

ARIZONA CORPORATION COMMISSION

Office of Pipeline Safety



2019

Damage Prevention Performance Report

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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.

In 2012, the Arizona Corporation Commission’s Office of Pipeline Safety (“AZOPS”) directed the Operators to submit a quarterly report 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 this report is to identify the leading cause of “pipeline hits” and to suggest improvement of identification and tracking of areas that have more “pipeline hits” which will be critical to gas pipeline safety.

For the analysis and development of this Damage Prevention Performance Report 2019, data information analyzed corresponded to (20) operators as shown in Table 1 below:

	Operator
1	Abbott Laboratories
2	Alliant Gas Arizona Propane LLC
3	APS Energy Services
4	Calpine Energy Services LP
5	City of Benson
6	City of Mesa
7	City of Safford
8	City of Willcox
9	Colorado City*
10	Copper Market Gas Incorporated
11	Duncan Rural
12	Gila Bend Operations LP
13	Graham County Utilities Incorporated
14	NUCOR Steel
15	Pimalco Incorporated
16	Plains LPG Services
17	Southwest Gas Corporation (SWG)
18	Swissport Fueling Incorporated
19	UniSource Energy Services (UniSource)
20	Zapco Energy Tactics Corporation

Table 1

*No data provided for the analysis

These 20 operators have a total combined pipeline length of 42,119 miles and 1,342,065 total number of gas services. It is important to note that this information data is derived from 2019 annual reports.

In addition, for transparency purposes one (1) small operator did not provide their damage prevention reports during 2019 and they were not included in the analysis. However, the numbers calculated herein would not significantly change due to the missing information data. Information contained within this report may be available upon data request.

METHOLOGY

The AZOPS gathered all reports and analyzed the data received by operators on a quarterly basis during calendar year 2019, Table 2 below shows a summary report for 2019.

2019 SUMMARY REPORT					
Miles of Pipelines	42,119				
No. of Services	1,342,065				
	2019				
	1st Q	2nd Q	3rd Q	4th Q	Total
AZ811 Tickets Received	160,776	189,673	190,578	173,555	714,582
Pipeline Damage Totals	135	169	189	188	681
Cause of Damage:					
No AZ811 Ticket	48	69	66	61	244
Incorrect Marking	11	10	20	22	63
2nd Party Damage	52	61	67	84	264
Error by LDCs Pers.	24	29	36	21	110
Average Number of Pipeline Damaged Per 1,000 Ticket Request	0.84	0.89	0.99	1.08	0.95

Table 2

Figure 1 below shows pipeline damage versus AZ811 tickets received during each quarter during 2019.

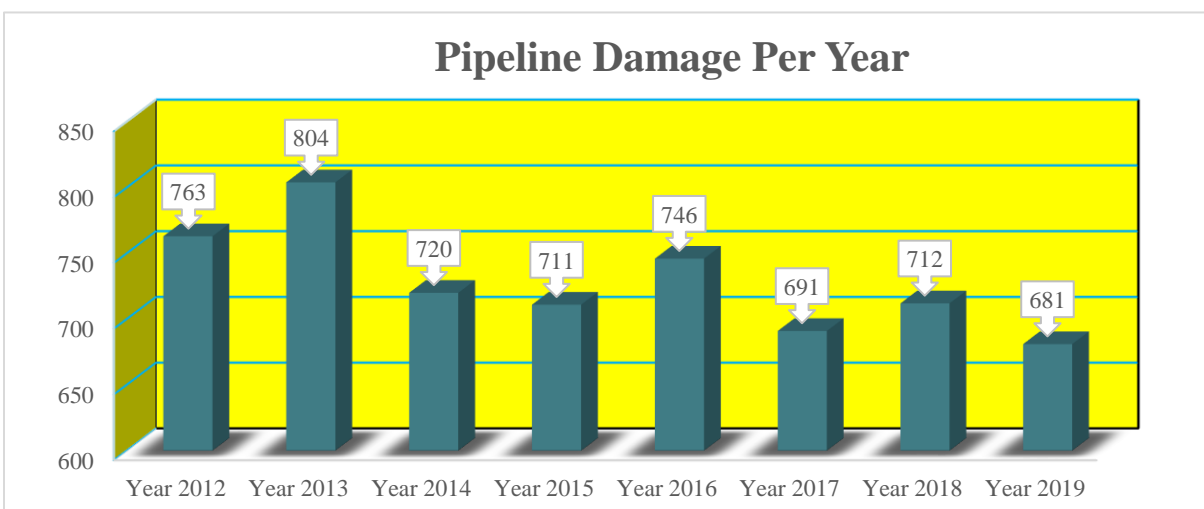


Figure 1

Figure 2 below show 681 pipeline hits/damages as the accumulative pipeline damage reported by operators during 2019, the leading cause of pipeline damage during 2019 continues to be 3rd Party Excavator Error, the second cause is No AZ811 Tickets, followed by Error by LDC's Personnel and Incorrect Marking being the last cause.

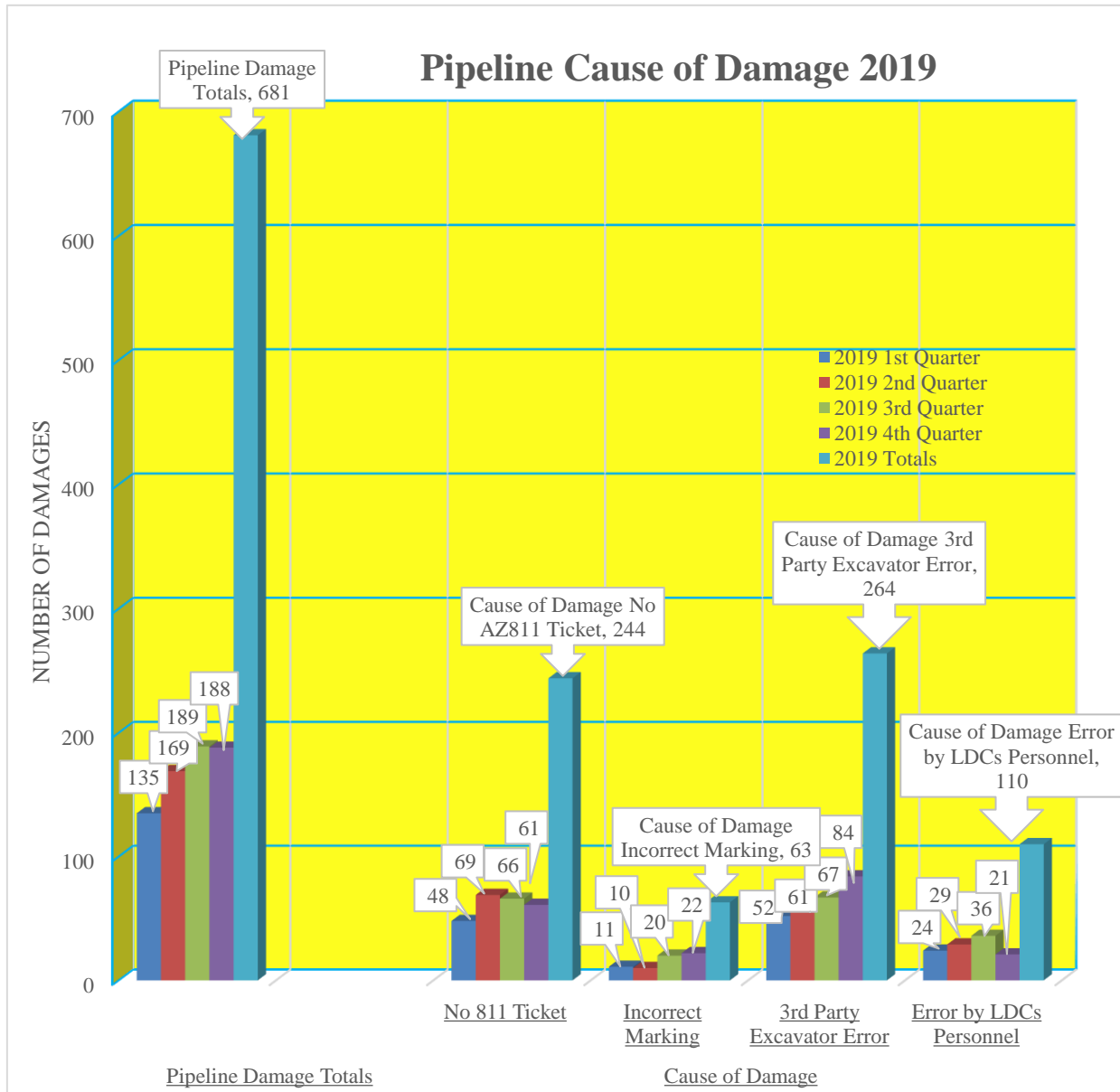


Figure 2

DATA SUMMARY

For the purpose of the data summary section, the information data in this analysis was gathered, analyzed and a comparison was established between years 2018 and 2019. However, some of the figures presented within the Damage Prevention Performance Report 2019 will show historical data from year 2012 through 2019.

From the analysis assessment the data shows that there was a 9% increase in AZ811 tickets generated for 2019 versus 2018. There were 714,582 AZ811 tickets received in 2019 and in 2018 there were 649,415 AZ811 tickets received.

The number of pipeline damages reported were less in 2019 by 5% in comparison to pipeline damages reported in 2018. The decrease on the number of pipeline damages is attributed to the following causes of pipeline damage activities “Incorrect Marking”, “Third Party Excavator Error” and “Error by LDCs Personnel” in year 2019.

Pipeline damages by excavation due to No AZ811 ticket increased 4%. There were 10 cases more in 2019 than in 2018. There were 244 cases reported during 2019.

Pipeline damages by excavation due to incorrect marking decreased in 2019. There were 79 cases in 2018 and 63 cases in 2019, which represents a reduction of pipeline damages related to this root cause of 25%.

Pipeline damages by excavation due to Third Party Excavator Error decreased by 7%. There were 283 cases in 2018 and 264 cases reported in 2019.

Pipeline damages by excavation due to operator or operator’s contractor error decreased from 2018 to 2019. There were 116 cases reported in 2018 and 110 cases in 2019.

Based on the data analyzed, the average number of pipeline damages due to excavation per 1,000 locate tickets decreased from 1.10 in 2018 to 0.95 in 2019.

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.

HISTORICAL DATA

The charts presented in this section are for general information purpose only, which show historical data from calendar year 2012 through 2019. The chart below (Figure 3) shows the trend of AZ811 tickets received by operators by year. There has been a significant increase since the reporting started in 2012 up to date.

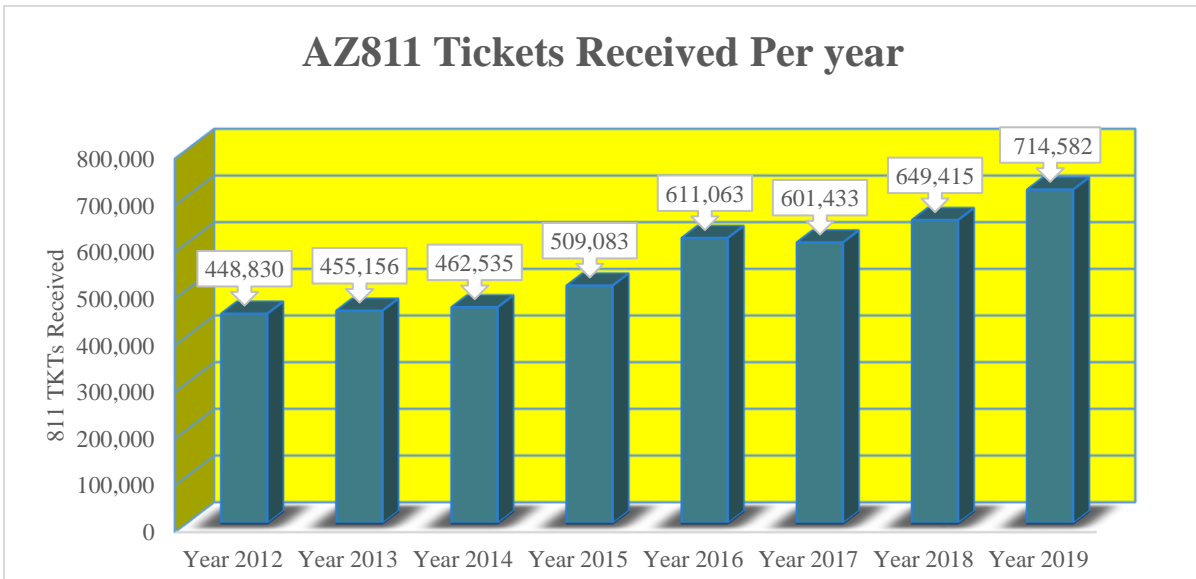


Figure 3

The following charts depict trends on the cause of pipeline damage classified into four root causes between the year 2012 and year 2019.

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

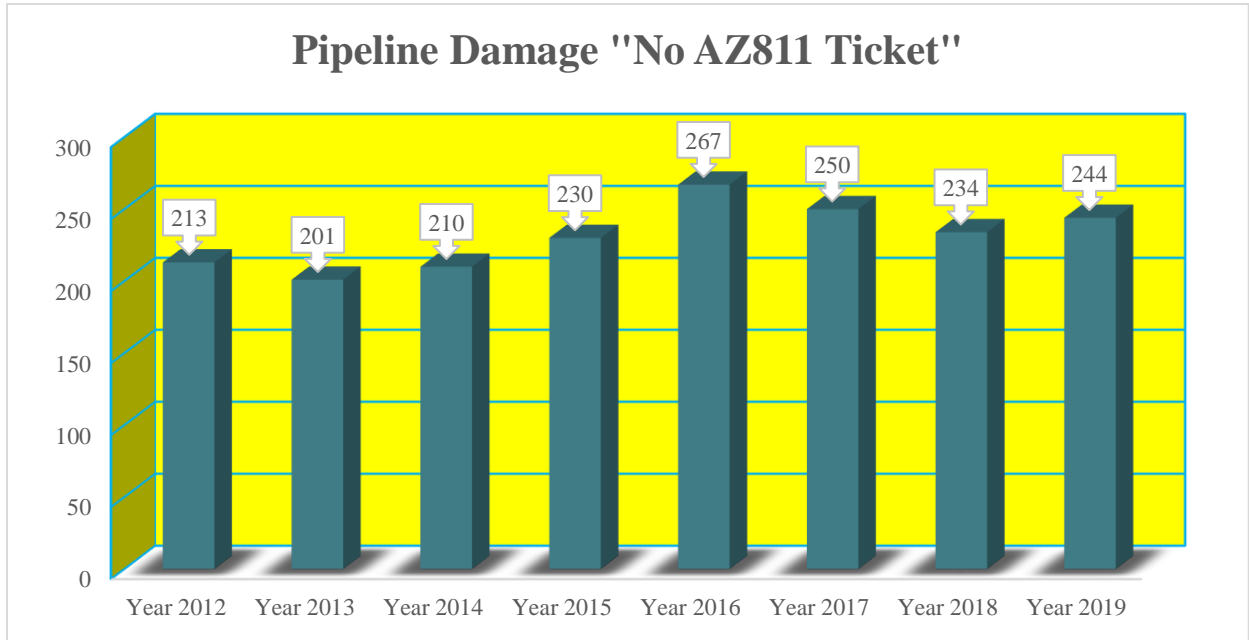


Figure 4

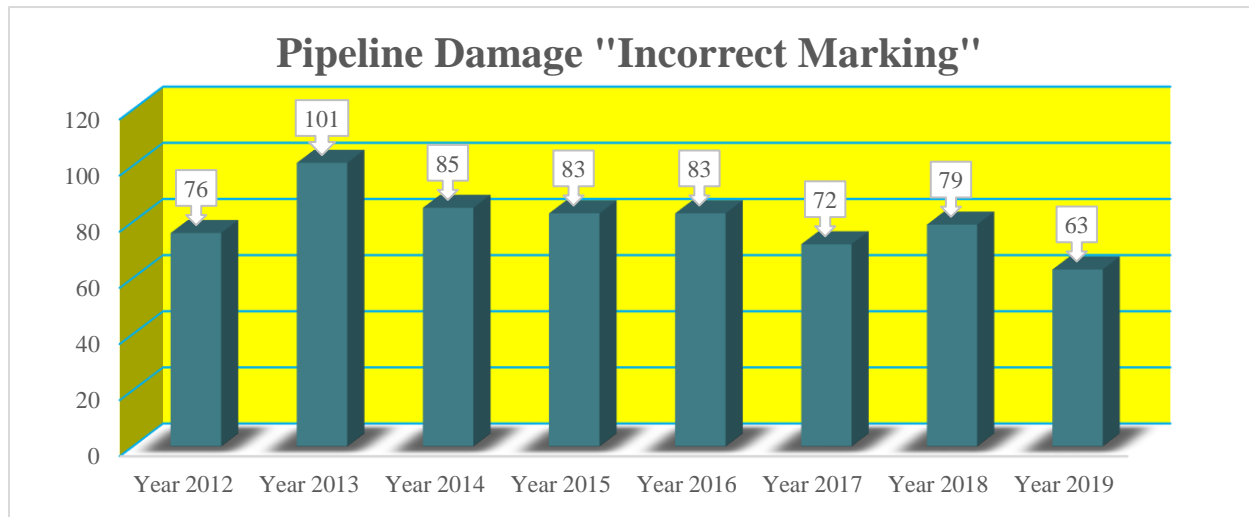


Figure 5

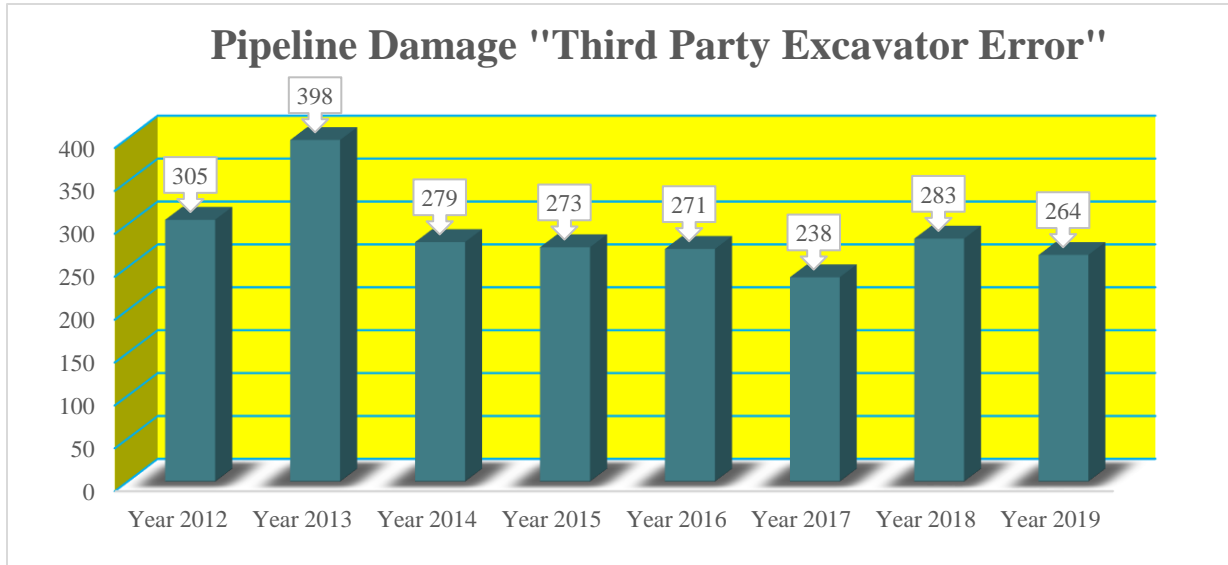


Figure 6

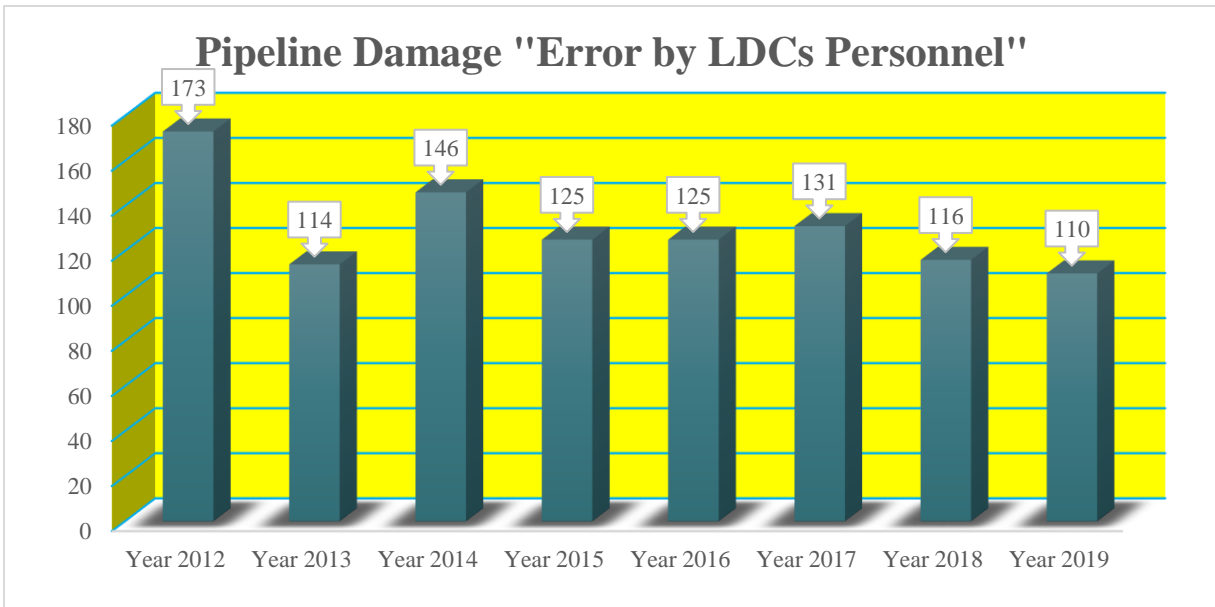


Figure 7

The chart below (Figure 8) shows the average of pipeline damaged per 1,000 ticket request trend has decreased significantly since the reporting started in 2012 to date. 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.

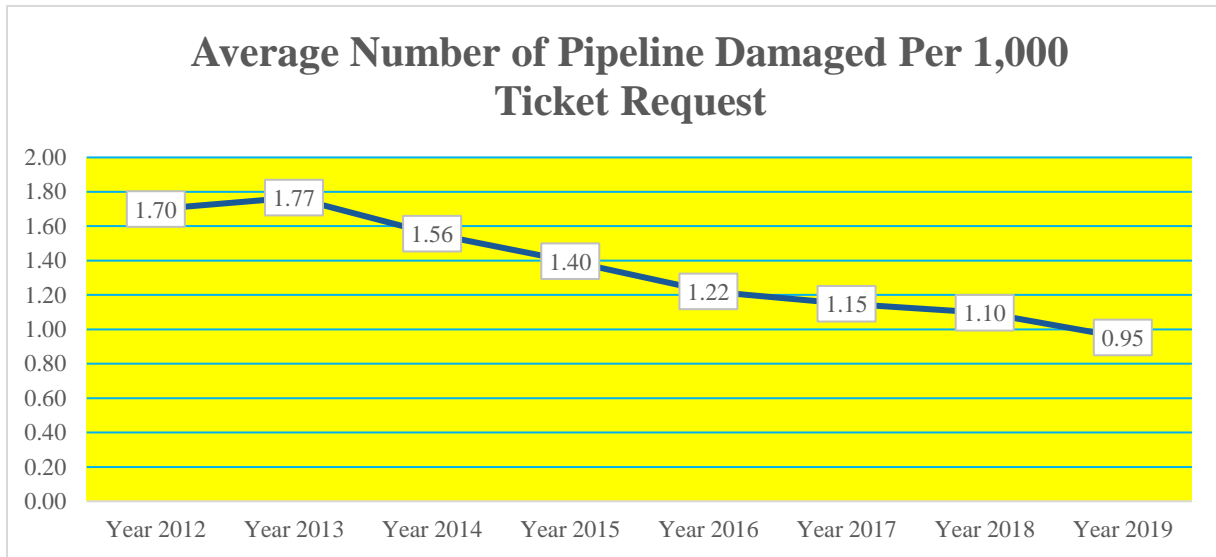


Figure 8

RECOMMENDATIONS TO IMPROVE 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 in order 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 in order 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.

CONCLUSION

For calendar year 2019, “3rd Party Excavator Error” was 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.

However, “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 less and represented a 7% decrease in 2019. There were 283 cases reported in 2018 and 264 cases were reported in 2019.

Data shows that there was a 9% increase in AZ811 tickets generated for 2019. There were 649,415 AZ811 tickets received in 2018 and 714,582 AZ811 tickets received in 2019.

As a result of pipeline damage in the State of Arizona, the AZOPS issued 33 notice of violations during 2019. The total amount collected for applicable fines was \$18,500.00 US dollars within this year, these fines were solely related to gas pipeline damages. Also, as a result of the notice of violations, there was a total of 289 people that received training through AZOPS underground facilities law and damage prevention DVD “Caution! Facilities Below”.

Despite the underground facilities law enforcement and monies collected in 2019, 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 in to the Arizona 811 Center and the reduction of 15 percent on the average number of pipeline damages per 1,000 ticket requests is a good indicator that the general public 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) provides to gas pipeline operators and excavators training about the Underground Facilities Law on a monthly basis in order to educate and reduce pipeline damages.

In addition, the decrease in damages is a positive trend and 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.