No 811 Ticket" 9

Figure 5. Pipeline Damage " Incorrect Marking" 9

Figure 6. Pipeline Damage "Third Party Excavator Error" 10

Figure 7. Pipeline Damage "Error by LDCs Personnel" 10

Figure 8. Average number of damaged pipelines per 1,000 tickets 11

2 EXECUTIVE SUMMARY

This report examines and measures the trend on pipeline damages caused by excavation activities of all Intrastate Gas and Hazardous Liquid pipeline systems in the State of Arizona owned and operated by transmission and/or local distribution companies (LDC).

The definition of “Operator” and “Pipeline System” under R14-5-201 of the Arizona Administrative Code, Title 14, Chapter 5 are as follows:

“Operator” means a person that owns or operates a pipeline system or master meter system.

“Pipeline System” means all parts of the physical facilities of a public service corporation or provider through which gas, LPG, LNG, or a hazardous liquid moves in transportation, including but not limited to pipes, compressor units, metering stations, regulator stations, delivery stations, holders, fabricated assemblies, and other equipment, buildings, and property so used.

3 INTRODUCTION

In 2012, the Arizona Corporation Commission’s Office of Pipeline Safety (“AZOPS”) directed the Operators to submit quarterly reports of pipeline damages (data) caused by excavation according to the following information:

1. The total number of locate requests received by the Operators.
2. The total number of excavation damages.
3. The date, location, and name of the company or person responsible for the damage.
4. The cause of each damage classified into four root causes.
 - No AZ811 ticket requested by excavator.
 - Incorrect marking of pipeline facilities.
 - Error by excavator.
 - Error by operator or operator contractor.

The goal of these reports is to identify the leading cause of “pipeline hits” and to suggest improvement in the areas that have more “pipeline hits” by a process of identification and tracking to reduce the number of pipeline damages.

For the creation of the Damage Prevention Performance Report 2020 an analysis of the information data was performed; the data analyzed corresponds to (21) operators as shown in Table 1 below:

	Operator
1	Abbott Nutrition Supply Chain
2	Alliant Gas
3	Ameresco Ninety First Avenue Renewable Biogas
4	West Phoenix Power Plant
5	CPN Pipeline Company
6	City of Benson*
7	City of Mesa Municipal System
8	City of Safford Utilities Division
9	City of Willcox Municipal System
10	Colorado City Gas Department*
11	Copper Market Incorporated
12	Duncan Rural Service Corp.
13	Gila Bend Operations Company, LLC
14	Graham County Utilities Incorporated
15	NUCOR Steel Kingman, LLC
16	Pimalco Gas**
17	Plains Marketing, L.P.
18	Southwest Gas Corporation
19	Swissport Fueling Incorporated
20	UniSource Energy Services
21	United Dairymen of Arizona

Table 1

*Data used for the analysis obtained from 2020 annual reports.

**Data used for the analysis obtained from 2019 annual report.

These 21 operators have a total combined pipeline length of 43,331 miles and 1,365,269 of gas services. It is important to note that this information data is derived from 2020 annual reports, with the exception of Pimalco Gas.

In addition, for transparency purposes two small operators did not provide their damage prevention quarterly reports during 2020. However, the pipeline damage numbers included in this analysis were obtained from the 2020 annual reports. Information contained within this report may be available upon data request.

4 METHODOLOGY

The AZOPS gathered all reports corresponding to Q1, Q2, Q3 and Q4 for year 2020 and analyzed the data received by operators. Table 2 below shows a summary report for 2020.

SUMMARY REPORT 2020					
Miles of Pipelines	43,331				
No. of Services	1,365,269				
	2020				
	1st Q	2nd Q	3rd Q	4th Q	Totals
811 Tickets Received	183,245	191,651	198,539	194,676	768,111
Pipeline Damage Totals	126	184	194	234	738
Cause of Damage					
No 811 Ticket	41	63	73	70	247
Incorrect Marking	13	11	9	43	76
3rd Party Excavator Error	60	82	91	96	329
Error by LDCs Personnel	12	28	21	25	86
Average Number of Pipeline Damaged Per 1,000 Ticket Request	0.69	0.95	0.96	1.23	0.96

Table 2

Figure 1 below shows pipeline damage versus AZ811 tickets received during each quarter during 2020.

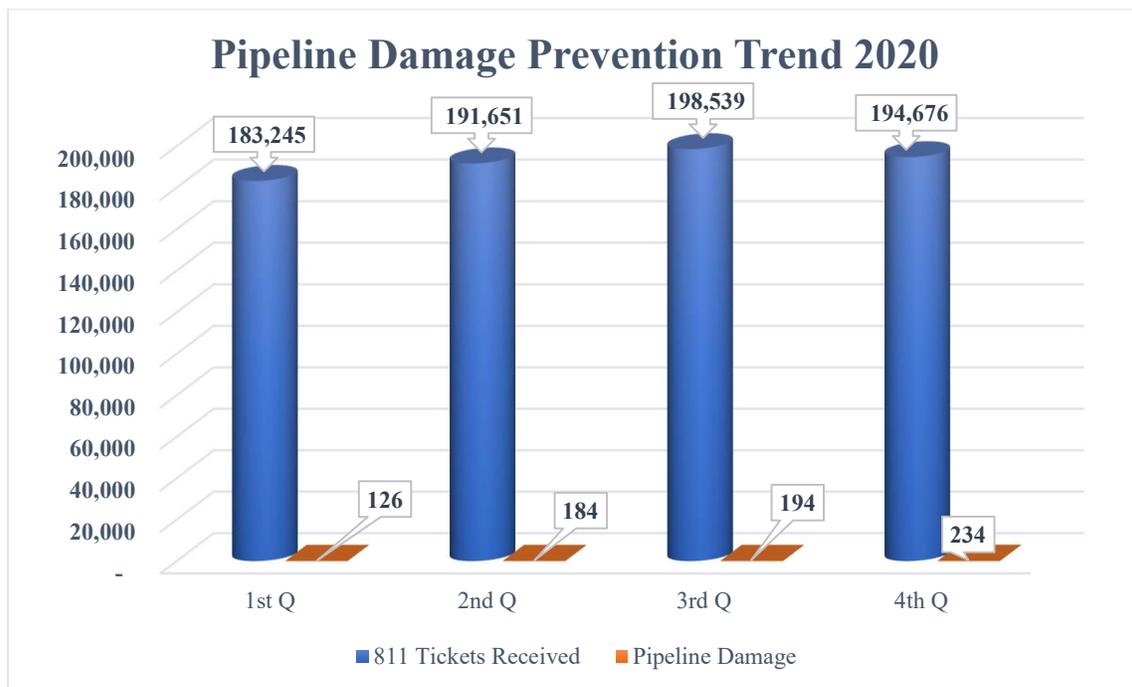


Figure 1. Damage Prevention Trend 2020

Figure 2 below shows 738 pipeline hits/damages as the accumulative pipeline damage reported by operators during year 2020, the leading cause of pipeline damage during 2020 continues to be 3rd Party Excavator Error, the second cause is No AZ811 Tickets, followed by Error by LDCs Personnel and Incorrect Marking being the last cause.

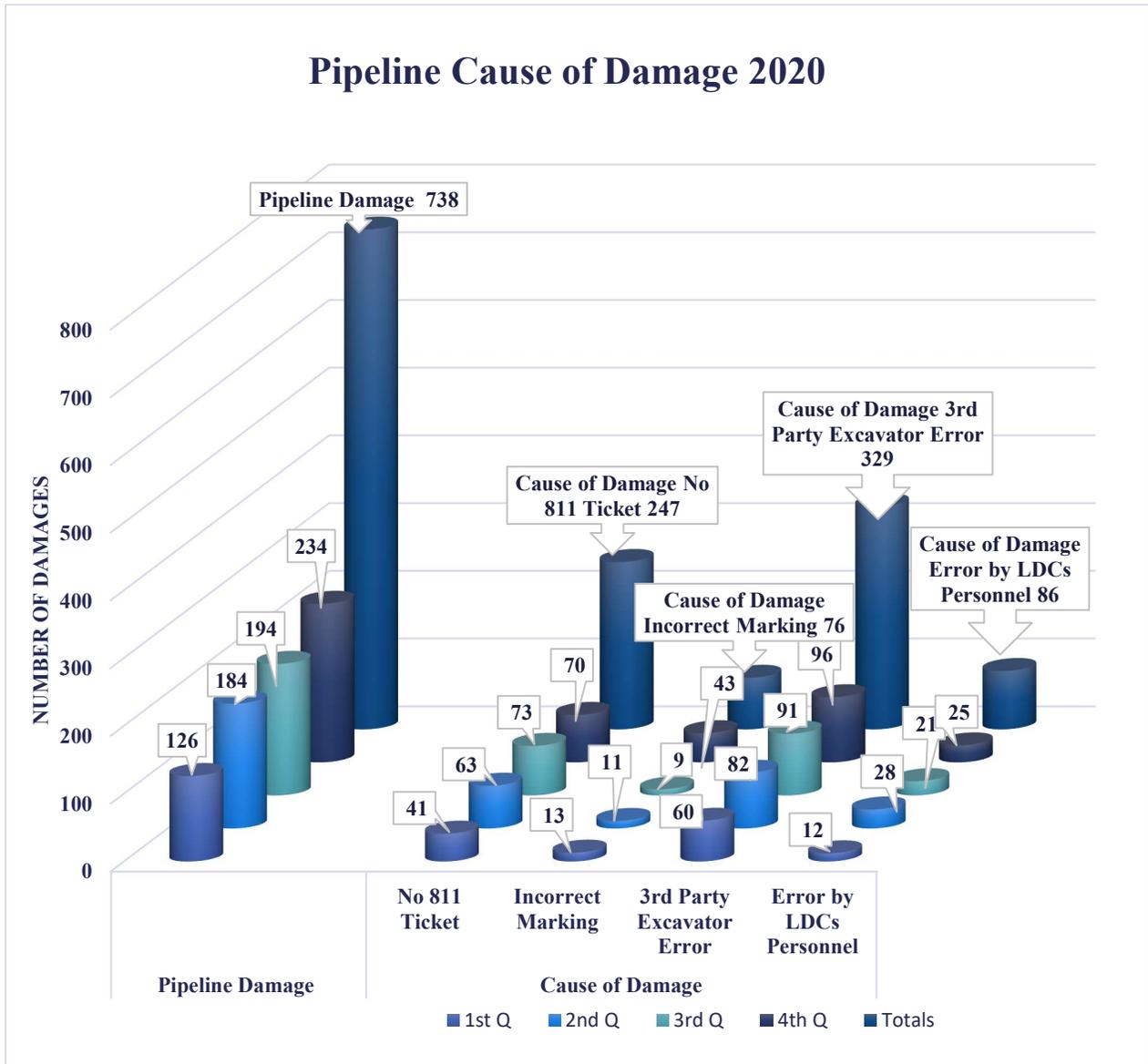


Figure 2. Pipeline Damages by Cause 2020

5 DATA SUMMARY

The information data in this analysis was gathered, analyzed, and compared between years 2019 and 2020. However, some of the figures presented within the Damage Prevention Performance Report 2020 will show historical data from year 2012 through 2020.

The data analysis assessment shows that there was a 7% increase in AZ811 tickets generated for year 2020 versus year 2019. There were 768,111 AZ811 tickets received in year 2020 and within 2019 there were 714,582 AZ811 tickets received.

The number of pipeline damages reported increased in year 2020 by 7.7% in comparison to pipeline damages reported in 2019. The increase in the number of pipeline damages is attributed to the following causes of pipeline damage per category; number one “Third Party Excavator Error”, second “No AZ811 tickets”, third “Error by LDCs Personnel and lastly “Incorrect Marking” in year 2020.

From the analysis, it is acceptable to ascertain the following description of pipeline damages by excavation and by category:

No AZ811 ticket increased 1.21%. There were 3 more cases reported in year 2020 than in year 2019 with a total of 247 cases reported during 2020.

Pipeline damages by excavation due to incorrect marking increased in year 2020. There were 63 cases reported in year 2019 and 76 cases reported in year 2020, which represents an increment of pipeline damages related to this root cause of 1%.

Pipeline damages by excavation due to Third Party Excavator Error increased by 20%. There were 264 cases in 2019 and 329 cases reported in 2020.

Pipeline damages by excavation due to operator or operator’s contractor error decreased 28% from 2019 to 2020. There were 110 cases reported in 2019 and only 86 cases in 2020.

Based on the data analyzed, the average number of pipeline damages due to excavation per 1,000 locate tickets increased from 0.95 in 2019 to 0.96 in 2020.

However, the number one leading cause of pipeline damages by excavation is due to 3rd Party Excavator Error and the second leading cause of pipeline damages is attributed No AZ811 tickets.

6 HISTORICAL DATA

The following charts presented in this section are for general information purpose only; they show historical data from calendar year 2012 through 2020. The chart below (Figure 3) shows the trend of AZ811 tickets by year. There has been a continuous increase since the reporting started in 2012 up to date.

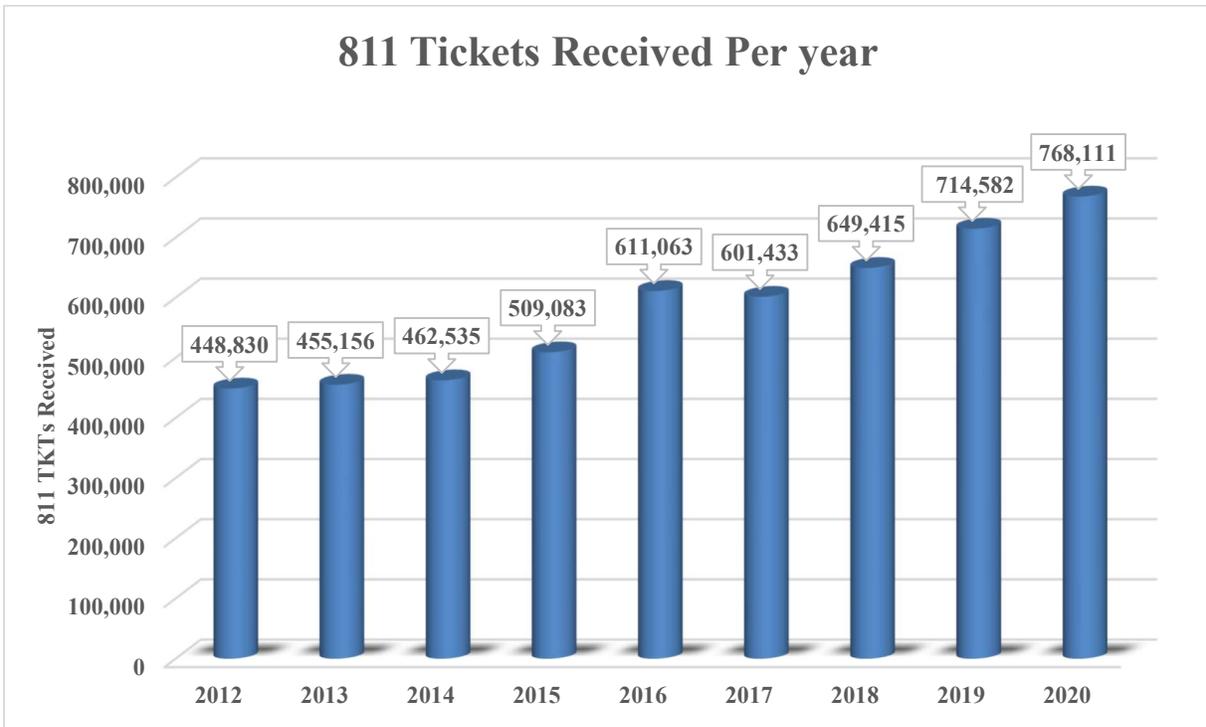


Figure 3. 811 tickets received per year

The following charts depict trends on the cause of pipeline damage classified into four root causes between the year 2012 and year 2020. These categories are:

1. No AZ811 ticket requested by excavator (See Figure 4)
2. Incorrect marking of pipeline facilities (See Figure 5)
3. Error by excavator (See Figure 6)
4. Error by operator or operator contractor (See Figure 7)

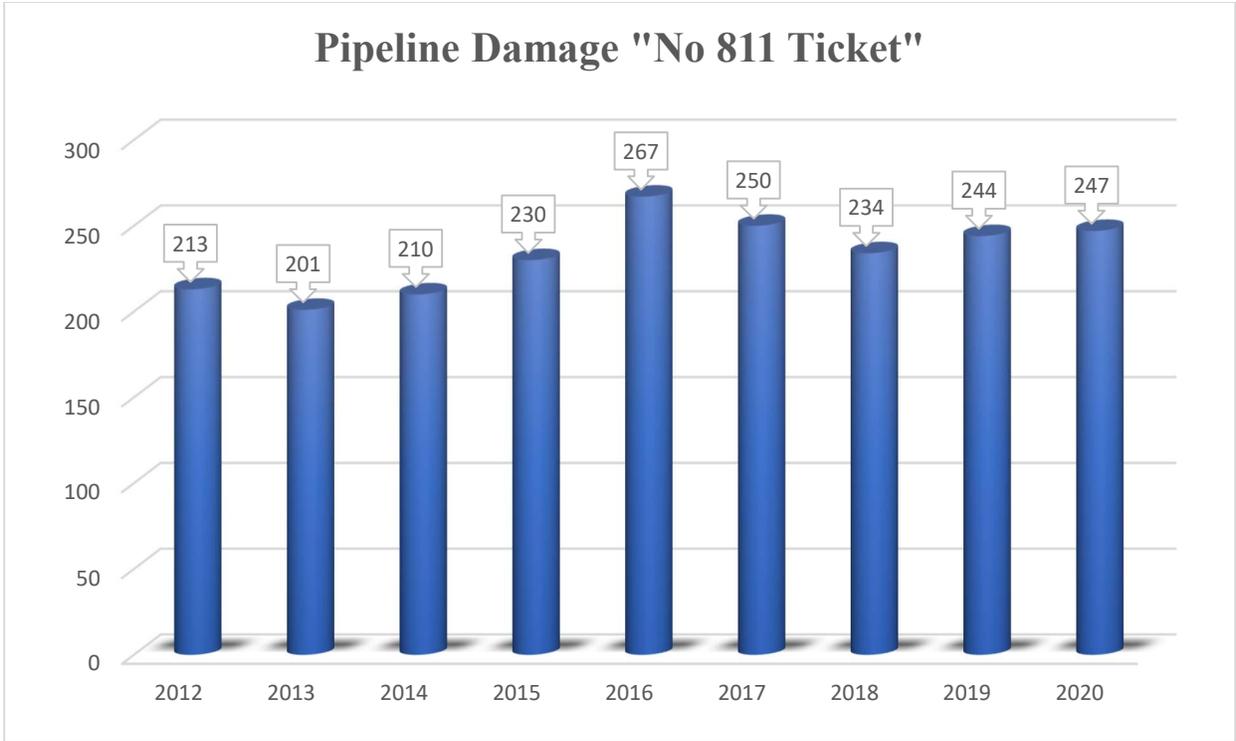


Figure 4. Pipeline Damage "No 811 Ticket"

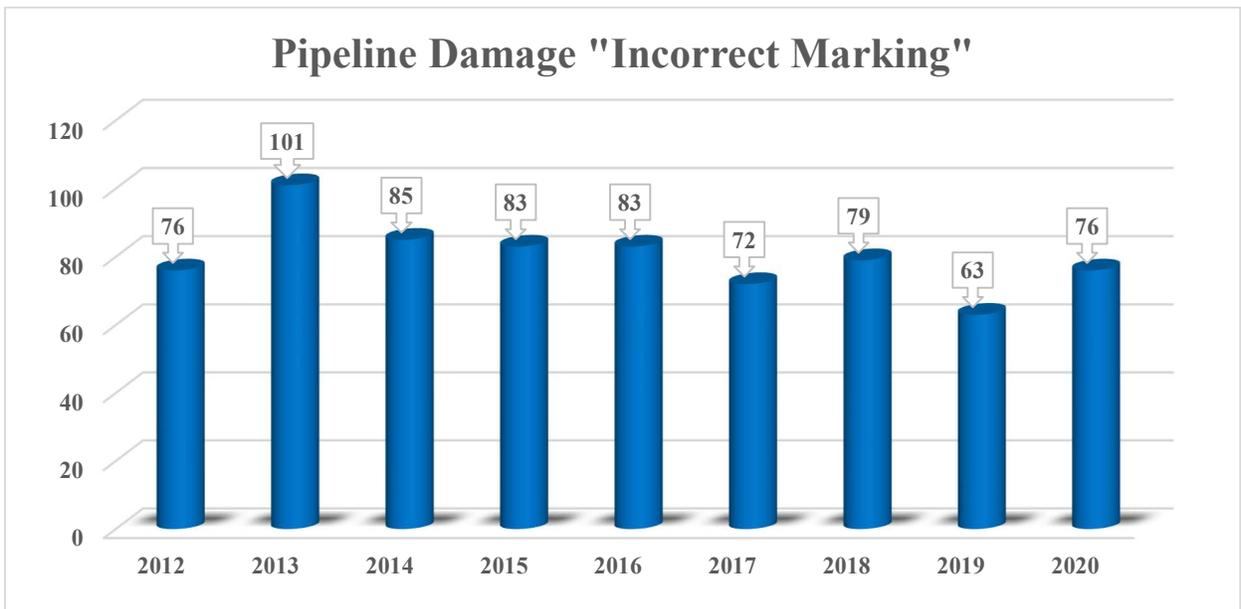


Figure 5. Pipeline Damage " Incorrect Marking"

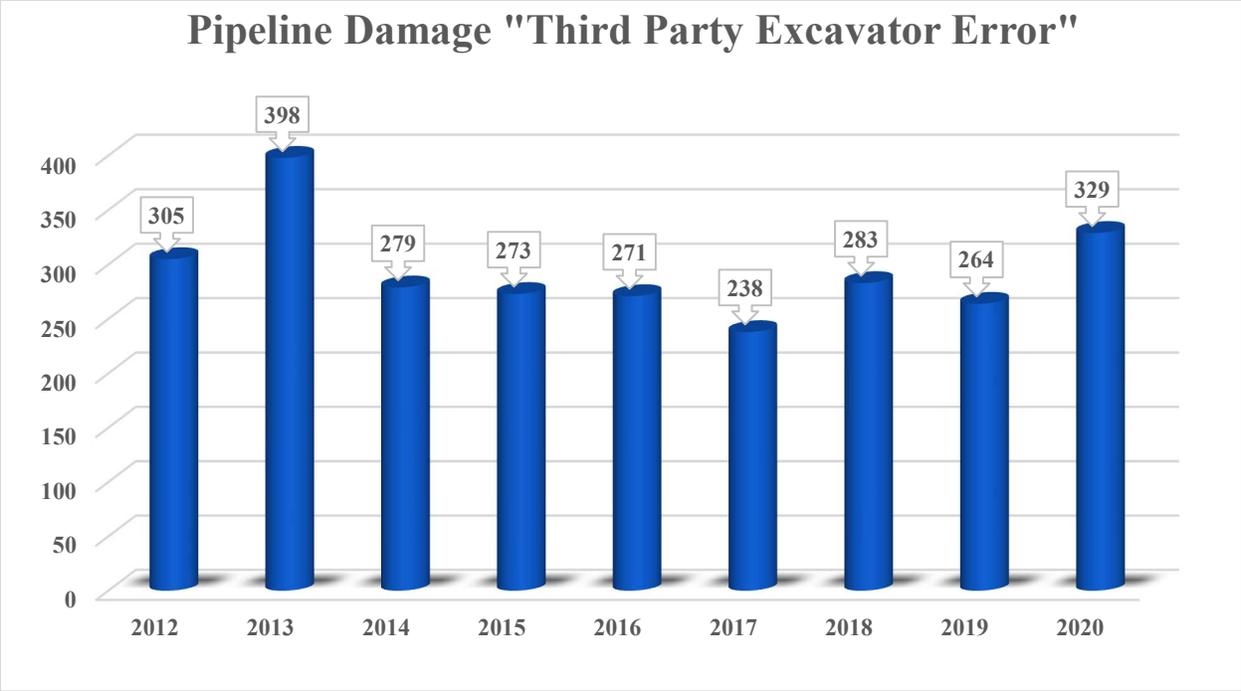


Figure 6. Pipeline Damage "Third Party Excavator Error"

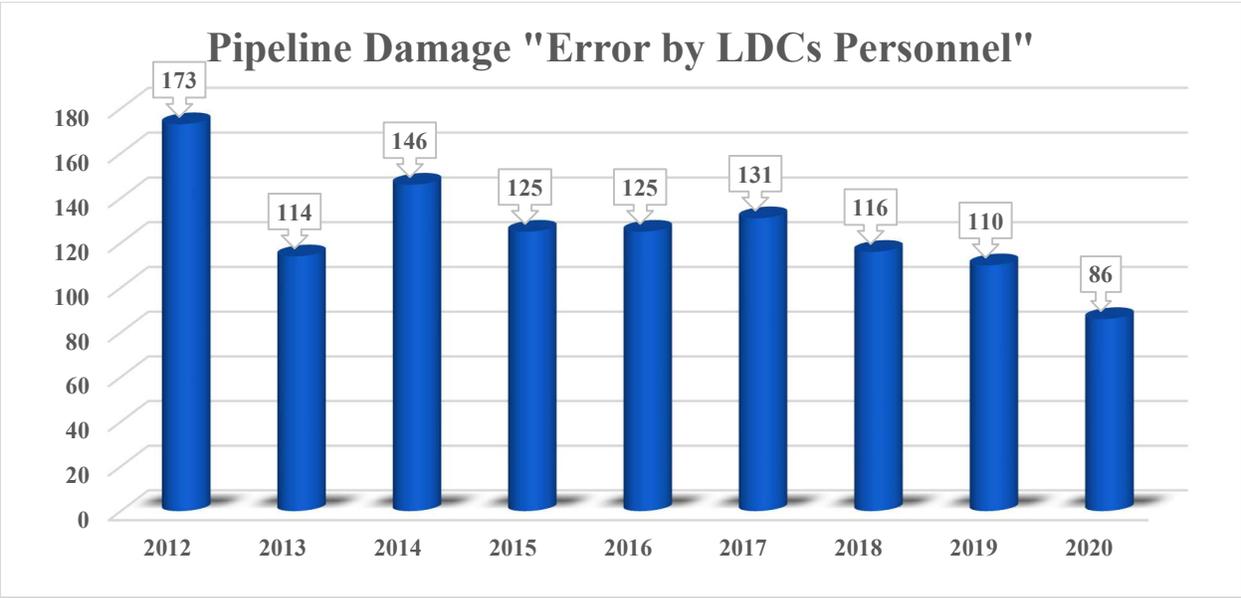


Figure 7. Pipeline Damage "Error by LDCs Personnel"

The next chart (Figure 8) shows the average number of pipelines damaged per 1,000 ticket requests. The graphic shows that the average of pipeline damaged per 1,000 tickets increased 0.01 in 2020 with respect to year 2019. However, this factor has decreased significantly over the years since the reporting started back in year 2012.

The number of excavation damage occurrences per 1,000 locate tickets is an established benchmark within the damage prevention industry and an important indicator of damage prevention program performance. This factor continues to be below 1 in year 2020.

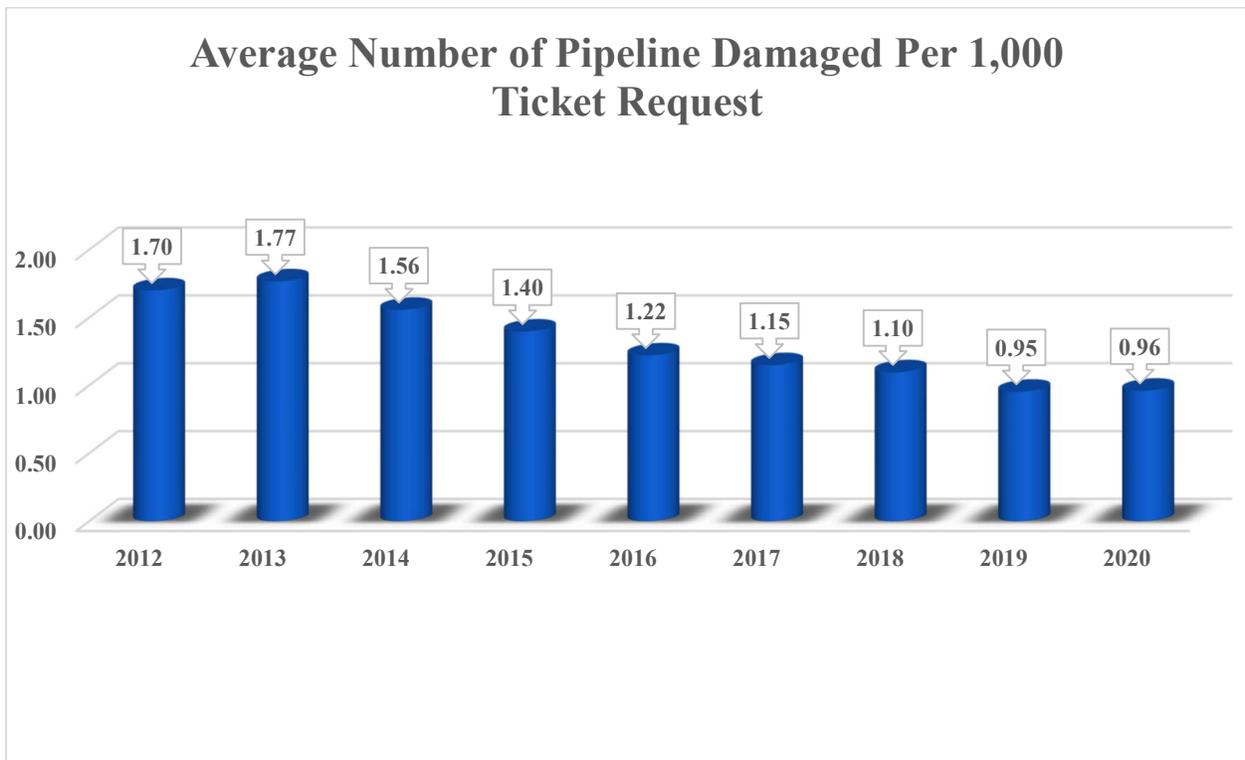


Figure 8. Average number of damaged pipelines per 1,000 tickets

7 RECOMMENDATIONS TO IMPROVE PIPELINE DAMAGE PROGRAMS

1. Efforts should include encouraging pipeline operators/excavators to wait for markings to be completed, to stay within the stated work area or to make a new notice if the original work area is extended and renew notices if marks deteriorate or if work will continue beyond one call ticket expiration.
2. Improve on-time locate metrics. When mark-outs are late, contractors incur in delays (downtime) and potentially added costs for demobilization, change in plans, etc. When these instances occur contractors must improve communication and inform AZOPS as soon as possible of these delays to prevent these situations.
3. Improve on-time locate metrics. All utility operators shall have enough qualified personnel to fulfill the AZ811 tickets requested to complete the markings in a timely manner per established requirements in the Underground Facilities Law.
4. Improve/Reduce damages due to No AZ811 notification by operators/excavators. Failure to provide notice of intent to excavate (No AZ811 ticket notification) is the second specific root cause of pipeline damages in Arizona.
5. As a best practice promote pot-holing and vacuum excavation within the pipeline industry. The excavation damages of natural gas pipeline include failure to pothole, maintain clearance, maintain marks and protect/support facilities, improper backfilling, and improper excavation practices.
6. Educate operators/excavators to reduce over-notifications to the Arizona 811 Center. Abuses of the one call system exacerbate issues with late locating and/or no response to one call tickets i.e. excavators repeatedly update locate tickets for which some or all the work has already been completed, marking of work areas larger than required.
7. Adopt new technologies to reduce damages by improving communications with the Arizona 811 Center to improve processes, locating, and excavating practices.
8. Underground facilities owners/Operators shall locate and track their abandoned underground facilities.
9. Operators shall continue to increase public awareness campaigns that can effectively reach multiple audiences with the AZ811 information.

10. Public outreach through mass media shall continue over the years to come to reach all audiences at the same time, making campaigns more efficient.
11. Operators shall make damage prevention training more easily accessible, relevant, and actionable. All utility owners including natural gas operators/excavators have limited knowledge about the Arizona Underground Facilities Law beyond the need to notify before beginning work.
12. Operators shall contact the AZOPS as soon as practicable when excavators are performing activities in violation of the Underground Facilities Law to respond in a timely manner, this will provide the AZOPS a better opportunity to educate these excavators.

8 CONCLUSION

For calendar year 2020, “3rd Party Excavator Error” continued to be the number one root cause of pipeline damages in the State of Arizona. The number two root cause was No AZ811 tickets, followed by LDC personnel’s error and incorrect marking of facilities.

In addition, “3rd Party Excavator Error” continues to be the main cause of pipeline damage by excavation; according to this analysis the number reported of pipeline damages was increased, representing a 20% increment in 2020. There were 264 cases reported in 2019 and 329 cases reported in 2020.

Data shows that 53,529 AZ811 tickets were generated in the state of Arizona in 2020, which represents a 7% increase. There were 714,582 AZ811 tickets received in 2019 and 768,111 tickets received in 2020.

Despite the underground facilities law enforcement and monies collected in 2020, AZOPS has the responsibility to improve this program in a continuous effort to strongly encourage gas operators and underground facility owners to inform AZOPS of underground facility damage in a timely manner.

The increase of AZ811 tickets called into the Arizona 811 Center is a good indicator that the public in general and operators within the State of Arizona are receiving the message to call 811 “before you dig”.

The AZOPS in conjunction with Arizona Locate Resolution Partnership (AZLRP) provide to gas pipeline operators and contractors/excavators the required training of the Underground Facilities Law to educate them to reduce the number of pipeline damages.

Although, there was increase of the pipeline damages in 2020 and the average number of pipeline damages per 1,000 ticket requests increased 0.01 representing 0.96; it is observed a positive trend in damage prevention and this may be attributed to the AZOPS proactive approach to enforcing Operator Qualification requirements and the Underground Facilities Law and to the operators engaging and implementing their damage prevention and public awareness programs.