CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.

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September 29, 2023

Oregon Public Utility Commission
Attn: Filing Center
201 High Street S.E., Suite 100
Salem, OR 97301-3398

Re: **UM 1899, Cascade Natural Gas Corporation's System Safety Plan**

Cascade Natural Gas Corporation (Cascade or Company) submits its annual System Safety Plan in compliance with Commission Order No. 17-084, entered March 6, 2017. The Order requires natural gas companies to submit an annual "Safety Project Plan" (Plan) report to the Commission by September 30th of each year. The Order lays out the requirements of the Plan, which is to be provided to the Commission as an informational report only. The Company's attached report satisfies these requirements, demonstrates Cascade's priority commitment to natural gas safety, and meets the objective of being informational and easy to understand for the public, our customers, and other regulatory stakeholders.

Please contact me at (509) 734-4599 if you have any questions.

Sincerely,

/s/ Ryan Privratsky

Ryan Privratsky
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Cascade Natural Gas Corporation
2024 Annual Oregon
System Safety Plan

OPUC Commission Order No. 17-084

September 2023

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1. Overview of Cascade Natural Gas Corporation

Until the early 1950s, Pacific Northwest communities outside the larger metropolitan areas were passed over for natural gas service. In 1953, Pacific Northwest businessmen Lester Pettit, Spencer Clark, and Stewart Matthews formed Cascade Natural Gas Corporation (Cascade) to serve these communities with clean, affordable natural gas.

In those early days, the founders faced many financial, engineering, and operational challenges as they strived to expand service and enhance their operations. Cascade grew steadily to become one of the fastest growing natural gas utilities in the nation.

Today, Cascade is a regulated utility offering natural gas service in the states of Oregon and Washington. Cascade has approximately 314,500 total customers in 95 communities – 67 of which are in Washington and 28 in Oregon. Cascade's service areas are concentrated in western and central Washington, and central and eastern Oregon. Cascade owns and operates approximately 24.41 miles of transmission pipeline, 1,742 miles of distribution pipeline, and 81,640 services in Oregon. Interstate pipelines transmit Cascade's natural gas from production areas in the Rocky Mountains and western Canada. Customers in Oregon are served from Cascade's Southern region which includes Bend and surrounding communities, Ontario, Baker City, and the Pendleton/Hermiston areas.

Communities Served in Oregon

Athena	Gilchrist	Milton-Freewater	Prineville
Baker City	Hermiston	Mission	Redmond
Bend	Huntington	Nyssa	Stanfield
Boardman	Irrigon	Ontario	Sunriver
Chemult	La Pine	Pendleton	Umatilla
Crescent	Madras	Pilot Rock	Vale
Echo	Metolius	Powell Butte	Weston

Cascade's headquarters is located in Kennewick, Washington.

2. System Safety Plan Overview

This System Safety Plan (Plan) conforms to the requirements established in Order No. 17-084 (Order), issued in Docket No. UM 1722, the Commission's Investigation into the Recovery of Safety costs by Natural Gas Utilities. The Order requires local distribution companies (LDCs) to file a system safety plan each year which provides the following:

- An explanation of the Company's commitment to and prioritization of safety planning.
- An explanation of the technical reports provided to the Commission's Safety Staff.
- An explanation of the perceived risks addressed by the Company's safety initiatives.
- A brief narrative of each safety program for the 12-month planning period, including:
  - Supporting analysis underlying the safety initiatives.
  - A discussion of the cost-benefit analysis supporting Company decisions, and
  - A narrative on alternatives safety initiatives that the Company considered.
- The expected level of capital and Operations and Maintenance (O&M) expenses required to mitigate issues identified by risk analysis or to meet newly implemented federal code.
- An update on regulatory and legislative changes, and
- A list of any program changes from the prior reporting year. [1]

This Plan provides the required information, as listed above, for the 12-month timeframe of January 1, 2024, through December 31, 2024 (2024).

3. Cascade's Commitment to and Prioritization of Safety Planning

Cascade is committed to providing its customers with safe and reliable gas service. To accomplish this, Cascade is continuously engaged in initiatives aimed at maintaining the integrity of Cascade's pipeline system. The list below highlights Cascade's significant pipeline safety functions:

- System Integrity Department responsible for Cascade's Distribution Integrity Management Plan (DIMP) and its Transmission Integrity Management Plan (TIMP), which are discussed in more detail in Section 5 of this Plan. The System Integrity team is also tasked with assessing risks to Cascade's pipeline system and creating plans to mitigate these risks.
- Corrosion Control Department responsible for monitoring and protecting Cascade's steel pipe infrastructure from corrosion and maintaining Cascade's cathodic protection systems. Effective corrosion control is verified by performing monthly, bi-monthly, and annual inspections. Corrosion Control is responsible for the design of Cascade's cathodic protection and corrosion control systems.
- Public Awareness & Damage Prevention (PA/DP) Department responsible for Cascade's Public Awareness and Damage Prevention programs, which are discussed in more detail in

[1] Commission Order No. 17-084, Appendix A, pages 4-5, ¶ 20 and ¶ 22

Section 5 of this Plan. The PA/DP Department leads Cascade's efforts in promoting safety information, reducing damages, and educating customers, public, and contractors about natural gas and excavation safety.

- Policy & Procedure Department and a Management of Change (MOC) process used to propose, change, approve, and notify all affected personnel of procedural and technical changes, and to deliver and track training to affected personnel.
- Cascade's Safety and Technical Training Department performs many safety-related responsibilities focused on keeping Cascade employees and the public safe. In compliance with 49 CFR Part 192 Subpart N, this department is tasked with technical training for individuals performing tasks on our pipeline facility, assigning initial qualifications and subsequent reevaluations to qualified individuals and the administration of recordkeeping to help ensure that Cascade employees are qualified. An employee may not perform work on Cascade's pipeline facility without the proper training and completion of required qualifications.
- Achieving Continuous Excellence (ACE) is the name of Cascade's Pipeline Safety Management System (PSMS) modeled from the pipeline industry recommended practice of API RP 1173. Within the API RP 1173 SMS framework there are 10 essential program elements that the organization is required to establish and maintain. The ACE program is based on the Plan-Do-Check-Adjust (PDCA) continuous improvement framework and includes these elements. The goal of Cascade's ACE program is to identify and reduce operational risks for the organization, while promoting a culture of continuous improvement. Successful implementation of this program requires not only leadership commitment, but also the input and support of every employee. The program is supported by a five-person department and has reached a level three maturity (fully implemented) out of five levels. The maturity model is based upon an industry collaborative Pipeline SMS Maturity Model. Cascade is fully committed to the ACE program to address risk by proactively and continuously improving pipeline safety.
- Quality Management Systems (QMS) Department which performs quality reviews and inspections to verify conformance to established company standards. The QMS programs include Quality Systems & Reporting, Records & Reviews, and Inspections. The QMS Department increased staffing levels in 2023.

4. Technical Reports Filed Annually with the Commission's Safety Staff

In 2023, Cascade filed the following technical reports with the Commission's Safety Staff:

- An O&M Manual was filed in April 2023, this includes Cascade's TIMP (OPS 900) and DIMP (OPS 1000). The O&M Manual is filed annually in compliance with 49 CFR §192.605. This manual provides procedures for all O&M tasks that Cascade performs on its facilities. O&M Manual updates are also submitted throughout the year upon request.
- 2022 PHMSA Gas Distribution System Annual Report.
- 2022 PHMSA Gas Transmission and Gathering Systems Annual Report
- PHMSA GD-SMS-2022 Form: Voluntary Adoption of American Petroleum Institute Recommended Practice 1173 for Gas Distribution Systems

In a typical year, Cascade also responds to the Commission's data requests and to findings in Commission audits.

5. Cascade's 2023 Safety Initiatives

To address the threats to Cascade's distribution system, Cascade engages in several safety initiatives. Cascade's safety activities can generally be separated into the following three categories:

1. Prescriptive Regulatory Initiatives – This refers to actions Cascade takes to comply with specific federal and state minimum safety standards.

2. Proactive, Performance-Based Actions – This refers to actions Cascade takes to comply with subjective rather than prescriptive federal and state minimum safety standards. Such standards require Cascade to develop and perform risk-based analytics, and to implement a plan for responding to identified risks.

3. Additional Prudent, Risk-Reduction Actions – This refers to Cascade's programs or activities that go above compliance to minimum safety standards and are engaged in to improve the public's safety.

Each safety activity category is described in further detail below.

5.1. Prescriptive Regulatory Actions

The most comprehensive regulations governing Cascade's distribution system is the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Code of Federal Regulations (CFR), Title 49, Parts 190-199. 49 CFR Part 192, specifically Subparts I, L, and M, include multiple and broad prescriptive requirements related to the transportation of natural gas. These regulations require transporters of gas to inspect pipelines at regular intervals to confirm that the pipeline is meeting the operational requirements established in federal code. Compliance to these regulations provides Cascade with the baseline data for the proactive, performance-based actions. Prescriptive regulations are straight-forward guidelines on how to operate and maintain a pipeline. Compliance to prescriptive regulations does not require risk or cost-based analysis.

The prescriptive regulatory compliance work that Cascade will be performing in 2023 includes performing atmospheric corrosion surveys; monitoring cathodic protection performance; performing leak surveys; patrolling the system, performing preventative maintenance on valves, regulating stations, and large meters; odorizing natural gas received into Cascade's system, equipment calibration, control room management, and performing general system maintenance. Since this work is required, Cascade did not perform cost benefit analyses to determine if the work should be done, and alternatives to this work were not considered.

5.2. Proactive, Performance Based Actions

While certain sections of 49 CFR Part 192 tell the utility exactly what to do, compliance to other parts of 49 CFR Part 192 is more subjective. For instance, certain sections of 49

CFR Part 192 tell gas pipeline operators to identify existing and potential threats, evaluate and rank the risks, and implement measures to mitigate the highest risks. In response to the more subjective PHMSA regulations found in 49 CFR Part 192, Cascade has developed programs focused on activities to mitigate pipeline safety risk. These programs include integrity management, public awareness, and damage prevention programs.

5.2.1. Transmission Integrity Management Program (TIMP)

PHMSA rules required Cascade to create and implement a TIMP by December 17, 2004. The purpose of TIMP is to identify, prioritize, assess, evaluate, repair, and validate the integrity of transmission pipelines that could, in the event of a leak or failure, affect High Consequence Areas (HCA). The threats that are identified and evaluated in TIMP include:

- Time-Dependent Threats (grow over time)
  - External Corrosion
  - Internal Corrosion
  - Stress Corrosion Cracking
- Stable Threats (threats that act when influenced by another condition or failure mechanism)
  - Manufacturing Related Defects
  - Construction Related
  - Equipment
- Time-Independent Threats (not influenced by time)
  - Third Party / Mechanical Damage
  - Incorrect Operations
  - Weather-Related and Outside Force
- Human Error Threats

Transmission integrity requirements are outlined in 49 CFR Part 192 Subpart O - Gas Transmission Pipeline Integrity Management. Cascade's TIMP Plan describes company specific risks and steps in greater detail and is divided into four major sections:

- Segment Identification
- Risk Assessment
- Baseline and Continuing Assessment Plan
- Supporting Processes

TIMP activities include baseline assessments and reassessments of transmission lines using pressure testing, inline inspection, and other direct assessment methods. They also include pipeline replacements, relocations, and modifications in compliance with integrity management rules, and to mitigate identified threats.

5.2.1.1. 2024 Planned TIMP Activities

In 2024, Cascade will continue to evaluate existing and new threats to its transmission system. No integrity baseline or reassessments are scheduled to be completed in 2024. In addition, Cascade will continue to complete required routine program requirements as outline in the TIMP plan. Any significant changes will be outlined in future updates.

5.2.2. Distribution Integrity Management Program (DIMP)

The requirement for Cascade to have a DIMP became effective on February 12, 2010. Operators were given until August 2, 2011, to write and implement a DIMP that demonstrates an understanding of the distribution system design and material characteristics; describes the operating conditions and environment; provides the maintenance and operating history; identifies existing and potential threats; evaluates and rank risks; identifies and implements measures to address risks; measures program performance; monitors results; evaluates effectiveness; and periodically assesses and improves the plan. The threats that are identified and evaluated in DIMP include:

- Corrosion
- Natural Forces
- Excavation Damage
- Other Outside Force Damage
- Material, Weld, or Joint Failure
- Equipment Failure
- Incorrect Operation
- Missing Data
- Other – Forces unique to a specific area on the system

Distribution Integrity requirements are outlined in 49 CFR Part 192 Subpart P - Gas Distribution Pipeline Integrity Management Cascade's DIMP consists of seven essential elements, these seven elements are as follows:

- Demonstrate knowledge of distribution system
- Identify threats
- Evaluate and prioritize risk
- Identify and implement measures to address risks
- Measure performance, monitor results, and evaluate effectiveness
- Perform periodic evaluation and improvement
- Report results

Cascade's DIMP Plan describes company specific risks and steps in greater detail.

DIMP activities may include performing additional or accelerated (AA) actions to address threats and associated risk to Cascade's distribution system, this may include performing increased or additional maintenance activities (e.g. patrols, leak survey, regulator maintenance). They also include pipeline replacements, relocations, and modifications in compliance with integrity management rules, and to mitigate identified threats.

5.2.2.1. Risks to Cascade's Distribution System

By using Cascade's DIMP risk model, Cascade has identified the following top four threats to its distribution pipeline system:

5.2.2.1.1. Excavation Damage

Excavation Damage is the largest, system-wide threat to Cascade's system. Excavation Damage is the breaking, cutting, or other destruction of pipeline facilities caused by earth moving or other equipment, tools, or vehicles. All buried facilities in Cascade's distribution system are in danger of being damaged by excavation activities. Consideration is given to piping within protective casings, inside underground structures such as basins or vaults which may be shielded or protected from excavation damage. The most significant root cause factors for Excavation Damage are listed below:

- An excavator uses insufficient excavation practices.
- The excavator does not comply with Oregon law that requires anyone planning to break, move, or displace soil to contact Oregon Utility Notification Center (OUNC) to request that all underground utilities be identified before breaking soil.
- Underground utilities in the excavation site are not properly located and marked because the OUNC representatives were unable to find the excavation area.
- The OUNC is unable to properly locate underground utilities because the excavator failed to properly identify the excavation area, and
- Records of underground utilities are incorrect and, therefore, underground facilities are not properly located prior to excavation.

Cascade's efforts to reduce excavation damages is described in more detail in the Public Awareness and Damage Prevention section in Section 5.2.4 of this Plan.

5.2.2.1.2. Weld/Joint Failure

Weld/Joint failure is the second largest, system-wide threat to Cascade's distribution system. Weld/Joint failure risk is identified when it is known or anticipated that potential defects in pipe, fittings, components, and joints may be present due to manufacturing processes and welding standards for the pipe vintage. Below are the descriptions of major factors that contribute to Cascade's Weld/Joint risk:

- Weld Standards: Risk is assigned to steel pipe installed prior to 1980 due to 49 CFR Part 192 requirements for operators in weld standards and welder qualifications that were federally mandated in 1970. By 1980 Cascade had significantly increased weld standards and welder qualifications to meet 49 CFR Part 192 requirements.
- Two (2") inch 1960's Vintage Gas Welds: In 2018 Cascade completed a weld investigation on 1960's vintage two (2") inch steel gas butt welds, and found a high percentage of visual inspection failures and destructive testing failures causing concern for weld integrity for size and vintage.
- External Stresses on Vintage Welds: External stresses on vintage welds is an interactive threat on vintage steel (defined as pre-1980 and or an unknown install date) main and service welds susceptible to landslide and or frost heave external stresses. Frost heave and landslide soil movement longitudinal external stresses and displacement strain might be readily tolerated by some materials or piping in sound condition, while low ductility materials or pipe joints made by vintage techniques may remain reliable absent certain external stresses, however, when these circumstances exist simultaneously the likelihood of failure in the pipeline is significantly greater due to interacting threats.

Cascade's efforts to reduce risk associated with Weld or Joint failure is described in more detail in the System Safety & Integrity Program (SSIP) section in Section 5.3.2 of this Plan.

5.2.2.1.3. Missing Values

Missing Values is the third largest, system-wide threat to Cascade's system. Missing Values refers to unavailable

data points, such as pipe installation date, material type, leak cause, and other values that are necessary to identify threats on the system through use of Cascade's risk model.

Cascade's efforts to reduce risk associated with Missing Values is described in more detail in the System Safety & Integrity Program (SSIP) section in Section 5.3.2 of this Plan. Cascade is also continuously working to clean up GIS data and populate missing attribute values in GIS to decrease the total amount of missing values.

5.2.2.1.4. Corrosion

Corrosion is the fourth largest, system-wide threat to Cascade's distribution system. Corrosion is the result of electrochemical reactions between metals and substances in the environment. All metallic pipe and affixed components are subject to the threat of external corrosion. Internal corrosion is a threat when liquid water has infiltrated the pipe. Cascade does not transport corrosive gas in its distribution system; and, therefore, internal corrosion is unlikely. Atmospheric corrosion is a subset of external corrosion that will occur only on pipe and components that are not buried. Below are the descriptions of major factors that currently contribute to Cascade's Corrosion risk in Oregon:

- Material Age: Cathodic protection was mandated federally in 1970 and all of Cascade's distribution systems were fully protected by 1978. Pipe installed prior 1978 is at a higher risk of operating with no or inadequate cathodic protection.
- Atmospheric Corrosion: Aboveground pipe is susceptible to the threat of atmospheric corrosion in areas where environmental conditions result in increased likelihoods for atmospheric corrosion to occur. Some of these factors include proximity to saltwater bodies of water, areas with high annual rainfall, bridge crossing, and facilities in vaults.
- Cathodic Protection Treats: Various threats exist that impact Cascade's cathodic protection systems from providing adequate cathodic protection. These threats can result in a higher external corrosion threat. Some of these threats include steel pipe in arid climates (annual rainfall $\leq$ 15 inches/year), cathodic protection shielding, steel pipe casings, and electrically shorted casings.

- Shorted Casings: Shorted casings compromise the cathodic protection current applied to Cascade's distribution system and can lead to an increase potential for corrosion in and adjacent to the casing since the short limits the ability to supply cathodic protection to the carrier pipe.
- Cathodic Protection Shielding: Steel pipe located in plastic sleeves and conduits compromise Cascade's cathodic protection since the plastic sleeve shields the pipe within the sleeve and downstream pipe from cathodic protection which is a significant integrity risk to Cascade's distribution system.

Cascade's efforts to reduce risk associated with Corrosion is described in more detail in the System Safety & Integrity Program (SSIP) section in Section 5.3.2 of this Plan.

5.2.2.1.5. Additional Threats

Additional treats to the distribution system include material, MAOP documentation, natural forces such as landslides, lightning, or earthquakes; other outside forces such as fires, vandalism, or vehicular damage; equipment failure such as the malfunction of a control valve or regulator; and incorrect operation, which refers to human error when performing a task.

5.2.2.2. 2024 Planned DIMP Activities

In 2024, Cascade will continue to evaluate existing and new threats to its distribution system. In addition, Cascade will continue to complete required routine program requirements as outline in the DIMP plan and continue ongoing risk management actions. Any significant changes will be outlined in future updates.

5.2.3. Risk Analysis

5.2.3.1. Integrity Management Analysis and Quantification

As part of Cascade's DIMP and TIMP Plans, a risk analysis has been created and is maintained. Information collected as part of DIMP and TIMP are inputted into the risk analysis, where it is analyzed to find areas of elevated risk and trends. This allows Cascade to quantify the risk associated with each pipeline segment based on factors that are pertinent to the integrity of the system.

5.2.3.2. Identification of Risk Management Actions

DIMP and TIMP risk analysis results and SME input are used to identify and prioritize risk management actions to address the threats and associated risk to Cascade's distribution systems. Risk management is accomplished by taking actions to reduce the likelihood of an occurrence, by alleviating the consequences of an occurrence or both. Appropriate actions are dependent on the group being addressed, the associated threat, whether the threat is current or potential in the future and the viability of the action in managing the relevant risk factors. Possible risk management actions include:

- Replacement of pipe, facilities, components, equipment
- GIS entry/data clean up
- Damage Prevention
- Public Awareness
- Leak Management
- Maintenance Programs
- Operator Qualification Program

5.2.3.3. Obtaining New Information

Cascade obtains new information for DIMP and TIMP through the following methods:

- Observing trending – DIMP and TIMP are analyzed on a yearly basis. The analysis includes reviewing leak information, failure analysis, and system condition data to identify trends. The analysis provides insight into the risks associated with pipe segments and facilities identified as having an elevated risk of failure.
- New information is gathered through normal activities. Gathering new information from forms or other methods used to collect information related to the physical attributes and/or operating and maintenance activities. Integrating newly collected information into DIMP and TIMP.
- Subject Matter Experts (SME) – SMEs are consulted regarding operational knowledge of distributions systems, threat identification, risk evaluation and ranking, and risk mitigation. Information from SME's is used to validate the DIMP and TIMP risk analysis and new information is incorporated into the DIMP and TIMP risk analysis.
- Updating risk analysis – Cascade's DIMP and TIMP risk analysis is updated annually. Results of the risk analysis are used to prioritize risk management actions.
- Continuous improvement – The assessment, prioritization, and mitigation of system risks continue to be refined as new and

additional risk knowledge is incorporated into DIMP and TIMP through normal O&M and DIMP and TIMP activities. Activities related to DIMP and TIMP could include gathering data, conducting targeted inspections and assessments, and completing remediation and replacement work associated with integrity management driven programs.

Based on new information that is obtained, the integrity management activities may be modified appropriately to further accelerate or decelerate necessary risk management actions. Additionally, Cascade is actively monitoring system threats and performance and may identify additional pipeline segments and facilities that have an elevated risk of failure.

5.2.4. Public Awareness and Damage Prevention

5.2.4.1. Public Awareness

In compliance with API RP 1162, Cascade's Public Awareness Program promotes, actively manages, and enhances the public's knowledge of pipeline safety, emergency responsiveness, and damage prevention. Listed below are the goals of Cascade's Public Awareness campaign:

- Increase the awareness of the identified stakeholder audiences to the presence of pipelines in their community and the role those pipelines play in transporting energy.
- Educate stakeholders that pipelines are a proven safe mode of natural gas transportation.
- Increase stakeholders' knowledge of the measures Cascade takes to prevent pipeline accidents.
- Improve stakeholders' understanding of the role they can play in helping to prevent pipeline accidents caused by third party damage and right-of-way encroachment.
- Develop programs that can be managed, implemented, and evaluated for continual improvement.

5.2.4.2. Damage Prevention

Cascade's Damage Prevention Program and Public Awareness activities play a vital role in preventing damage caused to Cascade's facilities by third party excavators—the highest threat to Cascade's distribution system. Cascade is fighting this threat by engaging other natural gas companies in a comprehensive public communication campaign known as the 811 or Call Before You Dig program. Cascade communicates, cooperates, and coordinates with government agencies, utilities, contractors, engineers, customers, and the general

public through membership in the 811 one-call centers and through other communications, education, and awareness initiatives. The Damage Prevention Program seeks to achieve the following:

- Ensure the protection of the pipeline in each operating district through participation in a qualified One-Call Notification system.
- Locate and mark Cascade-owned or operated facilities per Company Procedures to prevent damage to buried facilities during excavation
- Maintain a means for informing potential excavators of the existence and purpose of the Cascade Damage Prevention Program.
- Inspect and examine pipelines that Cascade suspects may have been damaged by excavation activities.
- Report excavation damage in the appropriate reporting tools.
- Notify excavators of their responsibilities after an excavation damage event.
- Attend and actively participate in local utility coordinating councils in each district's service area.

Figures 1, 2, and 3 below show Cascade's trend with pipeline damages, number of locate request, and damages per 1,000 locates in Oregon for 2017 - 2022.

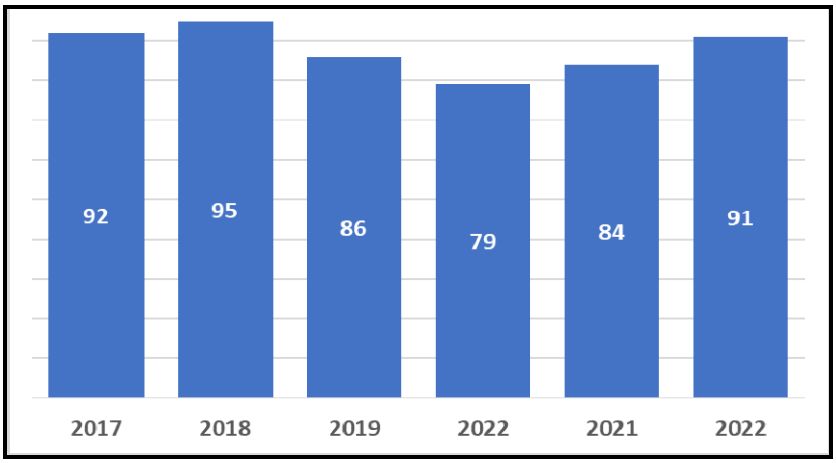

Figure 1: Total Damages

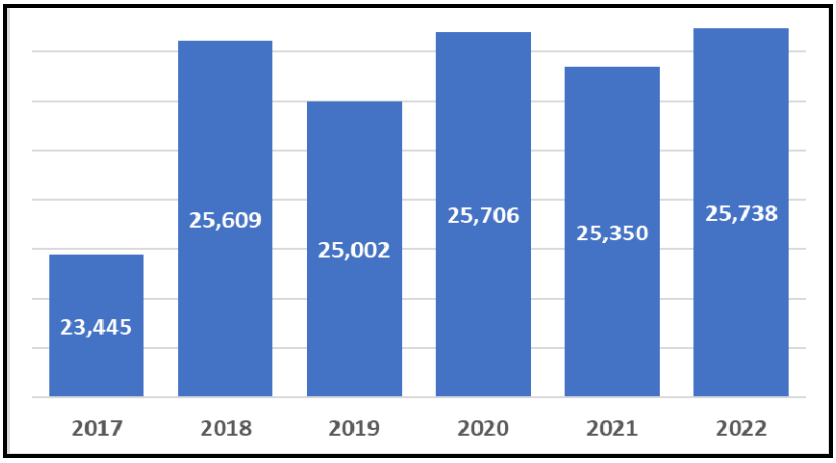

Figure 2: Locate Requests

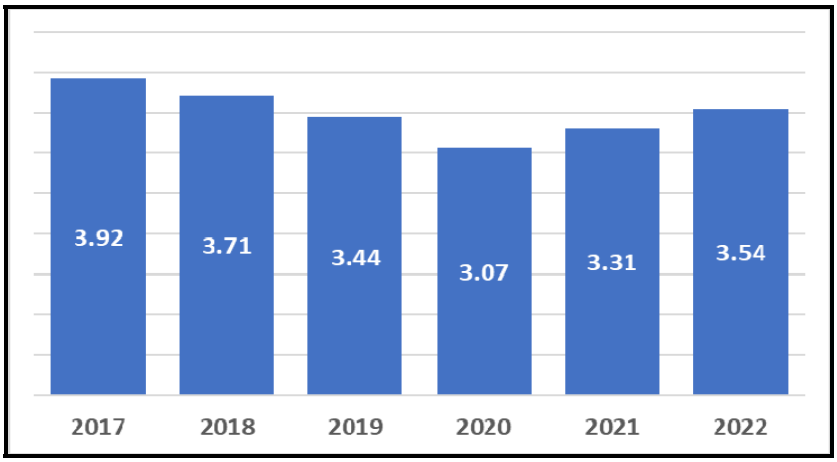

Figure 3: Damage Rate Per 1,000 Locates

Figures 4 and 5 show the 2022 annual damages by excavation cause category and excavator type.

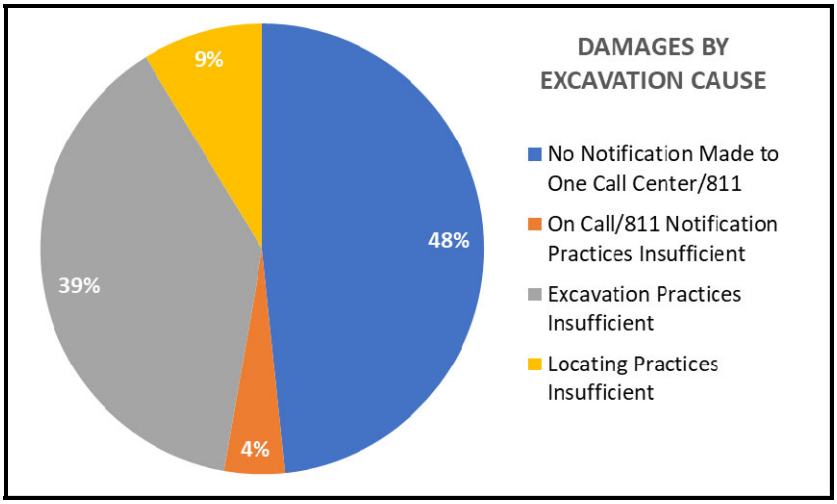

Figure 4: Damage by Excavation Cause

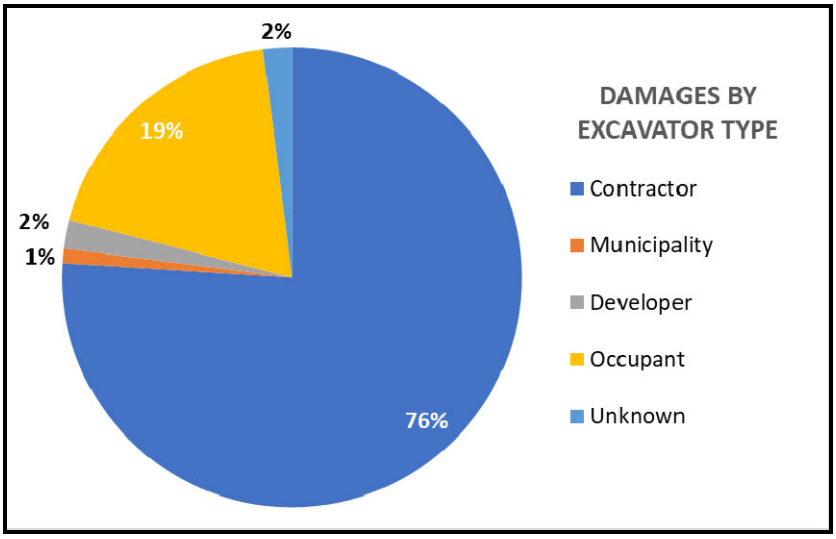

Figure 5: Damge by Excavator Type

5.2.4.3. 2024 Planned Public Awareness and Damage Prevention Activities

Cascade's Public Awareness and Damage Prevention activities are similar from year to year. Cascade's involvement at community events varies each year as events scheduled change. Planned 2024 expenses for Public Awareness and Damage Prevention in Oregon include the following activities:

- Sending customers bill stuffers each month that feature a Public Awareness message. Examples of Cascade's mailers are included in Appendix A.
- Running online banner advertisements, linked directly to Cascades Safety and Education Webpages.
- Sending a direct mailer on pipeline safety to a targeted audience – residences/businesses/schools located near transmission pipelines.
- Sending a direct mailer on pipeline safety to professional blasting contractors.
- Proving safety-related advertisements, staffing booths at community events, giving out promotional giveaways, and sponsoring local trainings.
- Filing complaints against professional excavators/contractors that are negligent of the Oregon Dig Law.
- Billing professional excavators/contractors that are negligent of the Oregon Dig Law.
- Completing a Line Locate Audit form when insufficient locate practices are identified.

Current enhancements currently being made to Cascade's Public Awareness and Damage Prevention programs for 2024 include:

- Cascade is in the process of implementing damage prevention software that assigns risk scores to incoming locate ticket requests. Based on the risk score, mitigation actions can be taken to help retroactively prevent damages before they occur. Software is in the process of being integrated and planned to be implemented in 2024.

5.3. Additional Prudent Risk Reduction Actions

Additional risk reduction activities are not required by federal code, but Cascade engages in them because they increase public's safety, improve system reliability, and maintain the safe operation of Cascade's distribution system. Below are the additional risk reduction actions that Cascade is currently undertaking:

5.3.1. ACE Risk Reduction Projects

The ACE program has implemented two levels of management oversight and commitment towards the development, implementation, continuous improvement, and evaluation of a mature Safety Management System. The Gas Operations Steering Committee is comprised of Director-level managers from all affected departments and meets monthly to discuss operational risks, potential controls, and action items to reduce their likelihood and/or severity. The Executive Steering Committee meets quarterly to evaluate improvement opportunities, approve identified risk reduction projects, and provide strategic direction for implementation.

5.3.2. System Safety & Integrity Program (SSIP)

Cascade's SSIP is a structed replacement program for replacing early vintage steel pipe (EVSP). EVSP is steel mains, service lines, and associated fittings installed earlier than January 1, 1970. These pipeline segments present an increased risk of failure due to age and obsolete materials, parts, and/or equipment. Cascade's SSIP utilizes Cascade's DIMP risk model and relative risk score to establish a weighted average risk (WAR) score for each town within Oregon. The WAR score is then used to identify towns with increased risk related to EVSP. The top five towns by WAR score in Oregon is shown in Table 1.

Table 1. Oregon Top Five Towns based on WAR Score

Town	WAR Score	Length (miles)
Prineville	35.86	39.28
Baker City	24.83	55.72
Milton-Freewater	24.53	15.79
Nyssa	23.18	27.17
Hermiston	20.98	44.28

The primary risks on EVSP include external corrosion, material, weld, or joint failure, equipment failure, MAOP documentation, and missing data. External

corrosion on EVSP is attributed to bare, disbonded, damaged or poorly performing pipe coatings, poor soil and backfill conditions, ineffective cathodic protection, and other factors. Material, weld, or joint failure on EVSP is typically associated with issues with pipe welds made during installation (lack of weld standards and welder qualification), vintage acetylene gas welds, or pipe and fitting material leaks. Equipment failures on EVSP are normally contributed to leaks at main to service connections where O-rings have failed, mechanical couplings and fittings, and on other aging equipment installed when the pipe was originally installed. EVSP also has increased risk associated with pipe with unknown attributes or missing data, which includes unknown physical infrastructure (e.g., pipe material, pipe specifications, construction information), historical information (e.g., corrosion control records, maintenance records, leak records), and sufficient information to establish MAOP.

Ongoing analysis of EVSP continues to show this pipe has a greater likelihood to leak, have corrosion, and/or substandard pipe conditions. These segments of main and their associated service piping have an elevated risk of failure as validated by DIMP and TIMP risk analysis. The different subsets of EVSP include:

5.3.2.1. Pre-CNG Pipe

Cascade operates pipeline segments that are classified as Pre-CNG pipe segments. Pre-CNG pipe segments are distribution systems that were constructed to distribute manufactured gas or natural gas. These pipelines were originally installed, owned, operated, and maintained by others prior to 1955. Cascade acquired many of these systems in the late 1950s and throughout the 1960s. The pipe coating typically found on Pre-CNG pipe is typically bare steel or coal tar wrapped. This pipe is of concern since it is over 60 years old and operated with no or inadequate cathodic protection until the early 1970s, leaving the pipe suspect to elevated corrosion risk. Pre-CNG pipe also has elevated risks associated with missing data with not fully knowing the physical infrastructure and historical information of the Pre-CNG pipe. The extent of this pipe varies throughout Cascade's system and depends on the history of the system and how it was acquired by Cascade. The total miles of Pre-CNG in Oregon is shown in Table 2.

Table 2. Total Miles of Pre-CNG in Oregon

Total Miles of Pre-CNG Distribution Main & Service Line	35.18
Total Miles of Pre-CNG Transmission Main	0.00

5.3.2.2. FISH

Cascade operates pipeline segments that are classified as FISH pipe segments. FISH pipe segments are distribution systems that were installed by Fish Service & Management Corporation in the 1950s

through the early 1960s. FISH pipe is normally coal tar wrapped. FISH pipe is of concern since it is around 60 years old and may have operated with no or inadequate cathodic protection until the early 1970s, leaving the pipe suspect to elevated corrosion risk. FISH pipe also tends to have an elevated likelihood to have leaks associated with material and welds. The extent of this pipe varies throughout Cascade's system and depends on the history of the system and how Cascade built out the system in the late 1950s and early 1960s. The total miles of FISH in Oregon is shown in Table 3.

Table 3. Total Miles of FISH in Oregon

Total Miles of FISH Distribution Main & Service Line	22.03
Total Miles of FISH Transmission Main	0.00

5.3.2.3. Pre-1970

Cascade operates pipeline segments installed earlier than January 1, 1970, that are not classified as either Pre-CNG or FISH. These pipeline segments were originally installed by either Cascade employees or other contractors hired by Cascade. These pipeline segments are typically coal tar wrapped. This pipe is of concern due to its overall age and cathodic protection history since it may have had no or inadequate cathodic protection until the early 1970s, leaving the pipe suspect to corrosion risk. This pipe also has an elevated weld failure risk associated with leaks on vintage metal arc welds and acetylene gas welds. The total miles of Pre-1970 in Oregon is shown in Table 4.

Table 4. Total Miles of Pre-1970 in Oregon

Total Miles of Pre-1970 Distribution Main & Service Line	515.70
Total Miles of Pre-1970 Transmission Main	4.12

5.3.3. Safety and Technical Training

Safety and Technical Training initiatives that are being implemented or are currently in the process of being implemented that are geared toward reducing risk and supporting pipeline safety include:

- ISNetworld Contractor Management: contractor management platform that collects and verifies contractor performance through monitoring of OSHA compliance, safety related performance, Insurance, and Drug and Alcohol compliance.
- Augmented Reality (AR) / Virtual Reality (VR): development of training to include outside leak investigation, emergency response, and other natural

gas related scenarios where occupational safety and pipeline safety risk is prevalent.

6. 2023 Completed Capital Projects

Significant capital projects completed or scheduled to be completed in 2023 include:

PROJECT	DISTRICT	TYPE OF PIPE REPLACED, RISKS	ACTUAL / PLANNED IN-SERVICE DATE
2022 BAKER CITY EVSP REPLACEMENT	EASTERN OREGON	EVSP - IDENTIFIED HIGH (RED) RISK IN DIMP, CORROSION, AND LEAK HISTORY	NOVEMBER 2023
SHORTED CASING REPLACEMENT	ALL	REPLACEMENT OF SHORTED CASINGS	VARIES
HIGH PRESSURE SERVICE SET (HPSS) REPLACEMENT	ALL	REPLACEMENT OF HIGH RISK HPSS'S, AGE AND OUTSIDE FORCE DAMAGE	VARIES
REGULATOR STATION REPLACEMENT	ALL	REPLACEMENT OF REGULATOR STATION WITH SAFETY RELATED ISSUES, CORROSION, LEAKS, ETC.	VARIES
REPLACE 500' OF 6" H.P. MAIN HWY 30 PENDLETON	PENDLETON	REPLACE DIFFICULT TO INSPECT BRIDGE CROSSING, OUTSIDE FORCE DAMAGE	OCTOBER 2023
MAIN/SERVICE LINE OVERBUILD REPLACEMENT	ALL	ELIMINATE EXISTING MAIN AND SERVICE LINES UNDER ENCROACHMENTS AND STRUCTURES	VARIES

7. 2024 Capital Budget

In 2024, Cascade estimates it will invest approximately $7.29 million in capital to address integrity management concerns identified through DIMP, TIMP, Abnormal Operating Conditions (AOC's), or safety related conditions identified by SME's and local district personnel. Below are all 2023 capital projects for system safety with costs that are estimated to exceed $100,000:

PROJECT	DISTRICT	TYPE OF PIPE TO BE REPLACED, RISKS	ESTIMATED COST
2024 SYSTEM SAFETY & INTEGRITY PROGRAM (SSIP) REPLACEMENT	EASTERN OREGON	EVSP REPLACEMENT - IDENTIFIED HIGH RISK IN DIMP	$4,500,000
SHORTED CASING REPLACEMENT	ALL	REPLACEMENT OF SHORTED CASINGS	$137,000
REPLACE 6" BEND H.P.	BEND	REPLACEMENT OF PRE-1970 EVSP	$1,800,000
HIGH PRESSURE SERVICE SET (HPSS) REPLACEMENT	ALL	REPLACEMENT OF HIGH RISK HPSS'S, AGE AND OUTSIDE FORCE DAMAGE	$60,000
REGULATOR STATION REPLACEMENT	ALL	REPLACEMENT OF REGULATOR STATION WITH SAFETY RELATED ISSUES, CORROSION, LEAKS, ETC.	$96,000
REPLACE 800' OF 6" H.P., ONTARIO	EASTERN OREGON	REPLACE 6" H.P. DUE TO SHALLOW DEPTH OF COVER	$390,000
REPLACE 4" H.P., VALE	EASTERN OREGON	REPLACE 4" H.P. AT BULLY CREEK AND HWY 20 TO REMOVE EXISTING PIPELINE FROM BRIDGE.	$302,000

8. 2024 O&M Expenditures

Cascade's anticipated 2024 O&M budgets for DIMP, TIMP, Public Awareness, and Damage Prevention are listed below.

SAFETY INITIATIVES	ESTIMATED 2024 BUDGET
DIMP	$250,000
TIMP	$250,000
PUBLIC AWARENESS & DAMAGE PREVENTION	$200,000

9. Cost Benefit Analyses

Cost benefit analysis and alternatives analysis is sometimes difficult in the context of regulated safety programs. Such an analysis has not been of major consideration in this plan because most of the safety projects are mandated by 49 CFR Part 192, industry best practices, or by engineering and operational requirements. The assigned risk and prioritization for implementing these projects are based on studies and analysis of Cascade's transmission and distribution systems. Studies are performed on a regular basis as part of normal operations. These studies and analysis identify potential threats and risks that can then be mitigated or eliminated by the application of best engineering practices, operational knowledge/experience along with the experience of SME's. The study analysis is used to identify and implement measures and plans to address potential threats and risks, which are then prioritized by projects or included in programs to most efficiently and effectively mitigate or eliminate the threat(s)/risk(s).

With programs and requirements prescribed in federal code such as DIMP and TIMP, the risk assessment analysis essentially acts as Cascade's cost benefit analyses for projects. If the analysis demonstrates a risk is significant, Cascade will invest in the costs to implement appropriate risk management actions. The value of public safety and human life is of significant consideration when reviewing potential threats. Cascade may consider alternative means for mitigating a threat, such as repairing a leak, damaged coatings, or corroded pipe rather than replacing the segment of the pipe, but usually, best practices or regulations for the specific circumstances dictate that solution.

10. Regulatory and Legislative Update

PHMSA currently has several active rulemaking proceedings that will result in the adoption of new rules which may have a direct impact on Cascade's current and future safety programs. Once any of these rule makings are published, Cascade will assess the full impact of the new or amended rules to determine its full impact. Cascade will then modify existing safety projects and look at development of additional safety projects to address the new mandated requirements. Below is an overview of PHMSA rulemakings that Cascade is closely tracking.

10.1. Safety of Gas Distribution Pipeline and Other Pipeline Safety Initiatives Rulemaking (PIPES Act 2020 Sections 202, 203, 204, and 206; RIN 2137- AF53)

PHMSA's proposed revisions to the pipeline safety regulations require operators of gas distribution pipelines to update their distribution integrity management programs (DIMP), emergency response plans, operations and maintenance manuals, and other safety practices. This proposal implements provisions of the Leonel Rondon Pipeline Safety Act—part of the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020—and a National Transportation Safety Board (NTSB) recommendation directed toward preventing catastrophic incidents resulting from overpressurization of low-pressure gas distribution systems similar to that which occurred on a gas distribution pipeline system in Merrimack Valley on September 13, 2018. PHMSA also proposed to codify use of its State Inspection Calculation Tool, which is used to help states determine the base-level amount of time needed for inspections to maintain an adequate pipeline safety program. Further, PHMSA proposed other pipeline safety initiatives for all part 192-regulated pipelines, including gas transmission and gathering pipelines, such as updating emergency response plans and inspection requirements. Improving construction procedures designed to minimize the risk of incidents caused by system over-pressurizations. Among the proposed revisions include:

- Updating Operator's DIMP plans to consider and prepare the threat of over-pressurization, specifically over-pressurization on low pressure systems.
- Requiring new regulator stations to be designed with secondary pressure relief valves and remote gas monitoring, to better prepare gas distribution systems to avoid over pressurizations, and limit damage during incidents.
- Strengthening emergency response plans for gas pipeline emergencies, including requirements for operators to contact local emergency first responders / public officials for incidents involving fire/explosion/fatality/significant interruption and keep customers and the affected public informed of what to do in the event of an emergency and post incident.
- DIMP plans to be required to assess risk of cast iron, bare steel, unprotected steel, wrought iron, and historic plastics with known issues and low-pressure distribution systems, as well as the possibility of future accidents, to better account for high-consequence but low probability events.
- DIMP plans to consider factors that increase the likelihood of failure such as age, increase the overall risk (including factors that simultaneously increase the likelihood and consequence of failure), and limit the effectiveness of leak management programs.
- Operators to consider and take appropriate action to address the impacts of extreme weather as a threat, regardless of whether they had experienced such events in their pipelines' history, while still recognizing regional differences.
- Operators to address the impacts of climate change and protect the reliability and integrity of their pipeline systems.
- DIMP plans to assess risk to low-pressure gas burning equipment.

- Revise O&M manual / Emergency plans to include procedures for responding to overpressure indications.
- MOC procedure to account for significant changes to distribution system, and to ensure SME review/approval of relevant construction plans.
- Traceable/Verifiable/Complete records for gas distribution facilities "critical to ensure proper pressure controls".
- Monitoring for overpressure by OQ-qualified person during certain construction projects.
- Assess risk of (and eliminate) common mode of failure at district regulator stations.
- Construction inspection requirement for inspections to be performed using different personnel to conduct the inspection than had performed the construction activity.

10.2. Gas Pipeline Leak Detection Rulemaking (PIPES Act 2020 Section 113; RIN 2137-AF51)

PHMSA's proposed regulatory amendments implements congressional mandates in the Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020 to reduce methane emissions from new and existing gas transmission pipelines, distribution pipelines, regulated (Types A, B, C and offshore) gas gathering pipelines, underground natural gas storage facilities, and liquefied natural gas facilities. Among the proposed amendments for Part 192-regulated gas pipelines include:

- Strengthened leakage survey and patrolling requirements.
- Performance standards for advanced leak detection programs.
- Leak grading and repair criteria with mandatory repair timelines.
- Requirements for mitigation of emissions from blowdowns.
- Pressure relief device design, configuration, and maintenance requirements.
- Clarified requirements for investigating failures.

11. Significant Changes to Cascade's Safety Programs

Cascade continues to monitor PHMSA rulemakings and assess the changes Cascade will need to make to comply with newly adopted rules. Cascade is expecting to see some changes to some of the existing safety programs in 2023 due to new regulatory requirements. Changes as a result of new regulatory requirements are tracked and managed through Cascade's MOC process.

APPENDIX A
Public Awareness and Damage Prevention Information

CASCADE NATURAL GAS CORPORATION®
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

Pipeline Safety Information

Your safety matters to us.

Underground, natural gas pipelines are located within the communities you live, work, and play. For your safety, please review this information and share with other members of your household/business.

Pipeline Safety and Reliability

Cascade is committed to delivering natural gas through a highly engineered pipeline system in a safe, environmentally sound process. Natural gas pipelines are the safest method of energy transportation, according to National Transportation Safety Board statistics. Cascade uses the latest technology, security, and industry practices to monitor pipelines, and maintain service and safety. We execute many programs to ensure your safety: 24/7 design and construction monitoring; integrity management; inspection and patrol; public safety outreach; and communication/training with emergency officials.

Suspect a Gas Leak?

Do you SEE? A patch of discolored soil or dead vegetation, dirt being blown into the air, water bubbling or spraying into the air, fire or explosion.

Do you HEAR? Unusual noises or a hissing sound.

Do you SMELL? A strange odor similar to rotten eggs or a recently lit match.

If you suspect a natural gas leak, leave the area immediately. Do not use a cell phone or start a vehicle near any suspected natural gas leak. If leaking gas ignites, do not attempt to put out the flames.

Call 911 and then Cascade Natural Gas at 888-522-1130.
Warning: Natural gas cannot always be detected by smell alone. It is important to understand all the signs of a gas leak.

Pipeline Markers

Pipeline markers are used to show the general route of a pipeline, but are not found near every pipeline.

Show:
- Approximate location
- Product transported
- Operator's name and emergency phone number

Do Not Show:
- Exact location
- Depth
- Number of pipelines

For more information on pipeline locations in your area, please go to www.npms.phmsa.dot.gov.

STEPS FOR SAFE DIGGING

Do NOT assume depth of the utility or rely on past locate data when digging. If you damage a natural gas line and there is blowing gas, leave the area, call 911, and then call Cascade. Report ALL damaged natural gas lines, including damage to the coated wire paralleling the gas line, to Cascade, even if there is no blowing gas. Minor nicks and wrap damage, or damage to the wire, can be dangerous if left unrepaired.

Right-of-Ways

Pipeline right-of-ways or easements are strips of land in which pipelines are installed. Certain land uses are prohibited on a right-of-way or require permission from Cascade Natural Gas.

CASCADE NATURAL GAS CORPORATION®
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In the Community to Serve®

Información de Seguridad de Tuberías

Su Seguridad Nos Importa

06/2022

Las tuberías subterráneas de gas natural se encuentran dentro de las comunidades donde vive, trabaja y juega. Para su seguridad, revise esta información y compártala con otros miembros de su hogar / negocio.

TUBERÍA DE SEGURIDAD Y CONFIABILIDAD

Cascade se compromete a suministrar gas natural a través de un sistema de tuberías altamente diseñado en un proceso seguro y ambientalmente racional. Los gasoductos de gas natural son el método más seguro de transporte de energía, según las estadísticas de la Junta Nacional de Seguridad en el Transporte. Cascade utiliza las últimas prácticas tecnológicas, de seguridad y de la industria para supervisar las tuberías y mantener el servicio y la seguridad. Cascade ejecuta muchos programas para garantizar su seguridad: Monitoreo de diseño y construcción las 24 horas del día, los 7 días de la semana; gestión de la integridad; inspección y patrulla; la divulgación de la seguridad pública; y comunicación/ formación con funcionarios de emergencia.

¿Sospecha una fuga de gas?

¿Lo ves?
Un parche de tierra decolorada o vegetación muerta, la suciedad sopla en el aire, el agua burbujeando o rociando en el aire, el fuego o la explosion.

¿Tu escuchas?
Ruidos inusuales o un silbido.

¿Hueles?
Un olor extraño similar a los huevos podridos o a un encendedor recientemente iluminado.

Si sospecha que hay una fuga de gas natural, abandone el área inmediatamente. No use un teléfono celular ni encienda un vehículo cerca de una fuga de gas natural sospechosa. Si la fuga de gas se enciende, no intente apagar las llamas.

Llame al 911 y luego a Cascade Natural Gas al 888-522-1130.
Advertencia: el gas natural no siempre se puede detectar solo con el olor. Es importante comprender todos los signos de una fuga de gas.

MARCADORES DE TUBERÍAS

Los marcadores de tuberías se utilizan para mostrar la ruta general de un oleoducto, pero no se encuentran cerca de cada oleoducto.

MOSTRAR:
- La ubicación aproximada
- El producto transportado
- Nombre del operador y número de teléfono de emergencia.

NO MOSTRAR:
- La ubicación exacta
- La profundidad
- El número de tuberías

Para obtener más información sobre las ubicaciones de tuberías en su área, vaya a www.npms.phmsa.dot.gov

GUÍA PARA EXCAVAR SEGURO

NO asuma la profundidad de la utilidad ni confíe en datos de ubicación anteriores al excavar. Si daña una línea de gas natural y sale gas, abandone el área, llame al 911 y luego llame a Cascade. Informe a Cascade de TODAS las líneas de gas natural dañadas, incluido el daño al cable revestido paralelo a la línea de gas, incluso si no hay gas soplado. Las muescas menores y los daños en las envolturas, o los daños en el cable, pueden ser peligrosos si no se reparan.

DERECHO-DE-VÍAS

El derecho de vía o servidumbre de las tuberías son franjas de tierra en las que se instalan las tuberías. Ciertos usos de la tierra están prohibidos en un derecho de vía o requieren permiso de Cascade Natural Gas.

Servicio al Cliente: 888-522-1130 | www.cngc.com | awareness@cngc.com

CASCADE NATURAL GAS CORPORATION®
A Subsidiary of MDU Resources Group, Inc.

In the Community to Serve®

May 30, 2022

Safety Manager/General Manager,

Cascade Natural Gas Corporation (Cascade) is sending this letter to potential blasting contractors to communicate public safety information to improve worker and community safety.

Please review the following if your company or subcontractors will be performing blasting:

- Contact 811 to get underground utilities marked as soon as possible. Call 811 or visit www.call811.com before the project start date.
- If there are Cascade locate marks in the vicinity of the blasting project, contact Cascade's customer service center as soon as possible. You may also need to contact other utility companies listed on your locate ticket if they have locate marks in the vicinity.
- Cascade needs adequate time to gather data and perform a risk analysis on our pipeline before the blasting project begins, if blasting will occur within 100 feet (for standard blasting) or 500 feet (for large scale blasting) of a Cascade pipeline.
- The risks associated with blasting near utility lines without contacting your local utility companies and following safe blasting practices could possibly include property damage, financial loss, service outages, injury, or fatality.

Cascade's number one goal is to protect you, your employees, and the community from the risks associated with damaging a pipeline during excavation/blasting. Cascade is here to help you through your blasting project, and we thank you for your partnership.

Together we can reduce damages and improve safety through communication, collaboration, and education.

If you will be blasting near our pipeline or have any questions, please contact us:
Customer Service/Emergency 888-522-1130 | awareness@cngc.com | www.cngc.com
Esta información esta disponible en español en nuestro sitio web www.cngc.com/es/

Thank you,

Public Awareness & Damage Prevention Team
Cascade Natural Gas Corporation

Know what's below.
Call 811 before you dig.

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.

In the Community to Serve®

May 30, 2022

Dear Valued Community Member,

You are receiving this letter because a high pressure, underground natural gas pipeline is located on or near your property, therefore it is vital to know how to recognize, respond to, and report a natural gas leak. For your safety, please review this information and share with other members of your household/business.

Damage caused by digging is a high risk to our pipeline and our community. Please help us keep our utility lines safe by contacting 811 and carefully hand dig around marked utility lines.

Reasons to Contact 811 Before You Dig and to Hand Dig Around Marked Utility Lines:

1. It's free. It's easy. It's the law. The law applies to homeowners/occupants and professional contractors.
2. It keeps you, your family, and your neighbors safe. Damaging a utility line could result in bodily harm or death to self or others.
3. It keeps utility workers and emergency responders safe from having to respond to an accident if you damage a utility line.
4. There are millions of utility lines buried underground that bring vital services to homes, schools, and businesses throughout your community (think natural gas, electricity, water, cable).
5. Damaging a utility line can cause service interruptions and cut off vital services in your area.
6. If you damage a utility line it may result in a large repair bill from the utility company.

When should you contact 811?
Anytime you are "displacing earth." Including but not limited to installing a fence, planting a tree/bush, pulling up tree roots, grading work, putting stakes in the ground for concrete work or temporary power, installing a mailbox or signpost. Do NOT assume depth of the utility or rely on past locate data when digging. Contact 811 or visit www.call811.com to request a locate ticket to have utilities marked two full business days before you plan to dig.

Who should contact 811?
Anyone who will be digging or displacing earth.

What should you do if you damage a natural gas line?
Leave the area, call 911, and then call Cascade 888-522-1130. Report ALL damaged natural gas lines, including damage to the coated wire, paralleling the gas line, to Cascade, even if there is no blowing gas. Minor nicks and wrap damage to the gas line, or damage to the coated wire, can be dangerous if left unrepaired.

If you would like more details regarding this safety information, please contact us:
Customer Service/Emergency 888-522-1130 | awareness@cngc.com | www.cngc.com
Esta información està disponsible en español en nuestro sitio web www.cncg.com/es/

Please take a short survey to help us improve our pipeline safety outreach.
Go to www.surveymonkey.com/r/cngcsafety or scan QR code with smartphone camera.

Thank you,
Public Awareness and Damage Prevention Team
Cascade Natural Gas Corporation

Share this safety information with students and their families.

Contact 811 Before You Dig

Call 811 or visit www.call811.com to request a locate ticket two full business days before you plan to dig or move earth in any way—even just planting a tree or shrub. This free service will allow Cascade Natural Gas and other utility companies time to mark the locations of their buried utility lines. Carefully hand dig within 2 feet of either side of the marks, or relocate your project to avoid damaging utility lines. Report all damages to Cascade Natural Gas or the appropriate utility company.

How to Recognize a Natural Gas Leak

Use your eyes, ears and nose to detect a natural gas leak. Gas leaks usually have a strange odor, similar to rotten eggs or a recently lit match—but not always. Be alert for additional warning signs such as dirt blowing into the air, a patch of discolored soil or dead vegetation, water bubbling or spraying into the air, fire or explosion, or a hissing or roaring sound.

How to Respond to a Suspected Natural Gas Leak

- **Evacuate everyone immediately.**
- **Move to a safe location upwind.**
- **Call 911 and then Cascade Natural Gas at 888-522-1130.**
- **Warn others in the area to stay away.**
- **Stay away until emergency responders tell you that it is safe to return.**

Leaking gas is dangerous. Even a tiny spark could ignite leaking gas. It can cause fire or explosion.

DO NOT:

- **Use a cell phone until you are safely away.**
- **Operate vehicles, electric appliances or switches such as lights, doorbells, TVs and garage door openers.**
- **Attempt to put out the flames if leaking gas ignites.**

Always contact your state 811 center before digging and for the most current requirements.

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO.60 NEWBURYPORT MA

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Cascade Natural Gas
Educational Materials Distribution
104 Bridge Road
Salisbury, MA 01952-9912

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UNITED STATES

Order Your Teaching Resources Today.

Two easy ways for you to order

1. **ONLINE:**
   cngc.e-smartkids.com/teachers or scan this QR code with your phone's camera to go to the order page.

2. **MAIL:**
   Complete the order card attached, and mail. No postage required.

Orders are filled on a first-come, first-served basis and supplies are limited. Materials will arrive in two to four weeks.

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Educational Materials Distribution
104 Bridge Road
Salisbury, MA 01952

Enhance Your Educational Program

Order FREE materials that are designed to bolster education and engagement on topics related to natural gas.

#13417

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In the Community to Serve®

Natural Gas Safety Education

Accelerate Awareness with FREE Resources for Students and Teachers

cngc.e-smartkids.com/teachers

FREE Classroom Resources Make Teaching Utility Safety Easy.

Fall 2022

Cascade Natural Gas Corporation
A Subsidiary of MDU Resources Group, Inc.
In the Community to Serve®

Dear Educator,

Awareness is critical to the public health and safety of our communities. Recognizing that, we've committed to heightening awareness of topics related to natural gas by creating an array of FREE resources—all of which are designed to enrich the classroom environment and to support and prepare students and their families.

Practical Resources for Flexible Learning

From print booklets and inquiry-based experiments to downloadable activities and interactive digital games, we have sought to prepare for you a wide selection of resources that are suitable for use in varied environments and for students with varied learning styles.

Equipping Students to Transfer Knowledge

Thought-provoking discussion exercises, home safety inspection logs and other useful tools and tips are designed to encourage familial involvement, which helps to optimize public safety through the transfer of critical information.

Elevating Your Educational Experience at No Added Cost

Every one of our resources comes at no added cost to you. Conserve your budget, while cutting down on prep time with corresponding teacher's guides and pre/post tests that assist with implementation and knowledge assessment.

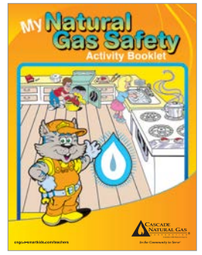
We appreciate your commitment to education, and hope that these materials will serve you well as you continue to guide children to a brighter tomorrow.

Sincerely,

Cascade Natural Gas
Community Relations Team

FREE Booklets Touch on a Variety of Natural Gas-Related Topics.

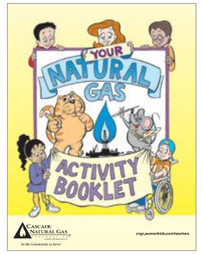
Our booklets have been developed by educators and industry experts, and are designed to align with national and state standards and core teaching objectives.



My Natural Gas Safety Activity Booklet

Grade K-2, #25215

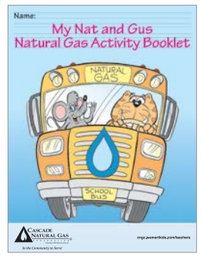
Kato the Safety Cat introduces kids to the basics of natural gas and natural gas safety, including what it's used for and how to recognize and respond to leaks. Features age-appropriate activities such as matching, sequencing and coloring.



Your Natural Gas Activity Booklet

Grades 3-6, #38500

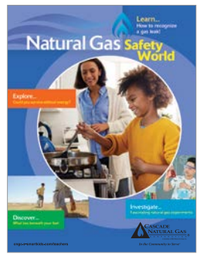
Fan favorites, Nat and Gus, inform kids about natural gas through puzzles, word scrambles, math exercises and more. Includes lessons on the forms of matter, the origins of natural gas, how we acquire natural gas and more.



My Nat and Gus Natural Gas Activity Booklet

Grades K-2, #38495

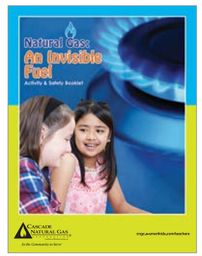
Lovable characters Nat and Gus introduce kids to the basics of natural gas science and safety—how it's formed, distributed and used, along with how to recognize and respond to gas leaks. Features coloring, matching and sequencing activities.



Natural Gas Safety World™

Grades 4-6, #25220

Activity prompts and hands-on experiments address core scientific topics such as states of matter, density and the natural gas distribution system. Includes safety tips and a home safety inspection checklist to encourage responsible behavior.



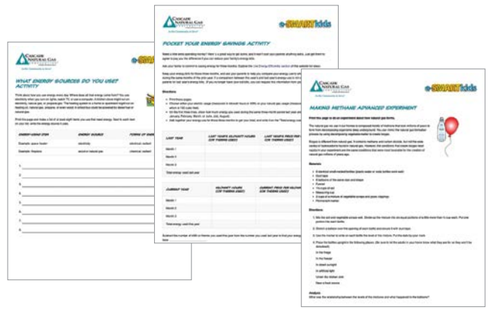
Natural Gas: An Invisible Fuel

Grades 3-6, #38490

Activity prompts, word puzzles and math exercises are interwoven with scientific concepts to ensure understanding of natural gas-related topics, such as the qualities of natural gas, states of matter and pipeline safety.

Downloadable Teacher's Guides and Student Tests

Teacher's Guides provide valuable insight into the contents of each booklet, allowing for seamless integration with your core curriculum. Creative prompts are included to foster further discussion with students, while pre/post tests help with gauging mastery of the concepts.



Downloadable Bonus Materials

High-interest downloadables provide additional opportunities to reinforce key concepts covered in the booklets via worksheets, activities and experiment prompts.

FREE Digital Resources Enhance Natural Gas Education.

Access a full range of resources on our e-SMARTkids website.

Resources include:

- Downloadable teacher's guides
- Pre/post tests
- Printable activity sheets
- Fun facts, stories and experiments
- Interactive games and videos

Scan this QR code with your phone's camera to go to **cngc.e-smartkids.com/teachers**.

FREE Educational Resources from Cascade Natural Gas

Name: _____

Role (e.g., teacher, principal, librarian): _____

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Is this a homeschool? ❑ **Yes** ❑ **No**

Address: _____

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Which subject(s) do you teach? _____

Which grade(s) are you ordering for? _____

How many teachers will be using these materials? _____

Comments: _____

Title	# of Booklets
My Natural Gas Safety Activity Booklet, *Gr. K-2, #25215*	
My Nat and Gus Natural Gas Activity Booklet, *Gr. K-2, #38495*	
Natural Gas: An Invisible Fuel, *Gr. 3-6, #38490*	
Your Natural Gas Activity Booklet, *Gr. 3-6, #38500*	
Natural Gas Safety World™, *Gr. 4-6, #25220*	

Thank you for your order. Materials will arrive in two to four weeks.

#13417

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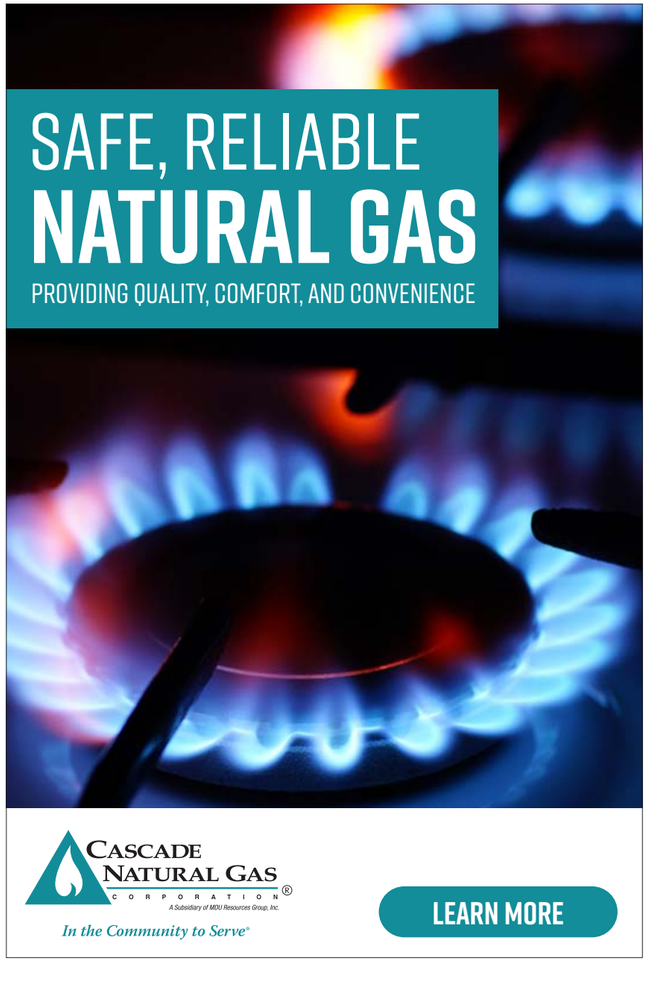
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Pipeline markers show:
- Approximate location
- Product transported
- Operator name
- Emergency number

Do not show:
- Exact location
- Depth
- Number of pipelines

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- Producto transportado
- Nombre del operador
- Número de emergencia

No mostrar:

- localización exacta
- profundidad
- número de tuberías

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- Número de emergencia

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DIZZINESS

CHEST PAIN

HEADACHE

NAUSEA

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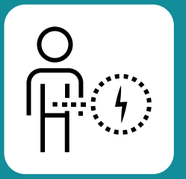

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DOLOR DE PECHO

DOLOR DE CABEZA

NÁUSEA

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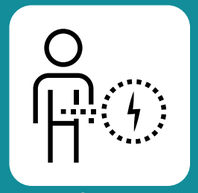

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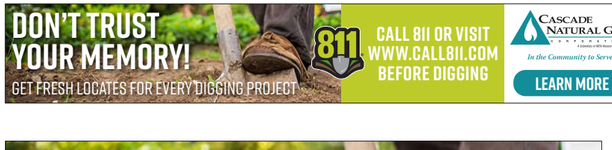

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ONE EASY CALL GETS YOUR UTILITY LINES MARKED AND HELPS PROTECT YOU FROM UNWANTED INJURY AND EXPENSES

CALL 811 OR VISIT WWW.CALL811.COM BEFORE DIGGING 811®

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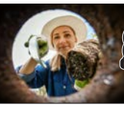

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APRENDE MÁS

NEWS RELEASE

Before starting an outdoor home improvement project, call 811 before you dig

KENNEWICK, WA – ***April 1, 2022*** – In observance of National Safe Digging Month in April, Cascade Natural Gas announced results from a recent national survey revealing that 49% of homeowners who plan to dig this year will put themselves and their communities at risk by digging without contacting 811 beforehand to learn the approximate location of underground utilities. Additionally, 58% of homeowners reported experiencing a utility service interruption in the last 12 months, a direct result of damaging an underground utility line.

Digging without knowing the approximate location of underground utilities can result in serious injuries, service disruptions and costly repairs at the expense of the homeowner when natural gas, electric, communications, water and sewer lines are damaged. Installing a mailbox, building a deck, planting a tree, laying a patio and pounding stakes are some examples of digging projects that require contacting 811 before starting.

While most homeowners know the importance of safe digging, it is reported that 40% of active diggers believe they are not digging deep enough to warrant having lines marked and 36% of homeowners believe their project was not in an area that needs to be marked. Homeowners are encouraged to be aware as depths of utility lines vary, and multiple lines may be in a common area. Even if you have dug in an area previously, erosion, settling ground and other factors can change the depth and location of utilities over time. Stop excavating immediately if you find unmarked utility lines and call 811 to have them marked.

Cascade Natural Gas is committed to keeping homeowners safe by reducing damages to underground natural gas lines through education and awareness. As part of National Safe Digging Month, homeowners are encouraged to take the following steps when planning a digging project this spring:

- Always contact 811 a few days before digging, regardless of depth or familiarity of the property.
- If a contractor has been hired, confirm that the contractor has contacted 811. Don't allow work to begin until an 811 locate ticket has been completed.
- Confirm that all utilities listed on your 811 locate ticket request have been marked or cleared – in any area you plan to dig – before digging.
- Contact the utility listed on the locate ticket if they have not responded by the due date listed on your ticket.
- Consider moving the location of your project if it is near marked utility lines.
- Carefully hand dig within two feet of the marked lines and visually determine the exact location of the utility line before proceeding if your dig project is next to a marked line.
- Do NOT build structures (sheds, shops, decks, etc.) over utility lines, as this restricts access to the utility lines and can result in a dangerous situation.
- Remember that damaging a utility line is dangerous and can result in expensive repair bills.
- Visit www.call811.com for complete info.

Everyone who contacts 811 a few days before digging is connected to a local notification center that will take the caller's information and communicate it to local utility companies. Professional locators will then visit the dig site to mark the approximate location of underground utility lines with spray paint, flags, or both. Once a site has been accurately marked, you can carefully begin digging around the marked areas.

Contact 811: It’s free, it’s easy and it’s the law.

Cascade Natural Gas is a natural gas distribution company serving approximately 305,500 residential, commercial, industrial and transportation customers in 95 communities in Washington and Oregon. Cascade is a subsidiary of MDU Resources Group, Inc., a Fortune 500 company and a member of the S&P MidCap 400 and the S&P High-Yield Dividend Aristocrats indices, and is Building a Strong America® by providing essential products and services through its regulated energy delivery and construction materials and services businesses. For more information about MDU Resources, see the company’s website at www.mdu.com. For more information about Cascade, visit www.cngc.com.

Media Contact: Mark Hanson at 701-530-1093 or mark.hanson@mduresources.com

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Excess Flow Valve (EFV) NOTIFICATION

The United States Department of Transportation (DOT) has issued a pipeline safety regulation requiring natural gas utility companies to notify customers about the availability of Excess Flow Valves (EFV) for installation on the natural gas service line to their home or business.

What is an EFV?

An EFV is a safety device designed to automatically stop or restrict the flow of natural gas if an underground pipe is broken or severed. Such damage is usually the result of some type of excavation. Although an EFV may help limit the effects or damage of such an incident, the best way to protect against such incidents is to ensure that anyone excavating on your property has called 811 to have buried pipelines properly marked before digging. Installation of an EFV will not protect against customer appliance gas leaks, small gas service line punctures or gas meter leaks. An EFV may not protect a pipeline from damage caused by flooding or earthquakes. EFVs are not available for some customers due to the amount of gas used, areas with delivery pressure less than 10 psi or other circumstances that hinder the effectiveness of the EFV.

Where is an EFV installed?

The EFV is installed underground on the service line that runs between the gas main located in public right of way or a dedicated utility easement and the natural gas meter. Generally the EFV is installed as close as possible to the gas main. In some instances the location may need to be installed further from the gas main to accommodate interference from other buried structures.

How much does it cost to have an EFV installed?

If you would like to have an EFV installed in your service line, please contact Cascade Natural Gas Corporation at 888-522-1130 or email customerservice@cngc.com. The customer is solely responsible for the cost associated with installing the EFV. There will be no ongoing cost to the customer associated with the maintenance or replacement of the EFV. Installation costs vary greatly due to different soil conditions within our service territory. Estimates for cost and timeframe for construction will be provided as requested on a case-by-case basis. The EFV will be installed at a time that is mutually agreeable to the company and customer. Since the EFV will be installed on Cascade's natural gas pipe, only Cascade or its approved contractors may perform the installation.

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811®

Know what's below. Call before you dig.

06/2021

EMERGENCY GAS SHUT OFF

To be fully prepared for an emergency, you should know where your gas meter is located and how to shut off the natural gas service to your home.

The following are examples of emergencies; however, it is not a comprehensive list:

- Fire in structure or near the meter.
- Earthquakes with enough magnitude to displace equipment.
- Floods.
- Wind damage.
- Carbon monoxide symptoms.
- Gas odors.

If an emergency occurs, but you do not experience flulike symptoms or smell or hear escaping gas, then you probably do not need to shut off your gas. Doing so may deprive you of service unnecessarily.

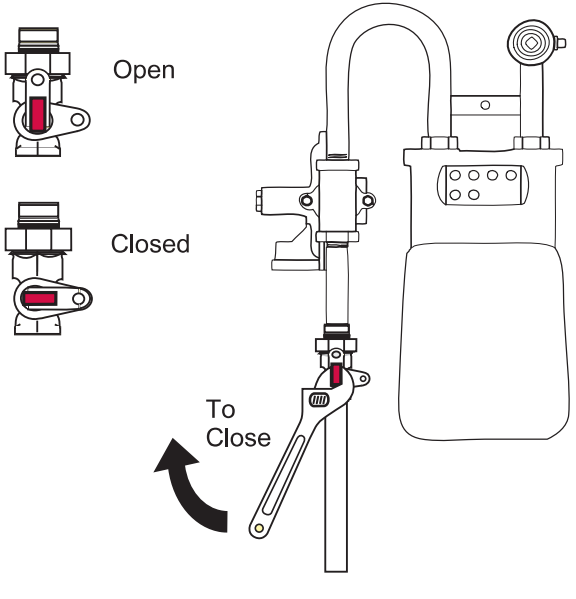
However, if you are experiencing flulike symptoms without a fever, are in doubt, or smell or hear escaping gas, then:

DO NOT:

- Switch anything on or off, such as lights, electrical switches, garage door openers or vehicles.
- Use e-cigarettes, smoke, use lighters, matches or other open flames.
- Use a telephone of any type, including cell phones.
- Return for personal items.

DO:

- Immediately leave the house.
- From a remote location, call Cascade Natural Gas at **888-522-1130** or call emergency responders at **911**.
- At your discretion, **if it is safe to do so, shut off the gas meter** following the instructions on the reverse side of this card.
- Once the gas is off, for your safety, **LEAVE IT OFF** until a Cascade Natural Gas service representative can check out the system. The equipment will be checked by a technician, who can ensure that the system is intact and operable.



HOW TO SHUT OFF A GAS METER

- Locate the meter shut-off valve (usually the first fitting) on the gas supply pipe coming out of the ground.
- Use a long-handled wrench to turn the valve one-quarter turn so that the lever is crosswise to the pipe (see diagram).
- Once the valve is off, **LEAVE IT OFF** until a qualified Cascade Natural Gas service representative can check out the system.

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All Emergencies – Customer Service:
888-522-1130 • www.cngc.com

(see reverse side) 02/21

Keep Snow and Ice Away From Meters

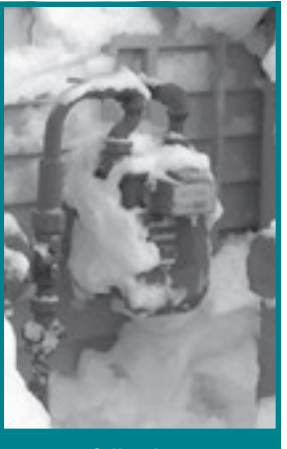
For your personal safety, customers are encouraged to inspect their natural gas meter(s) on a regular basis and remove any ice and snow built up. Keeping your meter(s) clear of accumulation will help prevent damage that could result in a hazardous situation.

Why is it important to keep your meter clear of snow and ice buildup?

- Snow and ice puts stress on the regulator and meter piping, and could cause gas to leak into your home and create an unsafe condition.
- Snow cover may result in abnormal pressure that affect appliance operation, and interrupt your service.
- If there is an emergency, response crews will need clear access to your meter.

Meters are designed to withstand extreme weather conditions, but remember to protect them from ice and snow buildup during the harsh winter months.

- When removing heavy accumulations of snow or ice, do not strike meters with snow blowers, blades or shovels.
- Do not kick your meter to break or clear ice.
- Use a broom, a snow brush or your hands to lightly remove snow and ice that is capable of being removed. For extremely heavy ice buildup, please contact Cascade Natural Gas.
- Remove icicles and snow from overhead eaves and gutters to prevent damage to the meter as they fall. Also, dripping water can splash and freeze on the meter or vent pipes.



Carefully clear and keep the snow and ice away from the meter for your personal safety.

Meter Reading and Safety Requires Clear Access to Meter at All Times

Ice and snow may block the electronic reading of your meter. Our desire is to accurately bill your natural gas usage.

- Please keep the area in front of and around your gas meter clear at all times. If you are storing a boat or trailer in front of your meter, try not to completely block off the meter.
- Please contact Cascade Natural Gas to discuss the building of decks, boxes or landscaping planned around your meter to avoid creating a hazardous situation.

Call 811 Two Business Days Before You Dig

The greatest risk to underground natural gas pipelines is accidental damage during digging projects. Calling 811 to have the utility lines on your property marked and carefully hand digging around the marked lines helps you avoid costly damages, dangerous situations, and service interruptions.

811 Know what's below. Call before you dig.

If you believe damage has occurred around the meter, you have no heat, or smell gas, call Cascade Natural Gas immediately.

All Emergencies – 24-Hour Response – 888-522-1130

Customer Service
888-522-1130
Call 7:30 a.m.- 6:30 p.m. Monday-Friday
www.cngc.com

Thank you for your cooperation.

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IF YOUR NATURAL GAS SERVICE IS INTERRUPTED FOR ANY REASON, PLEASE CALL US IMMEDIATELY: 888-522-1130.

01/2021

Natural Gas Smells Bad for a Good Reason

Huele mal por una buena razón

In its natural state, natural gas is odorless and colorless. For easy detection, Cascade Natural Gas injects an odorant called mercaptan into the gas before it is inserted into the distribution system. Mercaptan gives off a foul smell, reminiscent of rotten eggs or sulfur.

Scratch this egg with your fingernail and sniff the gas odor.

Rasguñe esta huevo con su uña y huela el olor del gas.

What To Do In Case Of A Natural Gas Leak

A natural gas leak can be dangerous because it increases the risk of fire or explosion. Here are safety rules to follow if you smell the odor of mercaptan.

Aquí están las reglas de seguridad si huele el olor a mercaptán.

DON'T / no hacer

- **Turn on or turn off any lights or electrical switches, or unplug appliances.**
  encienda las luces o los interruptores eléctricos, o desenchufe los electrodomésticos.
- **Smoke or use e-cigarettes, lighters, matches or other open flames.**
  Fume o use cigarrillos electrónicos, encendedores, fósforos u otras llamas abiertas.
- **Turn on or off any battery-powered, rechargeable or electrical device, including phones, garage door openers, radios, TVs, computers or any device that could create a spark.**
  encienda o apague cualquier dispositivo con pilas, recargable o eléctrico.
- **Use telephones of any type, including cordless, cell or landline.**
  use teléfonos de cualquier tipo, incluidos teléfonos inalámbricos, celulares o fijos.

DO / hacer

- **Have occupants exit the building immediately.**
  haga que los ocupantes salgan del edificio inmediatamente.
- **If you are outside, leave the area immediately.**
  si está afuera, abandone el área inmediatamente.
- **Go to a safe location and call Cascade Natural Gas at 888-522-1130.**
  vaya a otro lugar y llame a Cascade Natural Gas al 888-522-1130.
- **Keep away until given the "all clear" from a gas company employee or emergency official.**
  manténgase alejado hasta que el empleado de la compañía de gas o el oficial de emergencia le dé el visto bueno.

888-522-1130 | www.cngc.com |

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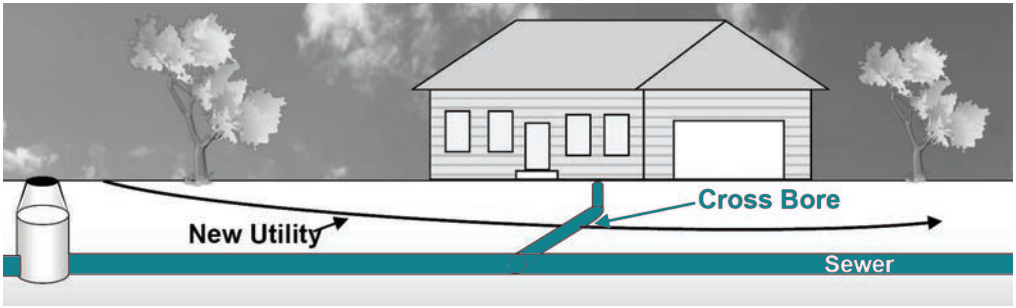
11/2019

CALL BEFORE YOU CLEAR

ALWAYS CALL CASCADE NATURAL GAS BEFORE CLEARING A SEWER LINE



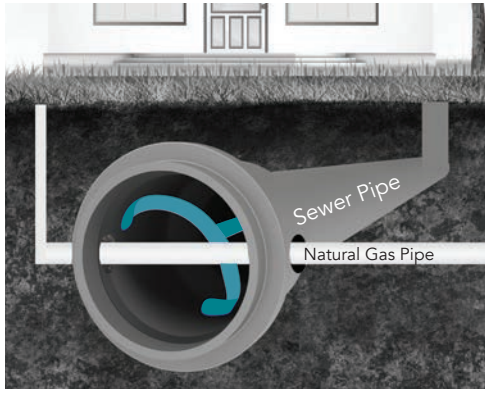
There is a possibility that our gas pipeline may cross through the sewer pipe on your property. This is called a cross bore and occurs when trenchless technology was used to install underground utility lines.

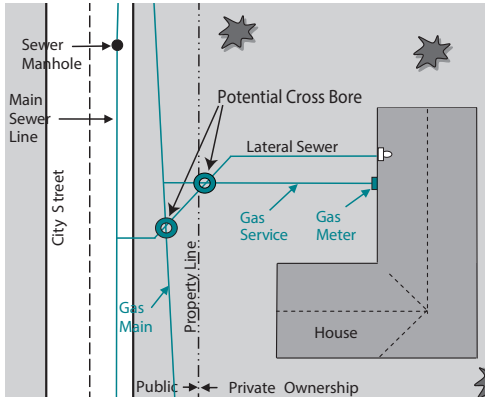
Plumbers and homeowners often use a rotating cutter that can be inserted in the sewer line to clear a clog . While good for clearing out objects such as tree roots, these devices can also cut through natural gas pipelines and other underground utility lines that were unintentionally installed through sewer lines that were not mapped or installed with locating technology.

If a cross bore exists, it can cause a natural gas emergency if the pipeline is cut. Natural gas could enter the sewer system and create a hazardous situation, including explosion, complete destruction of the structure, injury, or death.

FOR YOUR SAFETY:

- Call Cascade Natural Gas at **888-522-1130** prior to clearing your sewer line. We will promptly arrive to locate and mark our natural gas pipelines, free of charge.
- Never clear a sewer line until the clog has been identified.
- If you notice bubbles rising in the toilet bowl or through standing water, or a strong odor of natural gas, immediately evacuate the premises leaving the exit door open.
- From a safe distance, call 911 and Cascade Natural Gas at **888-522-1130**.





For additional cross bore information, check out the Cross Bore Safety Association website: crossboresafety.org or the Call Before You Clear website: callbeforeyouclear.com

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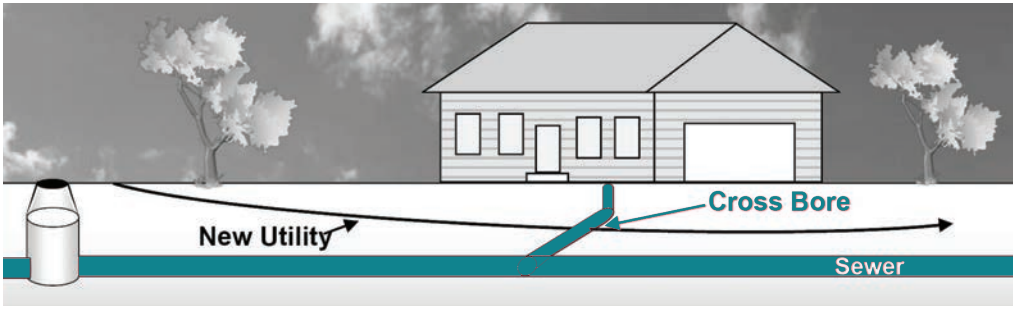
LLAME ANTES DE DESPEJAR

SIEMPRE LLAME AL CASCADE NATURAL GAS ANTES DE LIMPIAR UNA LINEA DE ALCANTARILLADO



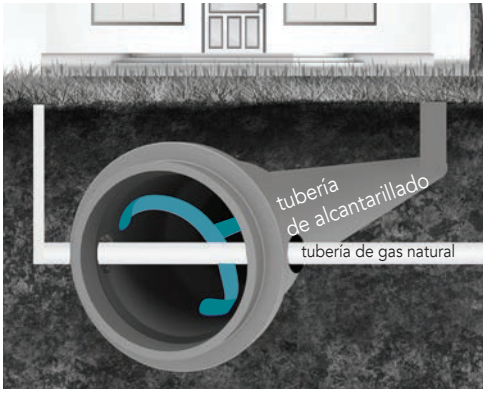
Existe la posibilidad de que nuestro línea de gas pueda cruzar a través de la tubería de alcantarillado en su propiedad. Esto se llama un agujero cruzado y ocurre cuando se utilizó la tecnología sin zanjas para instalar líneas de servicios públicos subterráneas.

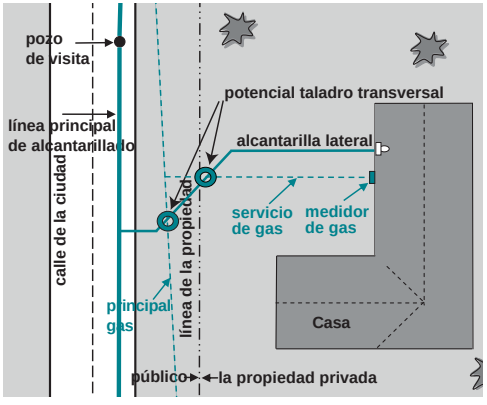
Los fontaneros y propietarios a menudo utilizan una cortadora giratoria que se puede insertar en la línea de alcantarillado para limpiar un obstrucción. Si bien son buenos para eliminar objetos como las raíces de los árboles, estos dispositivos también pueden cortar a través de tuberías de gas natural y otras líneas de servicios públicos subterráneos que se instalaron involuntariamente a través de líneas de alcantarillado que no se mapearon ni instalaron con tecnología de localización.

Si existe un agujero cruzado, puede causar una emergencia de gas natural si se corta el gasoducto. El gas natural podría entrar en el sistema de alcantarillado y crear una situación peligrosa, incluyendo la explosión, la destrucción completa de la estructura, lesiones o la muerte.

PARA SU SEGURIDAD:

- Llame a Cascade Natural Gas al **888-522-1130** antes de limpiar su línea de alcantarillado. Llegaremos rápidamente para localizar y marcar nuestros gasoductos de gas natural, de forma gratuita.
- Nunca despeje una línea de alcantarillado hasta que se haya identificado la obstrucción.
- Si observa burbujas que se elevan en el inodoro o a través de agua estancada, o un fuerte olor a gas natural, evacúe inmediatamente las instalaciones dejando la puerta de salida abierta.
- Desde una distancia segura, llame al 911 y Cascade Natural Gas al **888-522-1130**.





Para obtener información adicional sobre el diámetro interior, consulte la página de internet de Cross Bore Safety Association: crossboresafety.org o la Llamada Antes De Borrar página de internet: callbeforeyouclear.com

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Your Gas Piping

Important Customer Information

The house piping from Cascade Natural Gas' meter to an appliance belongs to the customer; maintenance of the house piping is the customer's responsibility. Be sure it is the proper kind of pipe and that it is installed, tested, and maintained in accordance with applicable state and local piping codes. The piping should be installed by a qualified person and inspected by local building officials. Avoid burying house piping under buildings or placing structures on top of natural gas lines whenever possible. The installer and building official can provide specific, detailed requirements for installation. Plumbing contractors and heating contractors can assist in inspecting and repairing the house piping. If existing underground piping is not installed to current code standards, it may represent a hazard.

Particular attention should be given to protecting any underground house piping from corrosion. If the piping is not maintained, it may be subject to the potential hazards of corrosion leakage. Piping should be periodically inspected for leaks and corrosion. A repair must be made if any unsafe condition is discovered.

Call 811 two business days before digging to alert utilities to locate and mark THEIR buried lines from the street to your house. This is a free service. These locates do not include house piping you may have installed to your property and must be located by a private company. Dig carefully by hand within 24 inches of the marked pipeline.

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SU TUBERÍA DE GAS

Importante Información del cliente

Toda aquella tubería desde el medidor de Cascade Natural Gas hasta los electrodomésticos en su hogar son propiedad del dueño de casa, cuales mantenimiento y responsabilidad son del propietario. Asegúrese que el tipo de tuberías que use sean apropiables, instaladas, probadas y mantenidas en conforme con aplicables códigos de tuberías locales y estatales. La instalación de la tubería debe ser el trabajo de un contratista clasificado e inspeccionada por funcionarios locales de construcción. Evite enterrar las tuberías de la casa debajo de edificios o colocar estructuras sobre las líneas de gas natural siempre que sea posible. Un contratista o funcionario de construcción puede proporcionarle detalles y requisitos específicos. Unos contratistas de plomería o calefacción pueden asistirle en inspeccionar o proporcionarle reparaciones de tuberías en su casa. Si la existente tubería subterránea no está instalada según a los estándares de código actuales, puede representar un peligro.

Debe prestarse atención en particular, a la protección contra la corrosión a cualquier tubería subterránea. Si la tubería no se mantiene, puede ser sujeto a los potenciales peligros de fuga por la corrosión. Las tuberías deben ser inspeccionadas periódicamente para detectar fugas y o corrosión. Se deben realizar reparaciones si se descubren condiciones inseguras.

Llame al 811 dos días hábiles antes de excavar para alertar a los servicios públicos que localicen y marquen sus líneas subterráneas de la calle a su casa. El servicio es gratuito y no incluye localizar líneas subterráneas instaladas por el propietario que deben ser localizadas por un contratista privado. Excave a mano con precaución dentro de 24 pulgadas de las líneas marcada.

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