



# Nebraska State Fire Marshal

2019 Pipeline Seminar

---



# **Damage Prevention 2019**


---

## **Benefits**

- **Enhanced Public Safety**
- **Protect Pipelines and Facilities**
- **Decreased Excavation Damage**
- **Preservation of the Environment**
- **Improved Pipeline System Performance**
- **Improved Relationships with Affected Public**

# **Why Damage Prevention**

---



Each operator of a buried pipeline shall carry out a written program to prevent damage to that pipeline from excavation activities.

**49 CFR 192.614**

---

( (1) Include the identity, on a current basis, of persons who normally engage in excavation activities in the area in which the pipeline is located.

(2) Provides for notification of the public in the vicinity of the pipeline and actual notification of the persons identified in paragraph (c)(1) of this section of the following as often as needed to make them aware of the damage prevention program:

# **Damage Prevention Program**

## **49 CFR 192.614**

---

- (3) Provide a means of receiving and recording notification of planned excavation activities.
- (4) If the operator has buried pipelines in the area of excavation activity, provide for actual notification of persons who give notice of their intent to excavate of the type of temporary marking to be provided and how to identify the markings.
- (5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins

## **49 CFR 192.614 (Con't)**

---

6) Provide as follows for inspection of pipelines that an operator has reason to believe could be damaged by excavation activities:

(i) The inspection must be done as frequently as necessary during and after the activities to verify the integrity of the pipeline; and

(ii) In the case of blasting, any inspection must include leakage surveys

**49 CFR 192.614 (Con't)**

---

## **Investigation of Failures**

Each operator shall establish procedures for analyzing accidents and failures, including the sections of failed facility or equipment for laboratory examination, where appropriate, for the purpose of determining the cause of the failure and minimizing the possibility of recurrence

# **49 CFR 192.617**

---



- 196.101 What is the purpose and scope of this subpart?
- This subpart prescribes the minimum requirements that excavators must follow to protect pipelines subject to PHMSA or State pipeline safety regulations from excavation [refers to excavation activities as defined in 49 CFR 192.614]

# 49 CFR 196.101

---

- 196.103 What must an excavator [means any person or legal entity, public or private, proposing to or engaging in excavation] do to protect underground pipelines from excavation-related damage?
- Prior to and during excavation activity, the excavator must: (a) Use an available one-call system before excavating to notify operators of underground pipeline facilities of the timing and location of the intended excavation;

# 49 CFR 196.103

---

- (b) If underground pipelines exist in the area, wait for the pipeline operator to arrive at the excavation site and establish and mark the location of its underground pipeline facilities before excavating;
- (c) Excavate with proper regard for the marked location of pipelines an operator has established by taking all practicable steps to prevent excavation damage to the pipeline;
- (d) Make additional use of one-call as necessary to obtain locating and marking before excavating to ensure that underground pipelines are not damaged by excavation.

# 49 CFR 196.103

---

- 196.107 What must an excavator do if a pipeline is damaged by excavation activity?
- If a pipeline is damaged in any way by excavation activity, the excavator must promptly report such damage to the pipeline operator, whether or not a leak occurs, at the earliest practicable moment following discovery of the damage.

# **49 CFR 196.107**

---

- 196.109 What must an excavator do if damage to a pipeline from excavation activity causes a leak where product is released from the pipeline?
- If damage to a pipeline from excavation activity causes the release of any PHMSA regulated natural and other gas or hazardous liquid, the excavator must promptly report the release to appropriate emergency response authorities by calling the 911 emergency telephone number.

# 49 CFR 196.109

---

- 196.111 What if a pipeline operator fails to respond to a locate request or fails to accurately locate and mark its pipeline?
- PHMSA may enforce existing requirements applicable to pipeline operators, including those specified in 49 CFR 192.614 and 195.442 and 49 U.S.C. § 60114 if a pipeline operator fails to properly respond to a locate request or fails to accurately locate and mark its pipeline.

# 49 CFR 196.111

---

- **Nebraska Attorney General'**
- **Effective, balanced enforcement reduces excavation damages to pipelines**
- **Enforcement responsibility is inherently a state responsibility**
- **Enforcement is only one aspect of effective DP programs (see the “nine elements”)**

# **Enforcement**

---

- **Company Commitment**
- **Ticket Handling Processes**
- **Effective Procedures**
- **Operator Qualification Program**
- **Investigating Root Cause/**
- **Root Cause/Statistics**
- **Outreach**
  - **Damage Prevention Program**
    - **Excavator and Public Education**

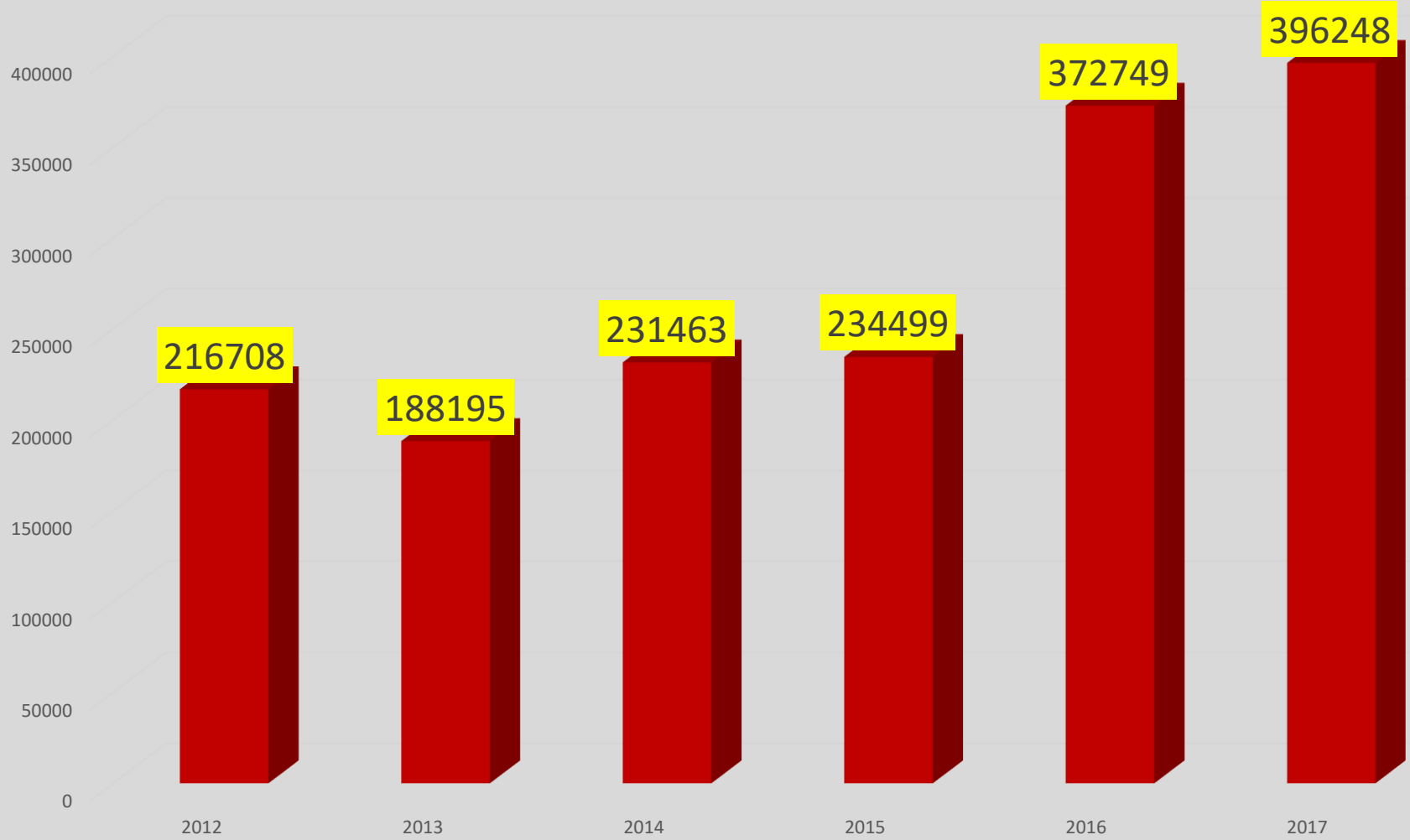
# **Success Factors**

---



2017			2016			2015			2014			2013			2012		
Number of Excavation Locate tickets	Number of Excavation Damages reported	Excavation Damage per 1000 locates	Number of Excavation Locate tickets	Number of Excavation Damages reported	Excavation Damage per 1000 locates	Number of Excavation Locate tickets	Number of Excavation Damages reported	Excavation Damage per 1000 locates	Number of Excavation Locate tickets	Number of Excavation Damages reported	Excavation Damage per 1000 locates	Number of Excavation Locate tickets	Number of Excavation Damages reported	Excavation Damage per 1000 locates	Number of Excavation Locate tickets	Number of Excavation Damages reported	Excavation Damage per 1000 locates
258818	440	1.7000363	241901	305	1.26	104253	233	2.23	94292	227	2.41	81982	282	3.44	86768	258	2.97
104656	113	1.0797279	94000	190	2.02	96129	189	1.97	104999	217	2.07	75804	260	3.43	99050	176	1.78
17450	40	2.2922636	21846	26	1.19	19467	45	2.31	17096	38	2.22	15272	61	3.99	16015	55	3.43
3449	5	1.4496956	3541	3	0.85	3418	5	1.46	3224	6	1.86	3820	11	2.88	4630	14	3.02
3678	9	2.4469821	3251	9	2.77	3699	5	1.35	3726	12	3.22	3119	9	2.89	3082	13	4.22
2084	6	2.8790787	1845	11	5.96	1929	6	3.11	2342	7	2.99	2370	13	5.49	1951	4	2.05
1812	5	2.7593819	2204	3	1.36	1690	7	4.14	1312	2	1.52	1625	2	1.23	1307	4	3.06
718	3	4.178273	696	0	0.00	818	3	3.67	793	2	2.52	976	0	0.00	501	0	0.00
757	2	2.6420079	1049	3	2.86	944	1	1.06	1016	1	0.98	783	4	5.11	716	2	2.79
946	0	0	679	0	0.00	487	0	0.00	391	0	0.00	494	1	2.02	494	1	2.02
398	2	5.0251256	409	3	7.33	386	3	7.77	511	2	3.91	776	2	2.58	523	3	5.74
284	0	0	200	2	10.00	183	1	5.46	139	0	0.00	174	1	5.75	142	0	0.00
214	1	4.6728972	174	1	5.75	176	0	0.00	244	0	0.00	133	0	0.00	482	0	0.00
210	0	0	173	0	0.00	218	0	0.00	193	0	0.00	216	0	0.00	158	0	0.00
121	0	0	136	0	0.00	125	0	0.00	169	0	0.00	102	1	9.80	111	0	0.00
205	0	0	193	0	0.00	143	0	0.00	93	1	10.75	191	1	5.24	139	0	0.00
159	0	0	133	0	0.00	161	0	0.00	146	0	0.00	148	1	6.76	162	0	0.00
146	0	0	146	0	0.00	147	0	0.00	375	0	0.00	160	0	0.00	157	0	0.00
143	0	0	171	0	0.00	124	0	0.00	402	3	7.46	50	0	0.00	320	1	3.13
1	0	0	2	0	0.00	2	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
0	0	#DIV/0!	0	0	#DIV/0!	0	0	0.00	0	0	0	0	0	0	0	0	0.00

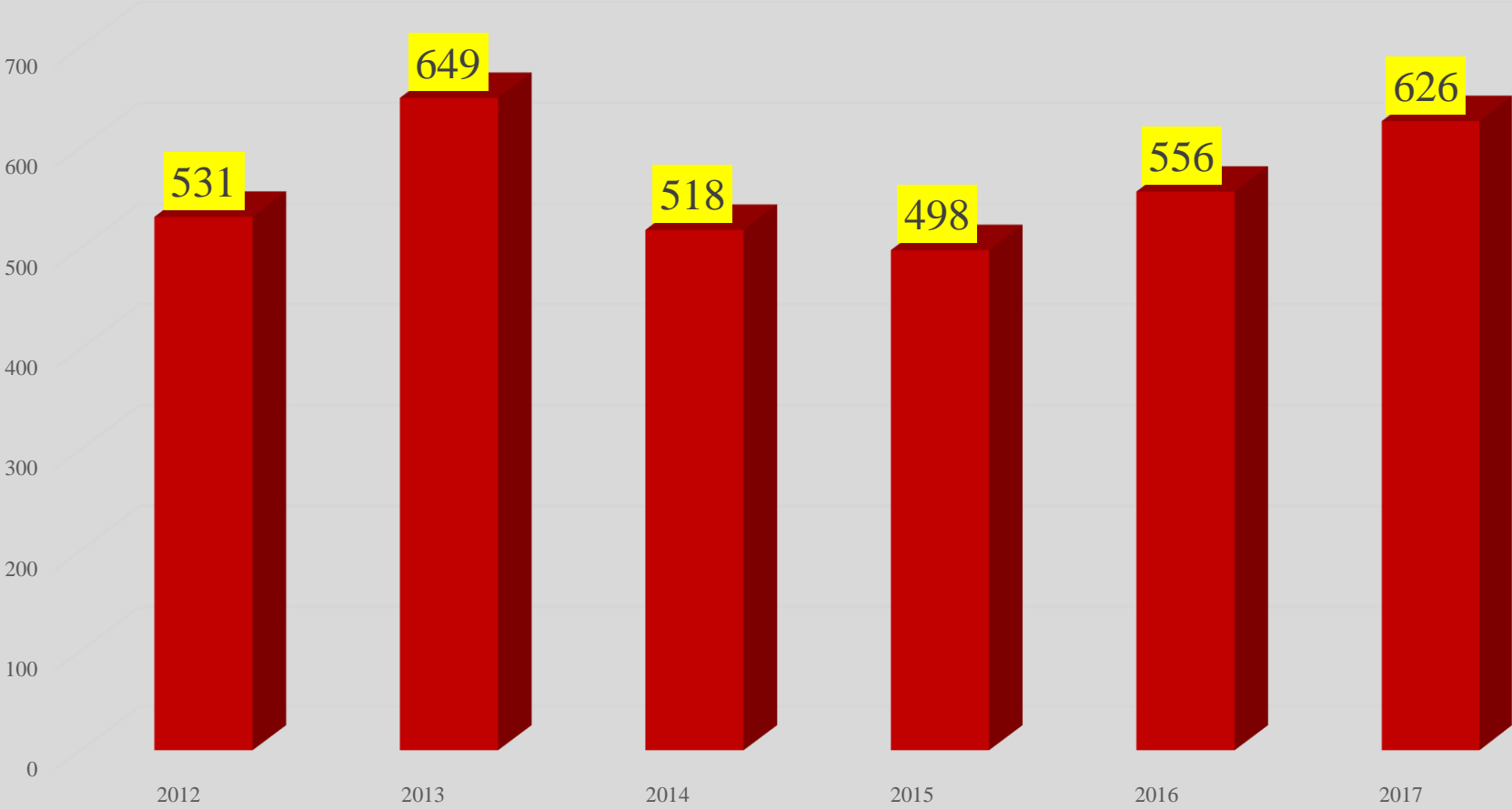
2012 thru 2017



# Number of Locate Tickets

---

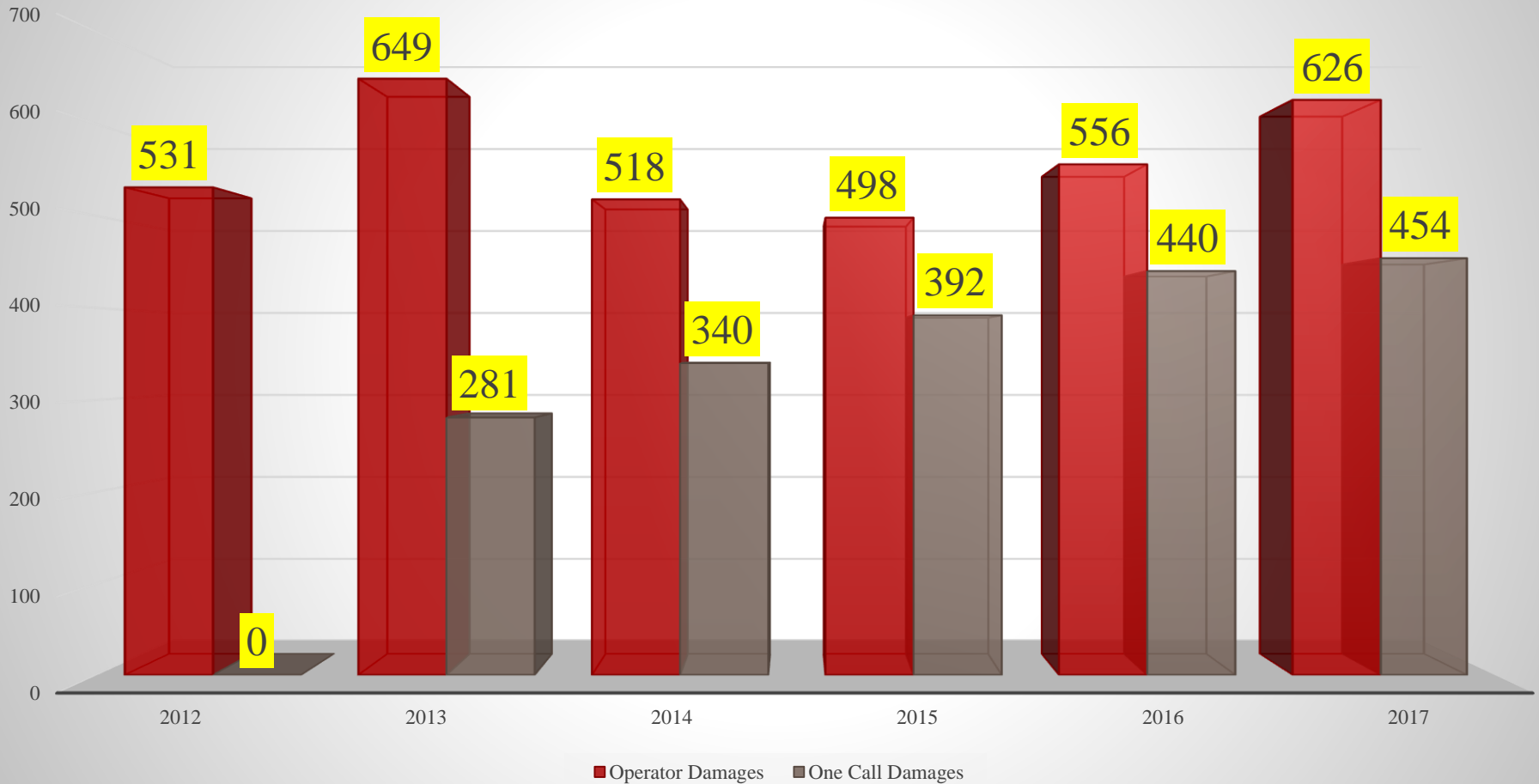
# Annual Report Damages



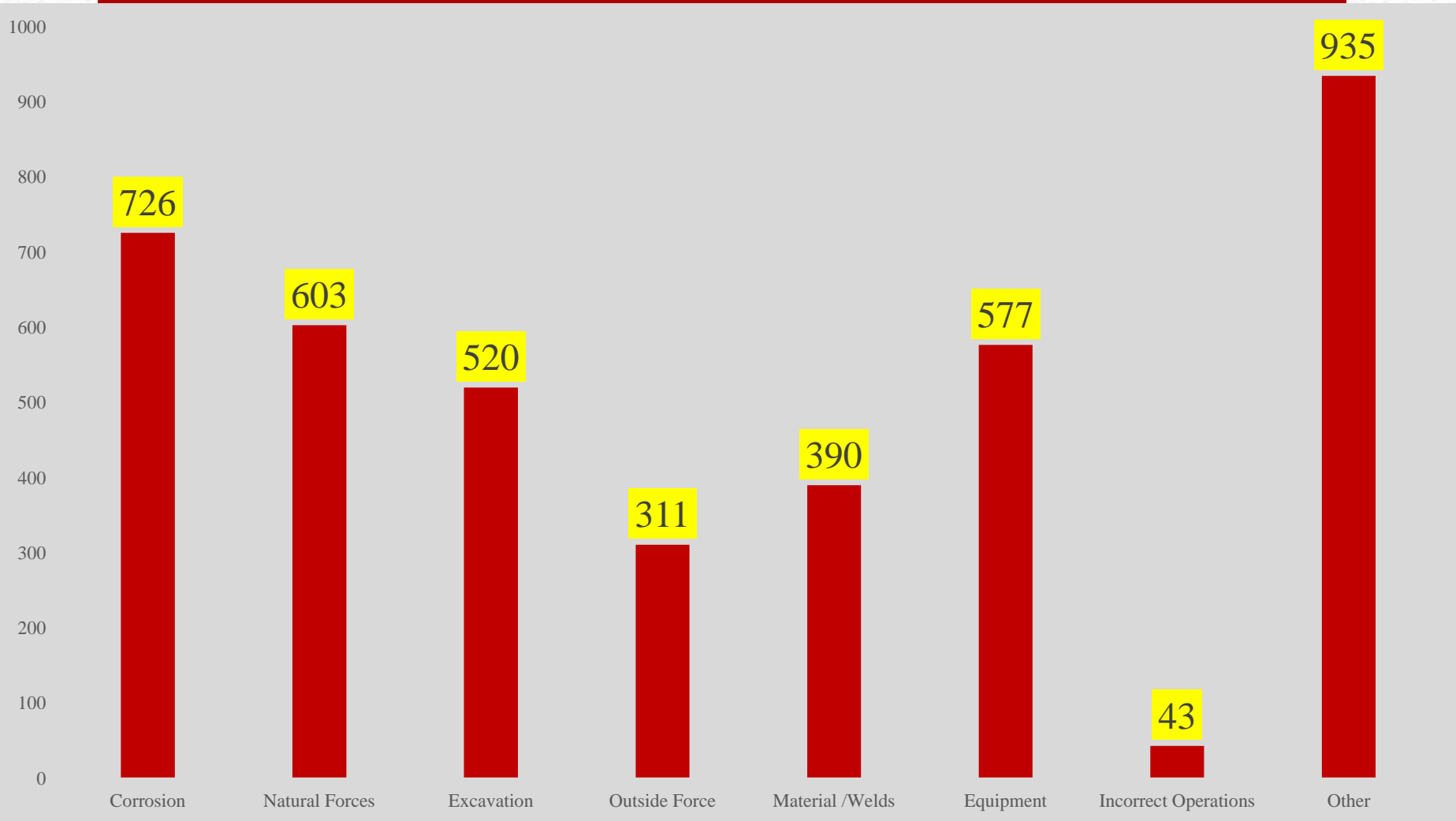
**2012 thru 2017 Damages**

---

## Annual Report vs One Call Center

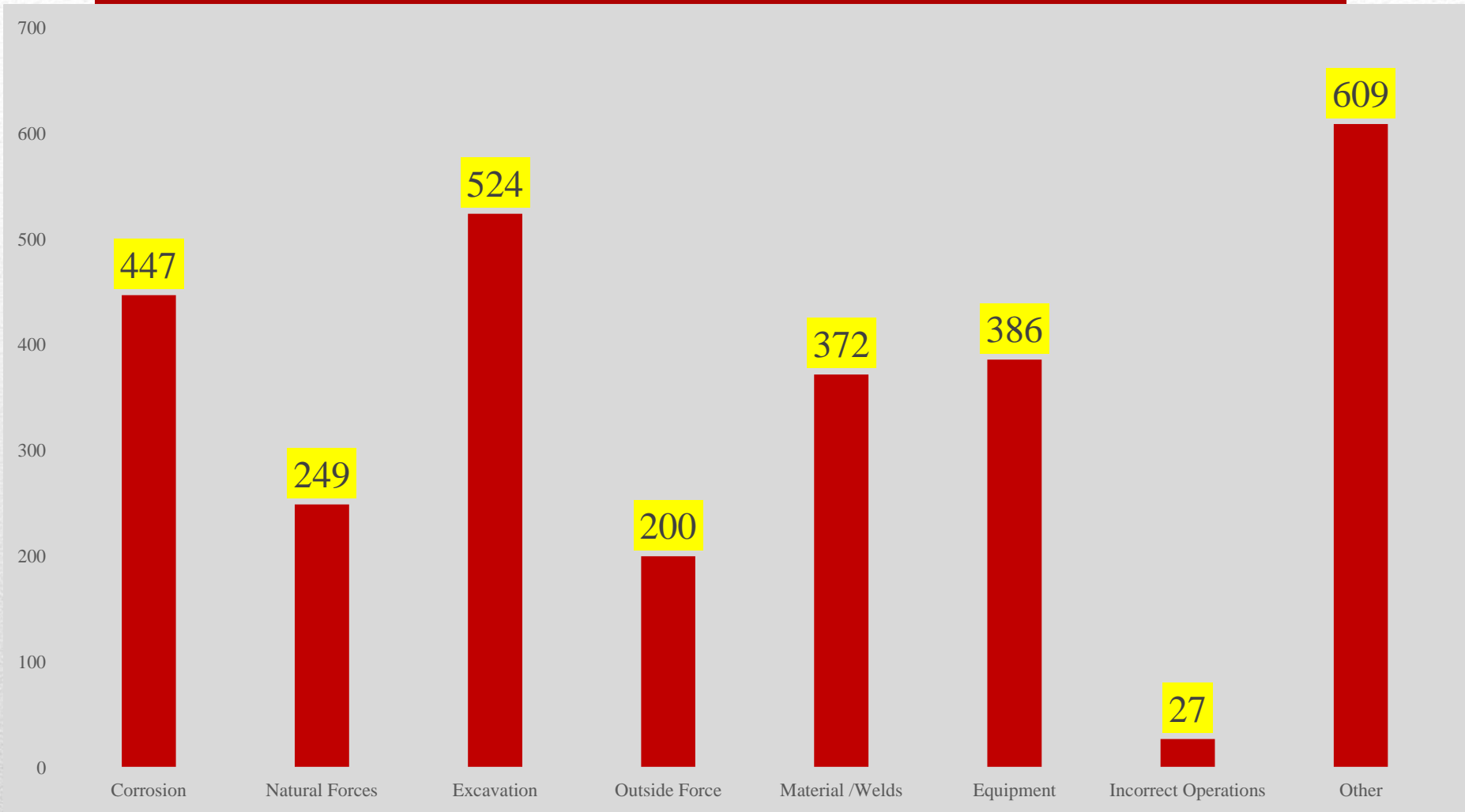


# 2013 thru 2017 Excavation



# 2015 Leak Causes

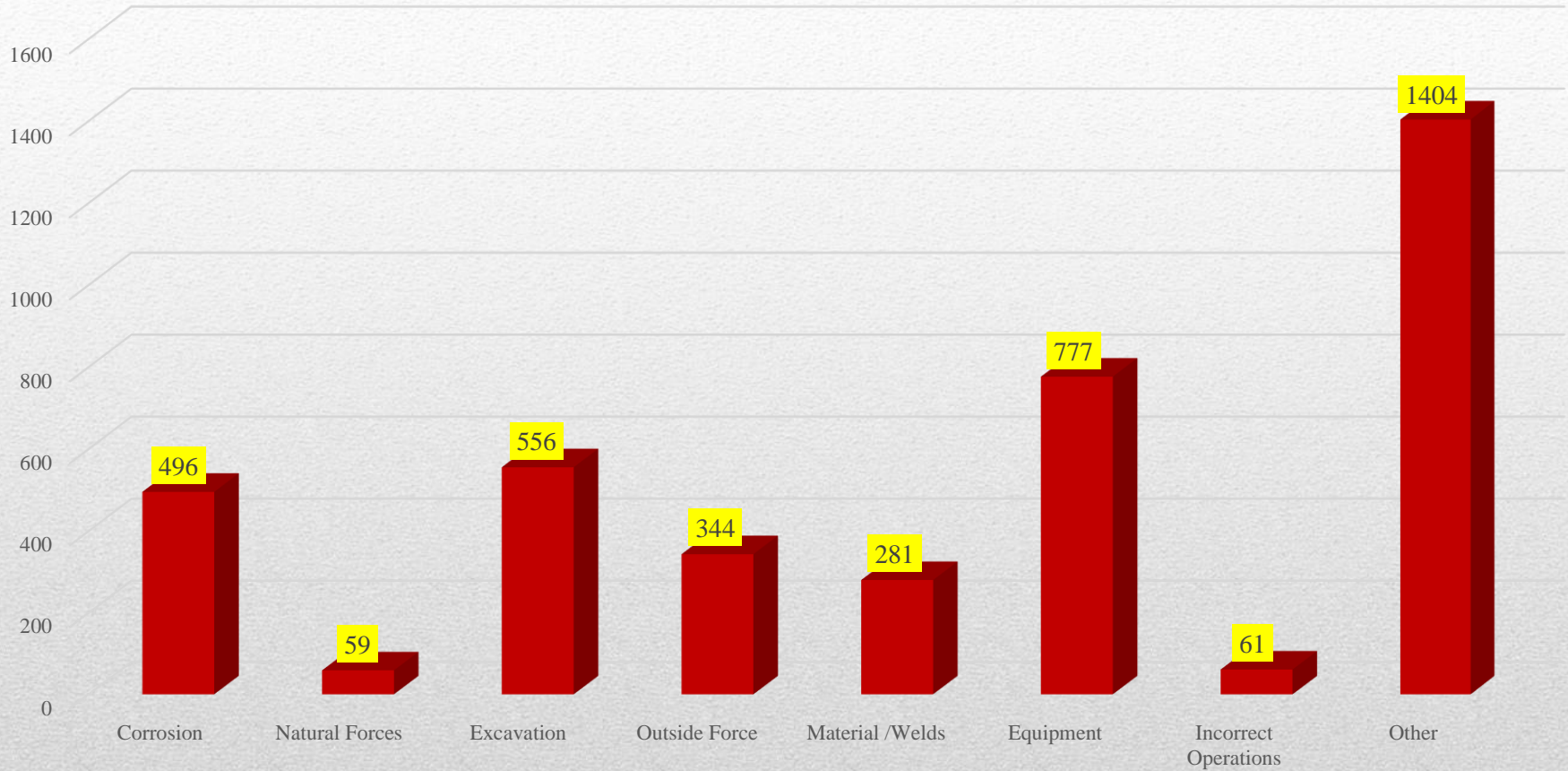
---



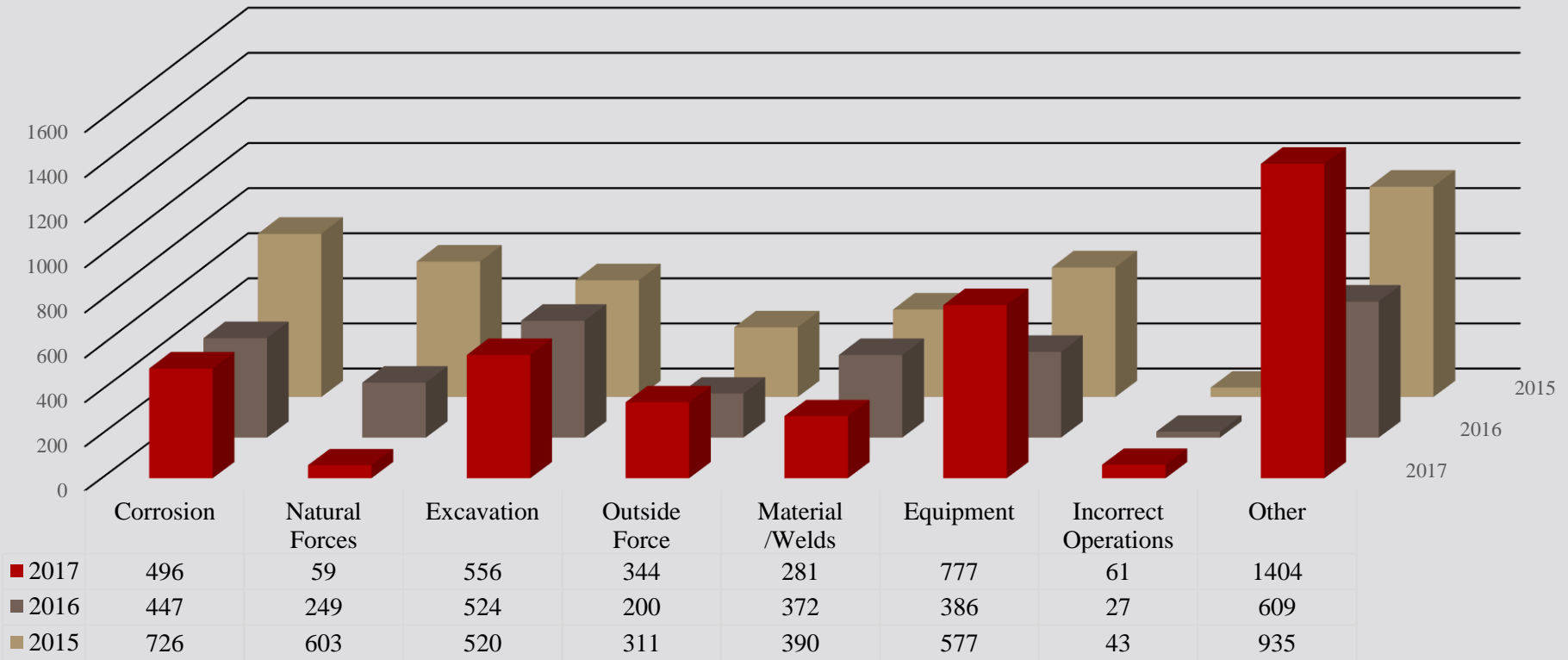
# 2016 Leak Causes

---

2017



# 2017 Leak Causes



# Leak Causes Comparative





R. THORPE CO.

### PIPE PIT GAGE

(PAT 1,979,912)

**USEFUL FORMULAS**  
 AREA =  $0.7854 \times D^2$   
 CIRCUM =  $3.1416 \times D$   
 SURFACE =  $3.1416 \times DXL$   
 PRESSURE =  $\frac{2ST}{D}$

S = FIBER STRESS  
 T = WALL THICKNESS  
 D = PIPE DIAMETER  
 P = PRESSURE  
 L = LENGTH

1 U.S. GAL. = 231 CU INS.  
 1 U.S. GAL. = 8.33 LBS. - WATER  
 1 U.S. GAL. = .83 IMPERIAL GAL.  
 7.48 U.S. GAL. = 1 CUBIC FOOT  
 42 U.S. GAL. = 1 BARREL

1 CU. FT AIR  
 = 0.0809 LBS

#### LINE PIPE THICKNESS STANDARD

3"	— .300	4"	— .216
4"	— .337	6"	— .280
6"	— .432	8"	— .322
8"	— .500	10"	— .365
		12"	— .375





0001  
001 8111-580029  
001 8111-580029  
APR 18 2013 13:18:1924  
001 8111-580029



21  
20  
19  
18  
17  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1  
16  
15  
14  
13  
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1



**M  
A  
R  
K**



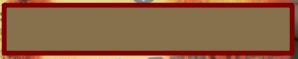
**D  
A  
M  
A  
G  
E**



12 6 0 6 12 18

**CAUTION**

**GAS  
PIPELINE**



**PUBLIC SERVICE  
COMPANY**





























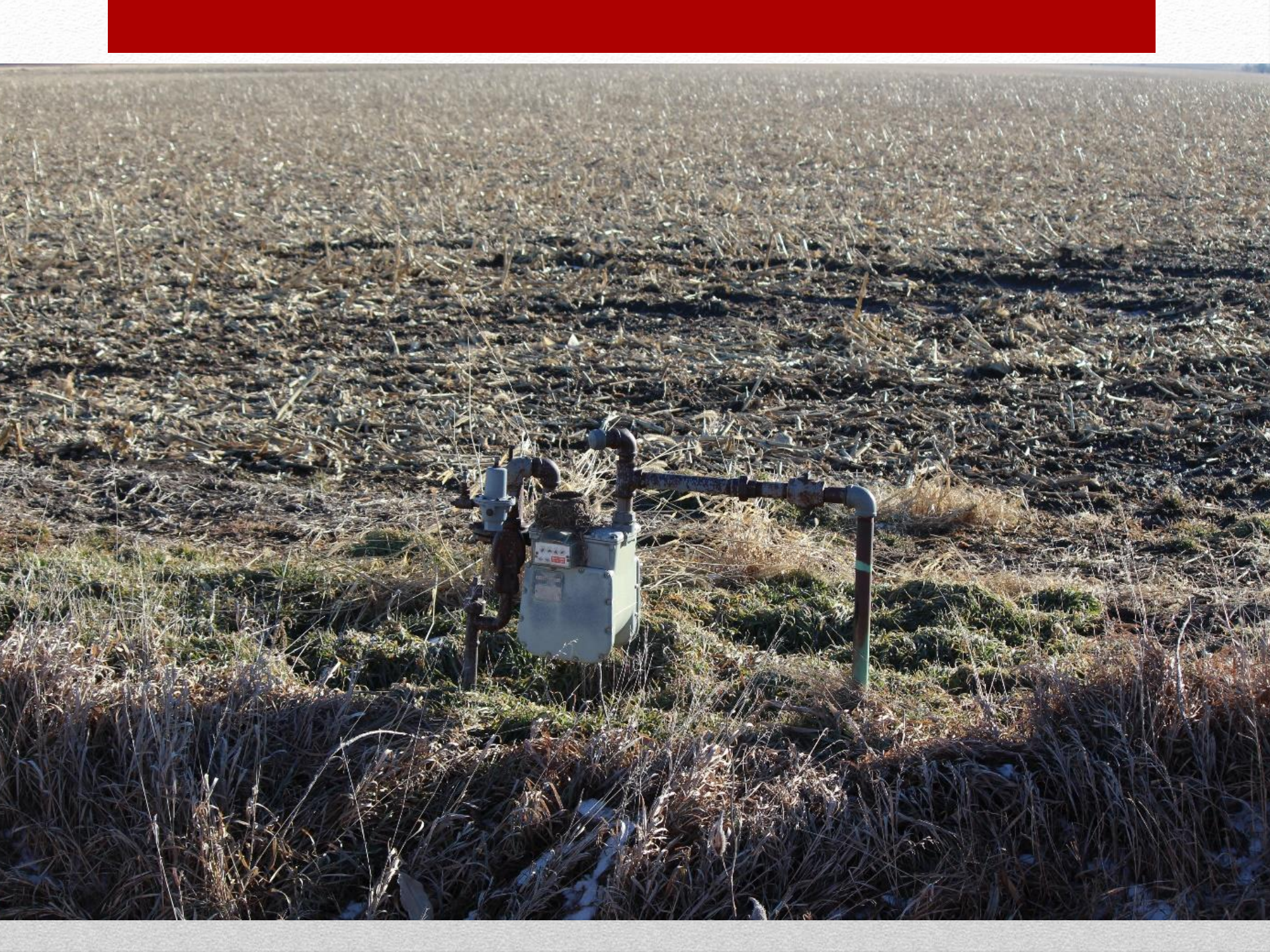
















REPORT TO THE  
STATE OF  
NEW YORK  
DEPARTMENT OF  
ENVIRONMENTAL  
CONSERVATION  
DIVISION OF  
ELECTRICITY  
AND POWER









**WARNING**  
**GAS PIPELINE**  
DISTRICT REGULATOR STATION NO.

**CAUTION**  
NO SMOKING,  
MATCHES, OR  
OPEN LIGHTS.

CAUTION  
GAS PIPELINE  
DO NOT REMOVE  
OR ALTER  
THIS SIGN





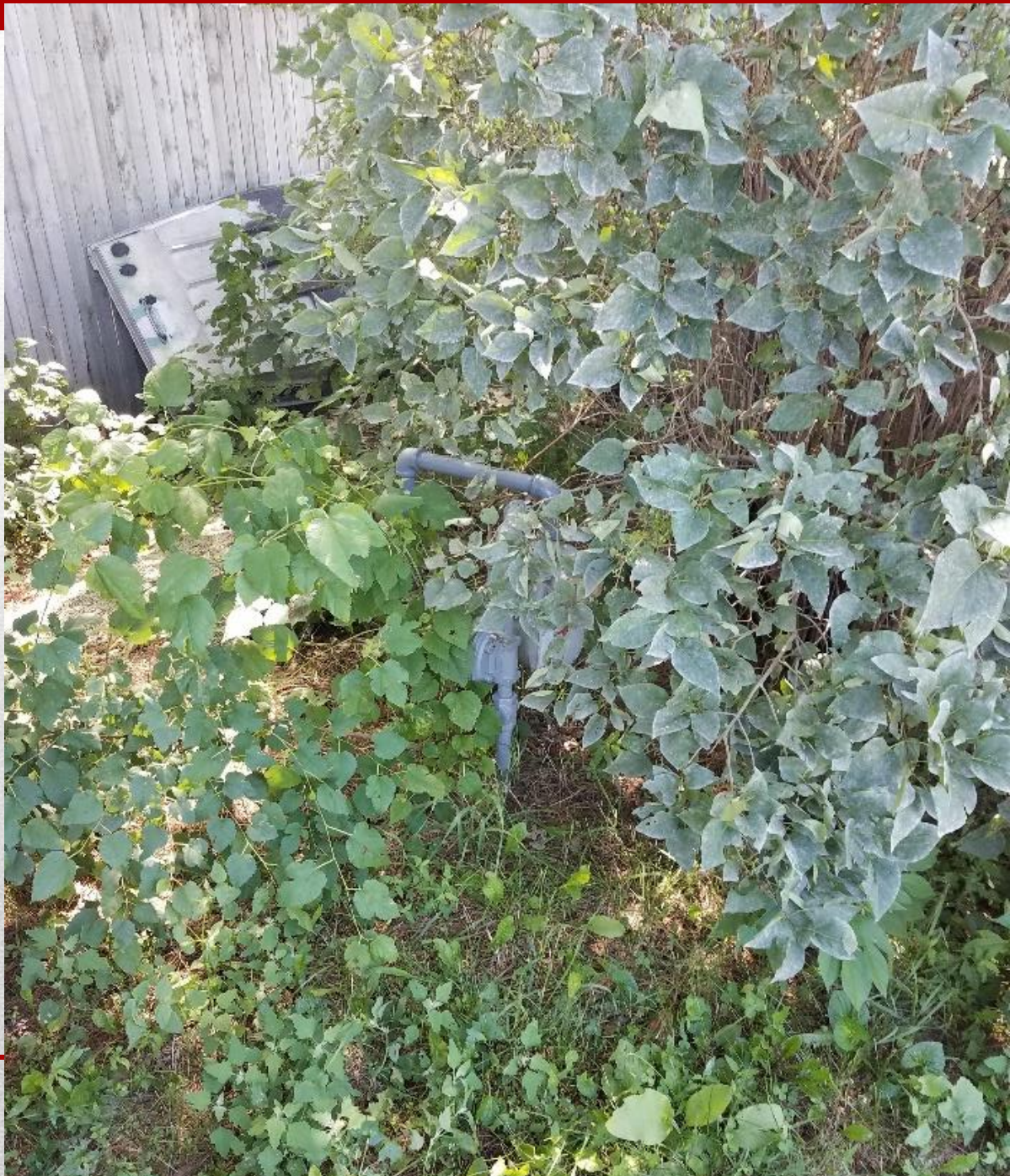
































16 inch Transmission Pipeline  
Operating at 650 psi

## **76-2319. Board of directors; rules and regulations; selection of vendor.**

(1) The center shall be governed by a board of directors who shall oversee operation of the center pursuant to rules and regulations adopted and promulgated by the State Fire Marshal. The board of directors shall also establish a competitive bidding procedure to select a vendor to provide the notification service, establish a procedure by which members of the center share the costs of the center on a fair, reasonable, and nondiscriminatory basis, and do all other things necessary to implement the purpose of the center. Any agreement between the center and a vendor for the notification service may be modified from time to time by the board of directors, and any agreement shall be reviewed by the board of directors at least once every three years, with an opportunity to receive new bids if desired by the board of directors.

# **One-Call Notification System Act.**

---

(2) The rules and regulations adopted and promulgated by the State Fire Marshal may provide for:

- (a) Any requirements necessary to comply with United States Department of Transportation programs;
- (b) The qualifications, appointment, retention, and composition of the board of directors; and
- (c) Best practices for the marking, location, and notification of proposed excavations which shall govern the center, excavators, and operators of underground facilities.

(3) Any rule or regulation adopted and promulgated by the State Fire Marshal pursuant to subdivision (2)(c) of this section shall originate with the board of directors.

# **One-Call Notification System Act.**

---

## **76-2325. Violations; civil penalty.**

Any person who violates the provisions of section [76-2320](#), [76-2321](#), [76-2322](#), [76-2323](#), [76-2326](#), [76-2330](#), or [76-2331](#) shall be subject to a civil penalty as follows:

(1) For a violation related to a gas or hazardous liquid underground pipeline facility OR A FIBER OPTIC TELECOMMUNICATIONS FACILITY, an amount not to exceed ten thousand dollars for each violation for each day the violation persists, up to a maximum of five hundred thousand dollars; and

(2) For a violation related to any other underground facility, an amount not to exceed FIVE THOUSAND DOLLARS FOR EACH DAY THE VIOLATION PERSISTS, UP TO A MAXIMUM OF FIFTY THOUSAND DOLLARS.

An action to recover a civil penalty shall be brought by the Attorney General or a prosecuting attorney on behalf of the State of Nebraska in any court of competent jurisdiction of this state. The trial shall be before the court, which shall consider the nature, circumstances, and gravity of the violation and, with respect to the person found to have committed the violation, the degree of culpability, the absence or existence of prior violations, whether the violation was a willful act, any good faith attempt to achieve compliance, and such other matters as justice may require in determining the amount of penalty imposed. All penalties shall be remitted to the State Treasurer for distribution in accordance with Article VII, section 5, of the Constitution of Nebraska.

# **One-Call Notification System Act.**

---

- Damage Prevention Safety Education Course
  - March 7<sup>th</sup> North Platte NWE
  - June 6<sup>th</sup> Kearney BHE
  - September 5<sup>th</sup> Alliance BHE
  - November 7<sup>th</sup> Omaha Fire Station 71
- Statewide Stakeholder Meetings
- Nebraska811 Sponsored Events
- CGN Excavator Safety Summit
- One Call Board of Directors
- Nebraska State Fire Marshal Office

# Resources

---





- **Fault vs Responsibility**

---



QUESTIONS?  
COMMENTS?  
CONCERNS?

