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REPORT NAME: 2023 Natural Gas Safety Project Plan - Oregon

COMPANY NAME: Avista Utilities

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Report is required by:	☐ OAR	Enter Rule number; e.g., 860-039-0070
	☐ Statute	Enter Statute; e.g., ORS 757.135
	☒ Order	Order 17-084
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If Yes, enter docket number: UM 1722

Key words: Natual Gas Safety Project Plan

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September 19, 2023

Oregon Public Utility Commission
Filing Center
201 High St SE Suite 100
PO Box 1088
Salem, OR 97301

RE: Avista Utilities 2023 Natural Gas Safety Project Plan

Avista Corporation, dba Avista Utilities ("Avista" or "Company"), submits its 2023 Natural Gas Safety Project Plan in compliance with Commission Order 17 084. Among other matters 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 Avista'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. If you have any questions regarding this filing, please contact Amanda Ghering at (509) 495-7950 or amanda.ghering@avistacorp.com.

Sincerely,

/s/ Shawn Bonfield

Senior Manager, Regulatory Policy & Strategy

Avista Utilities

Natural Gas Safety Project Plan - Oregon

September 2023

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I. INTRODUCTION

On March 6, 2017, the Oregon Public Utilities Commission (Commission) issued Order 17-084, which in part required each of the natural gas distribution companies serving customers in Oregon to file with the Commission by September 30th each year an annual "Safety Project Plan" (Plan).[1] The purpose of the Plan is to increase transparency into the investments made by each utility, based predominantly on achieving important safety objectives. More specifically, the Plan intends to achieve the following objectives:

1. Explain capital and operating expenses needed to mitigate safety issues identified by risk analysis or to comply with federal and state rules.
2. Demonstrate the utility's commitment to safety and priority to its customers.
3. Provide a non-technical explanation of primary safety reports each utility is required to file with the Commission's pipeline safety staff.
4. Identify major state and federal regulatory changes that impact the utility's safety programs and investments.

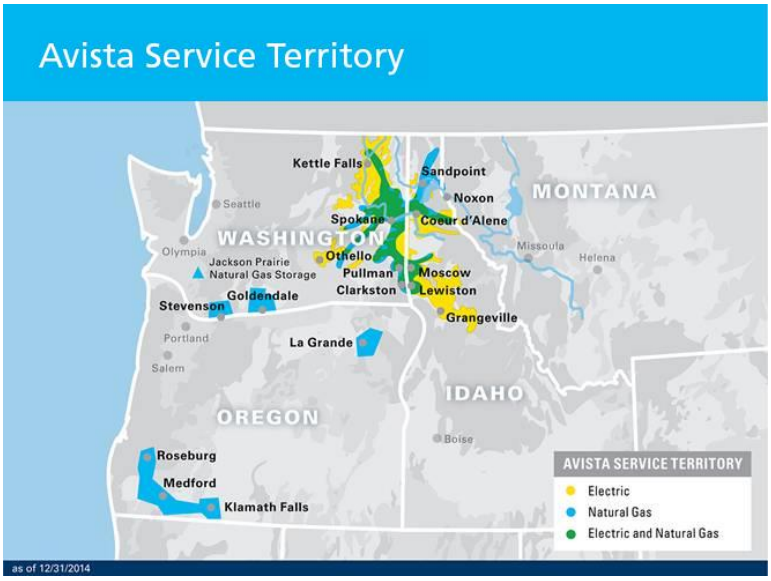
In meeting these objectives, the Plan provides an annual "snapshot" of the utility's expected investments in its identified safety programs along with the activities planned for each program over a period of 12 months. The Plan also includes a brief description of each safety program or initiative, the risks being addressed, a description of any supporting analysis, the costs and benefits, and an explanation of any program changes from the prior reporting year.

Importantly, the annual Plan is not intended to replicate the analysis performed to satisfy the utility's Distribution and Transmission Integrity Management Plans (DIMP and TIMP, respectively). Neither will the Plan provide in-depth descriptions of the analytical methods used to evaluate safety risks or replicate filings each utility already makes with the Commission's pipeline safety staff. In this respect, the annual Safety Project Plan has been deemed by the Commission to be an "informational report" to help the Commission better understand upcoming safety investments planned by each company, and as such, the Commission will not take any action on these informal plans. As detailed in Order No. 17-084, "the inclusion of a safety-related project in the Safety Project Plan (SPP) is not a prerequisite to recovery of the costs associated with that project in a GRC. Further, the SPP process does not change the standard for a prudence review in

[1] Order of the Public Utility Commission of Oregon in Docket UM 1722, Investigation into Recovery of Safety Costs by Natural Gas Utilities. March 6, 2017.

a GRC, with respect to either the costs of the project or the determination to proceed with the project."[2]

Avista serves approximately 378,000 natural gas customers in the states of Oregon, Washington and Idaho over an extensive service territory highlighted on the map to the right. The Company has served natural gas in Oregon since 1991 when it acquired the natural gas properties of Alltel/CP National in and around the communities of La Grande, Roseburg, Medford, and Klamath Falls.



II. AVISTA'S PERSPECTIVE ON SAFETY INVESTMENTS

Providing service to its customers, Avista relies on complex infrastructure systems designed, built, operated, and maintained to achieve a range of important objectives. Nearly every infrastructure investment the Company makes has at least some relationship to providing "safe" and "reliable" service, though very few of them are made exclusively to achieve a safety or reliability objective.[3] For the purposes of this Plan the Company distinguishes between:

1. **Recognized Safety Programs** – Those investments made to comply with federal and state-mandated programs, and other programs that have a primary safety emphasis.
2. **Safety as a Key Factor** – Investments intended to achieve other objectives than safety but that have a strong emphasis on public, customer, and employee safety.
3. **Safety as a Minor Factor** – Programs with primary objectives other than safety.

[2] UM 1722, Order No. 17-084 at ¶24.

[3] For example, when Avista replaces worn equipment at the end of its useful life the new equipment is more safe and more reliable than the old, but the investments are made to meet the predominant objective of replacing plant based on asset condition. The word predominant is used because end of life asset replacements will generally be made as planned *regardless* of whether there is an attendant safety or reliability benefit. On the other hand, true safety and reliability investments are those that would likely *not be made* absent the safety or reliability objectives they are intended to achieve.

Consideration of safety is either not a factor or is only one of many considerations guiding the investment.

Avista has included Recognized Safety Programs and programs where Safety is a Key Factor in this Plan.

III. OVERARCHING FEDERAL SAFETY REGULATIONS

Avista, like all other natural gas distribution utilities, is subject to a range of federal and state safety regulations, industry standards and practices, as well as its own operating requirements. While these regulations, rules, and standards are designed to achieve multiple objectives (e.g. environmental protection, security, and reliability), the safety of citizens, customers, and employees is a primary focus. The overarching rules governing pipeline safety are developed and implemented by the Pipeline and Hazardous Materials Safety Administration (PHMSA) of the U.S. Department of Transportation and are contained in the Code of Federal Regulations (CFR), Title 49, Parts 190-199. These federal regulations continuously evolve to address existing issues more effectively as well as new threats that continue to emerge over time. In addition to developing the rules, the agency also administers and enforces them. States such as Oregon are also engaged in the business of ensuring the safe operation of natural gas systems and play a companion role in the implementation and administration of these federal regulations.

IV. RECOGNIZED SAFETY PROGRAMS

Distribution and Transmission Integrity Management Plans

In recent years, PHMSA has moved beyond the enforcement of individual rules to require natural gas utilities to conduct a standardized assessment of risks threatening the integrity of their pipeline systems. Known as the DIMP and TIMP, these requirements were enabled by amendments to the Federal Pipeline Safety Regulations on December 4, 2009, and December 15, 2003, respectively.

Distribution Integrity Management – The purpose of these plans is to enhance pipeline safety by identifying and reducing potential integrity risks on an operator's natural gas distribution system. Operators must base their analysis on reasonably available information about their pipelines as the basis of informing their risk decisions. The rule, symbolized in the diagram at left, requires operators to prioritize the risks identified in their planning process and to focus remediation activities on those that could result in an incident(s) that could cause serious consequences. Finally, the rule also requires that operators implement a program to provide greater assurance of the integrity of their pipeline systems. This requirement is designed to promote continuous improvement in pipeline safety by requiring operators to identify and invest in risk control measures that go beyond previously established regulatory requirements.

Avista's DIMP - Managing the integrity, safety and reliability of gas distribution pipelines has always been a primary goal for Avista, ensuring design, construction, operations, and maintenance activities are compliant with state and federal requirements. Meeting these requirements is a key part of Avista's goal to protect the health and safety of its customers, employees, and the communities it serves. Avista's DIMP establishes the requirements for compliance with the regulations and addresses the following key elements:

- Knowledge
- Identify Threats
- Evaluate and Rank Risks
- Identify and Implement Measures to Address Risks
- Measure Performance, Monitor Results, and Evaluate Effectiveness
- Periodic Evaluation and Improvement
- Report Results

The results of Avista's DIMP for its Oregon natural gas operations (including Transmission risks) have identified the following five priority risks (referred to as "sub-threats") to Avista's system.

Oregon Risk Ranking of Sub-Threats (Transmission & Distribution Combined)

1. Excavation Damage
2. Other Outside Force – Vehicle Damage to Aboveground Facilities
3. Natural Forces – Snow and Ice
4. Meter Set Assembly (MSA) Equipment
5. Incorrect Operations – Sewer Cross-bore

Transmission Integrity Management – As noted above, and as directed by the Pipeline Safety Act of 2002, PHMSA amended the Federal Pipeline Safety Regulations on December 15, 2003 by adding Subpart O – Gas Transmission Pipeline Integrity Management. The addition required operators of natural gas transmission pipelines to create a Transmission Integrity Management Program. The purpose of the program is to ensure the safe, reliable, and cost-effective transportation of natural gas for customers without adverse effects on the public, customers, employees, and the environment. This program provides for the comprehensive, integrated, and systematic management of pipeline integrity in high consequence areas (HCA) as a means to improve the safety of applicable pipeline systems.

As with Distribution Integrity Management, the Transmission Integrity Management Program provides the necessary framework for Avista to assess and mitigate risks in order to reduce both the likelihood and consequences of pipeline failures. This process enables the Company to effectively allocate resources to appropriate prevention, detection, and mitigation activities that will result in improved integrity and safety. The TIMP requires primary Company documents for the management of its natural gas system to be referenced and incorporated into the Plan, and as part of the Plan, procedures and standards are reviewed and modified as necessary. These primary documents include:

- Avista Utilities Gas Emergency and Service Handbook;
- Avista Utilities Gas Standards Manual;
- Avista Utilities Public Awareness Program; and

- Avista Utilities Operator Qualification Program.

In the development and implementation of the TIMP, Avista has adopted a set of principles that guide the intent and specific details of the plan. These principles are summarized below:

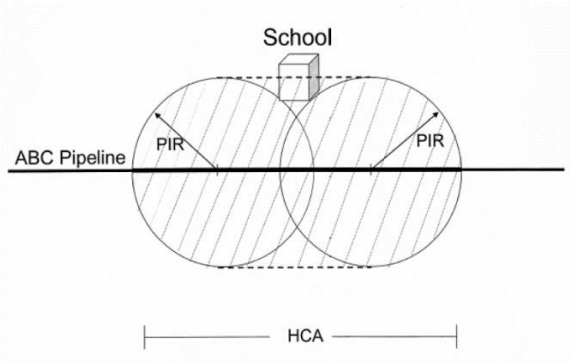
- Functional requirements for integrity management shall be engineered into new pipeline systems from initial planning, design, material selection, installation and initial inspection and testing.
- System integrity requires commitment by all operating personnel using systematic, comprehensive, and integrated processes in order to safely operate and maintain the pipeline systems.
- The TIMP will continuously evolve and improve which is intended to be flexible. Periodic evaluations are conducted to ensure the program takes appropriate advantage of improvements in technologies, and that the program utilizes appropriate prevention, detection, and mitigation activities.
- The integration of information is recognized as a key component for managing system integrity. Avista is committed to analyzing all pertinent information in order to effectively manage pipeline integrity.
- Avista has developed a relative risk assessment methodology and uses that methodology to determine the types of adverse events or conditions that may impact pipeline integrity. The process is also used to rank the pipeline segments for further assessment by considering the likelihood and consequence of an adverse event.
- Avista is committed to staying abreast of new knowledge and technologies affecting pipeline integrity, evaluating those technologies, and implementing them where appropriate. Avista personnel attend meetings and conferences and perform literature searches in order to investigate and then evaluate the use of new technologies for specific application in the integrity management program.
- Avista has determined the set of performance measures that best serve the need for monitoring and evaluating the effectiveness of the integrity management program.
- Avista is committed to communicating the results of its integrity management activities to its stakeholders.

- Non-mandatory requirements from industry standards or other documents invoked by Subpart O (i.e., ASME B31.8S and NACE SP0502) are incorporated into the TIMP and implemented as recommended in the standard.

Avista's DIMP and TIMP are submitted to the Oregon Commission's pipeline safety staff each year.

Planned Activities for 2024 – Avista will continue its regular leak data gathering, review, and analyses for both distribution and transmission integrity management planning. For distribution, Avista is currently implementing a new probabilistic risk model provided by JANA, an integrity management consultant, which will be completed in 2023. Avista will complete its annual review and revisions to its accelerated actions in relation to the current leak data analysis and the new risk model and will publish these results in its annual distribution integrity management manual. For transmission, Avista will continue to work with Dynamic Risk as a consultant who performs the Company's class location, high consequence area (HCA), and Moderate Consequence Area (MCA) analyses and its transmission risk analysis. An example of a high consequence area analysis is depicted in the following diagram.

Figure 1: Determining High Consequence Area



Planned or Anticipated Changes to the Program for 2024 – Avista is currently implementing a new probabilistic risk model provided by JANA which will be completed in 2023. The new model will provide greater analysis into the risk associated with each gas asset and help in recommending future projects that will reduce the overall risk in Avista's gas system and ideally prevent future leaks before they occur.

Expenses for preparing Avista's DIMP and TIMP, as allocated to Oregon, are approximately $300,000 for 2024. These expenditures fund the processing and preparation of the plans and producing the annual reports. Implementation of measures to address key threats are funded under the respective programs responsible for their implementation.

Avista's Excavation Damage Prevention Program

As noted above, the number one safety and integrity threat to Avista's natural gas system results from accidental damage to underground facilities, referred to as "dig-ins," caused by third parties excavating in the vicinity of Avista's underground pipelines. Avista and the natural gas industry are actively combatting this threat through a comprehensive public communication campaign known as the "811" or "Call Before You Dig" program. The purpose of Avista's Damage Prevention Program and customer awareness activities is to increase public and employee safety by reducing the number of hazardous excavation damages to Avista's natural gas (and electric) facilities. Avista communicates, cooperates, and coordinates with government agencies, utilities, contractors, engineers, customers, and the general public through a membership in the "811 One-Call" centers and through other communication, education, and awareness initiatives. In addition to reducing the overall damage to Avista's system, the Company also strives to meet the following objectives:

- Ensure adherence to federal and state regulations;
- Ensure adherence to Avista's standards, policies, and procedures;
- Provide standby oversight during excavation near transmission, higher-pressure pipelines, and critical large diameter pipelines;
- Identify areas in Avista's standards for damage prevention, such as locating, tracking of damages, and training that needs to be updated or clarified;
- Manage quality control of Avista's contract locating services and monitor contract requirements for locators;

- Develop and provide training to increase awareness of the potential hazards to appropriate personnel and third-party contractors working near and around Avista facilities;
- Provide program data and updates to appropriate key stakeholders; and,
- Develop, analyze, and track performance metrics related to the program.

Overview of Communications and Outreach

- 'Safe Excavation in Our Neighborhood' brochure – This informative brochure is provided to commercial excavators and contractors within Avista's service territory. Based on recommendations from the 2017 Public Awareness Program Effectiveness Survey, Avista increased its outreach to excavators. This brochure is physically mailed in the spring to avoid the busy construction season and gain more attention. A copy of the *Safe Excavation* brochure is provided in Appendix A. In addition, excavators receive a quarterly '*Tips of the Trade*' email, which provides information on various industry topics and an Excavator Safety Guide. The email campaign and safety guide are provided via a third-party vendor, Culver Co. and Pipeline Association for Public Awareness (PAPA), respectively.
- 'Landscapers! Don't dig into buried utilities' brochure – Avista created a specific brochure for landscapers who often are the ones installing sprinkler lines and plants who may not consider themselves excavators. This brochure draws their attention to make sure they call 811. A copy of the brochure is provided in Appendix B.
- 'Tips of the Trade' digital campaign – This email is sent quarterly to excavators in an attempt to reach the stakeholders who want easily accessible information on their phone. Avista contracts this service through a third-party vendor, Culver Company. The Company's public safety specialist and Underground Facility Damage Prevention Administrator coordinate the content used in these emails. A copy of the email is included as Appendix C.
- 'Safe Excavation Tips' checklist - When a dig-in occurs within the Company's system, Avista personnel responding to the emergency call typically give the excavator on site a copy of the Safe Excavation Tips sheet, included as Appendix D.

- ‘Fence builders! Watch out for buried utility lines’ brochure - Avista created a brochure for fence builders so they are not overlooking the importance of utilizing 811 by not considering themselves excavators (dirt movers). A copy of the brochure is included in Appendix E.
- ‘Avista Pipeline Damage Tips’ card – A business card size document was created to cover 811 and steps to take in the event of a damaged gas pipeline. A copy of the card is included in Appendix F.
- ‘Excavator Safety Guide’ publication – This magazine is published by PAPA and is provided once each year to commercial excavators and contractors in the counties in which Avista operates. A copy of the front cover of the magazine is provided in Appendix G. This publication is mailed in the spring to avoid the busy construction season.

Avista Damage Prevention General Communications – The Company distributes a range of other education and outreach materials each year to the following groups:

- Avista Customers – Affected Public;
- Public in the Vicinity of Projects;
- Emergency Responders;
- Excavators/Contractors/Farmers/Fence Builders and Landscapers;
- Public Officials;
- Railroads; and,
- Schools – targeting the third through sixth grades, providing instruction materials to teachers and students.

Avista offers a Natural Gas Safety brochure written in Spanish, which is included as Appendix H.

Digital Outreach - Starting in 2019, Avista contracted with a third-party to do digital outreach with 811 to provide public safety messaging every quarter (Safe Digging Tips Newsletter). This email targets key issues found based on excavation damage trending data. Avista also shares this digital outreach with its employees.

Media Outreach – Advertising and outreach materials are distributed broadly through a range of

media outlets each year in Washington, Idaho, and Oregon, including online banners (also called online marketing), radio, YouTube and promotional projects such as the 811 partnership with Papa Murphy's. Avista also partners with different organizations to advertise the 811 Call Before You Dig program, such as local and state Utility Coordinating Councils, PAPA, Pipeline Association of the Northwest (PANW), and special features like JJ the Rodeo Clown (pictured at left) who educates attendees at rodeos held across the state of Oregon.

The first chart below shows Avista's trend with pipeline damages in Oregon for the last ten years of the Company's Excavation and Damage Prevention Program. The second chart shows these annual damages by excavation cause category.

Figure 2: 10 Year Trend of Damage/Locate Ratios - Oregon

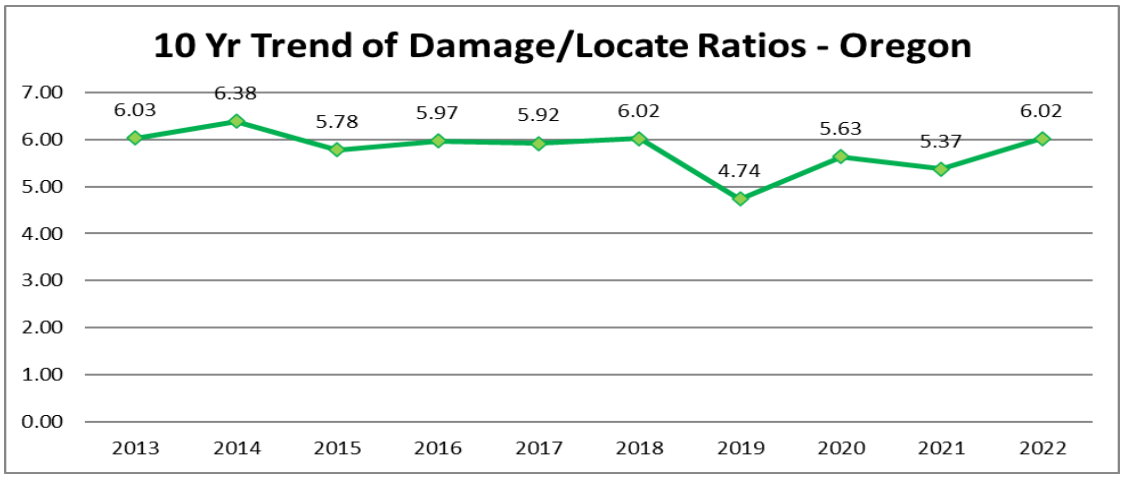
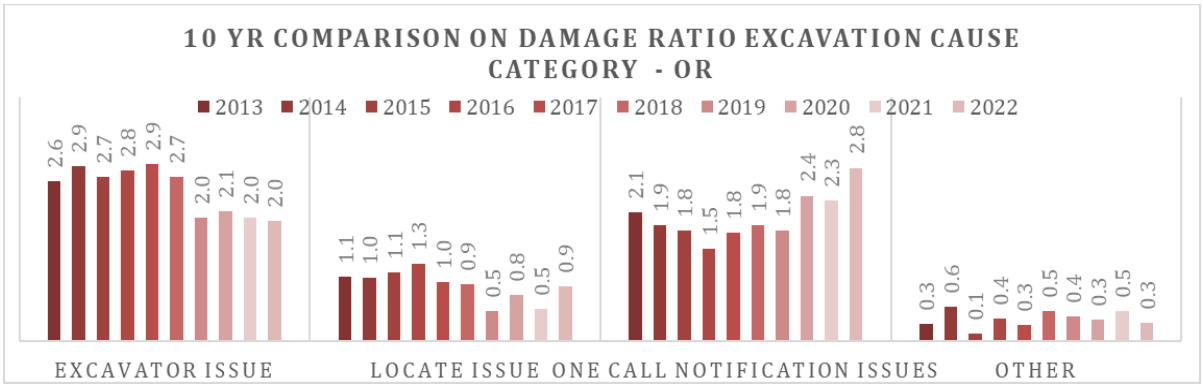


Figure 3: 10 Year Comparison on DAMAGE Ratio Excavation Caused - Oregon



Planned Activities in 2024 – Avista continues to collaborate with other organizations to spread the public safety message through outreach mailings, media, in-person events and other activities. "No Locates Requested" continues to be a large root cause for third-party excavation damage. To further inform the excavation community, Avista will be distributing a brochure outlining data and information pertinent to requesting locates as well as potential ramifications of not doing so. Avista continues its targeted focus on auditing the performance of contract locators through the Quality Assurance Department. These audits help identify program gaps, enhancements to locating processes, and aids in the accuracy of locates. Additionally, the Company will benchmark KPI metrics for Avista's locating contractor. Avista identified missed locates which did not result in any damages, as data not being captured. As a result, the Company created a process to document these incidents for review and trending analysis. Avista also focused on repeat offenders by utilizing the Oregon complaint process. Avista developed an 811 locate ticket risk ranking software in 2020 and piloted the software and new standby form in Medford to work through issues and then rolled the implementation of this software out to the other operating districts. This software identifies high risk locate tickets based on certain criteria such as location, population density and facility type. Once high-risk tickets are identified, field personnel contact the excavator to determine if the Company's facilities will be affected and if so, Avista personnel will be onsite while excavating near its facilities. This also provides an opportunity for education of the Oregon dig laws. Lastly, the Company plans to incorporate an internal campaign for Avista employees to be more involved in 811 promotion, utility damage awareness, and damage prevention actions.

Planned or Anticipated Changes to the Program for 2024 – Beyond implementing any program changes based on the results of its effectiveness survey and focus group sessions, Avista does not anticipate any other material program changes. Avista will continue to collaborate with other organizations to spread the public safety message, and continue to do the outreach mailings, media, in-person events, locating audits and filing complaints on repeat offenders and activities similar to 2023.

Avista's expected 2024 expenses for its Damage Prevention Program and customer awareness communications in Oregon are approximately $370,900 in capital and $962,200 in O&M expenses.

The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

Cathodic Protection Program

Overview of Cathodic Protection Program - The purpose of the Cathodic Protection (CP) program is to provide additional protection to Avista's buried steel pipe from the effects of natural corrosion. Cathodic protection works by utilizing a low voltage DC current source, providing an excess number of electrons on the surface of the steel pipeline. By providing this excess amount of electrons on the surface of the pipeline, an electrical attraction is created with the chemicals in the soil resulting in an electro-chemical reaction creating a neutral PH level (7) at the surface of the pipeline, which results in a corrosion free zone at the surface of the pipeline. This forced electrochemical process directs the corrosion process to a sacrificial metal, which protects the pipeline from corroding as long as the circuit and power source are properly maintained.

Even though steel pipelines coated with protective materials are effective in preventing corrosion, the cathodic protection system provides a safety net in the event this protective coating system is compromised. Cathodic protection systems are mandatory as required by the Code of Federal Regulations (CFR) 192.463, and this program is an important element of Avista's focus on reducing the second priority threat to the integrity of its system from external corrosion.

The Company's cathodic protection technicians are responsible for ensuring Avista's pipelines comply with these regulations, and that these systems are performing properly. Cathodic protection technicians take the lead in implementing corrective actions when problems arise. These technicians, shown in the photograph above, are continuously striving to upgrade and improve the efficiency of Avista's cathodic protection systems.

Zone Isolation Points and Zone Management - Avista manages multiple cathodic protection zones across its three-state service territory. “Isolation Fittings” are utilized to electrically isolate each zone (i.e., electric current is prevented from flowing between any adjacent zones). The size of these zones is monitored and managed each year, resulting in zone boundaries being maintained in their current state, or alternatively, divided or consolidated as appropriate.

Other Program Elements - In addition to zone management, the Company’s cathodic protection technicians are responsible for the following activities:

- Pipe Casings Monitoring;
- Bi-Monthly Rectifier Maintenance and Operation;
- Anode Bed Replacements;
- Annual Surveys; and,
- Isolated Steel < / > 100’in Length Monitoring

Inspection and Other Requirements - Under federal and state regulatory rules, cathodic protection programs are subject to mandated inspection activities, initiation of inspection, and frequency of inspection requirements.

Planned Activities for 2024 – Avista will continue to monitor its cathodic protection systems and perform testing throughout the year. On average, one or two anode beds must be replaced each year due to anode consumption. These replacement projects are typically scheduled for construction during the summer.

Planned or Anticipated Changes to the Program for 2024 – There are no program changes anticipated for 2023.

Expected 2024 expenses for this program in Oregon are approximately $105,000 in capital and $200,000 in O&M expenses. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

Atmospheric Corrosion Program

A companion part of the Company's response to the potential for external corrosion is the Atmospheric Corrosion Inspection Program (Atmospheric Corrosion). Similar to cathodic protection, this program is a requirement of federal regulation 49 CFR 192.481, which directs the pipeline operator to inspect its natural gas infrastructure exposed to the atmosphere for evidence of corrosion at least once every five years. The Company previously conducted the Atmospheric Corrosion Program systematically, by state, and by operations district, in a three-year cycle. Avista is currently in the process of shifting from the historic three-year cycle to a five-year cycle, meeting minimum federal regulations. The Company anticipates completing this transition by 2025. Avista's Atmospheric Corrosion Program is managed by the Natural Gas Programs Manager and the Atmospheric Corrosion Program Administrator. Field inspections are completed by contractors specializing in this activity.

At some service locations, the inspections identify "abnormal operating conditions," which are those that exceed standard requirements and require mitigation to correct. Avista field personnel remediate these abnormal conditions on a pre-determined compliance timeline. The local construction office schedules and manages these remediation efforts. Some examples of abnormal conditions include buried meters and service valves, corroded risers, and risers in need of protective wrap (protecting the riser from soil). In addition, Avista also monitors, identifies, and mitigates several "continuing surveillance" items under the Atmospheric Corrosion Program. Examples of the continuing surveillance items include settled meter sets, overbuilt meters, and meters in need of barrier protection from vehicle damage.

Planned Activities for 2023 – Avista will continue its practice of inspecting facilities in at least one fifth of its Oregon service territory annually on a rotating schedule, which ensures inspections of each meter and riser at least once every five years. Remediation work is completed in accordance with the specified compliance timeline.

Planned or Anticipated Changes to the Program for 2024 – Avista continues to work on transitioning from a one third to a one fifth rotating inspection schedule, inspecting each meter and riser at least once every five years.

Avista's does not anticipate any capital expenses for 2024 and expects approximately $220,000 in O&M expenses for this program in Oregon. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

Leak Survey Program

The Company's Leak Survey Program is mandated by federal regulation 49 CFR 192.723 and requires the utility to survey its system for potential leaks using specialized equipment that can detect trace amounts of natural gas. These surveys must be performed in business districts at least once each calendar year, but at intervals not exceeding 15 months. Surveys include tests of the atmosphere in natural gas, electric, telephone, sewer, and water system manholes, at cracks in pavement and sidewalks, and at other locations that provide an opportunity for finding gas leaks. Outside business districts, leak surveys must be conducted as frequently as necessary, but at least once every five calendar years, and at intervals not exceeding 63 months. The utility may also survey natural gas facilities on a more frequent basis, such as Avista's Priority Aldyl-A piping and high-pressure mains, where Avista leak surveys the facilities annually. Overall, Avista surveys its natural gas facilities in business districts, high occupancy structures and high occupancy areas, and 20 percent (one fifth) of its residential services each year. All of Avista's residential natural gas facilities are surveyed at least once every five calendar years. Avista's Leak Survey Program is managed by the Natural Gas Programs Manager and the Leak Survey Program Administrator. Field survey is completed by contractors specializing in this activity.

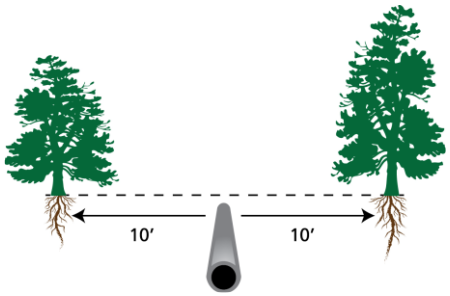
Avista field personnel remediate the detected leaks based on the grade of the leak and its required compliance timeline. The local construction office schedules and manages the remediation efforts. In general, Grade 1 leaks are repaired immediately, Grade 2 leaks are typically repaired within six months of discovery, and Grade 3 leaks are typically repaired within one year of discovery.

Planned Activities for 2023 – Avista will continue the Leak Survey Program in the state of Oregon at the above-listed intervals and will remediate all leaks within their respective compliance timeframes.

Planned or Anticipated Changes to the Program for 2024 – There are no program changes anticipated for 2024.

Avista does not anticipate any capital expenses in 2024 pertaining to this program and expects approximately $620,000 in O&M expenses for this program in Oregon. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

Right of Way Clearing Program



As part of its high-pressure pipeline maintenance program Avista must clear trees and other large woody materials from the rights of way of its buried lines. Tree roots can wrap around natural gas pipes as shown in the photo below, can damage protective coatings and interfere with cathodic protection systems, increasing the risk of potential pipe failure and leaks. The clearance zone measures ten feet on either side of the pipeline for a total clear zone of 20 feet. The Company surveys rights of way for its high-pressure pipelines periodically and identifies the segments for clearing vegetation, which is performed during follow-up work by Avista's vegetation management contractor. In addition to maintaining rights of way, Avista works with customers to make them aware of the required work in their neighborhood and to encourage them to avoid planting trees in the clearance zone, as shown in the illustration above. These contacts and communications with customers also provide the opportunity to reinforce their awareness of pipeline safety, particularly with the need to call for utility locates before doing any digging or excavation. Avista performs right of way clearing on approximately 192 miles of natural gas pipeline in its Oregon service area.

Planned Activities for 2024 – Avista will perform vegetation removal on high pressure pipelines in 2023 as requested by each Operating Area per issues discovered during annual pipeline patrols.

Planned or Anticipated Changes to the Program for 2024 – There are no program changes anticipated for 2024.

Avista does not anticipate any 2024 capital expenditures for this program and expects approximately $60,000 in O&M expenses for this program in 2024. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

Natural Gas Pipe Overbuild Program

Among the safety standards contained in Title 49, Part 192 of the Federal Code of Regulations is the requirement to remove customer-installed encroachments or "overbuilds" that interfere with or prohibit the Company's ability to safely operate the gas system. Typically, an overbuild situation occurs when a structure is erected over the top of Avista's preexisting natural gas facilities. These structures or barriers prevent the Company from performing mandatory maintenance such as leak survey (as described above), which is typically performed by walking directly above the gas facilities while operating the leak detection equipment. Overbuild of piping not originally designed for that condition is also a violation of the federal code. This is because the construction does not meet the code requirement for installation of the pipeline within a sealed conduit that is vented outside the overlying structure.

Overbuilds present an increased risk to customers as well as operational risks to Avista employees because of the potential of leaking gas to migrate into or become entrapped within structures built over the line. Overbuilds also increase the Company's operating costs due to the

need to return to the overbuild location multiple times in an attempt to complete leak survey and other maintenance tasks.

Avista's program is focused primarily on overbuilt pipe in mobile home parks. Due to the dynamic nature of this housing, it represents an area of great risk because the dwellings can be easily sited over buried facilities. Because of their incidence, they also represent the greatest opportunity to cost effectively resolve these problems. However, because overbuilds are not isolated to mobile home parks, the Company conducts the program over its entire natural gas service area.

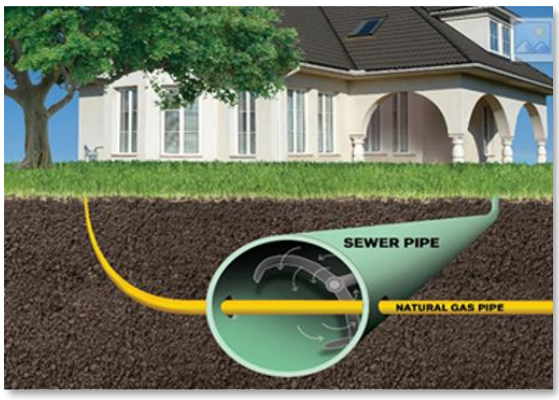
Planned Activities for 2024 – Avista will continue to mitigate known overbuilt conditions in each district to address the high-risk projects first, as determined by the Company's DIMP as new overbuilt areas are identified.

Planned or Anticipated Changes to the Program for 2024 – No program changes are anticipated for 2024.

Avista's expected 2024 expenses for this program in Oregon are approximately $412,000 in capital and $201,000 in O&M expenses. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

Gas Cross bore Post-Construction Inspection Program

In 2019, Avista began a Company-wide cross bore inspection program targeted specifically at finding instances where a gas line has been installed through a sewer line. In rare cases, when natural gas lines are installed by boring horizontally, they can cross or penetrate an undetected sewer line. This can happen if a sewer line wasn't mapped and couldn't be located on the property prior to the installation of the gas line. The safety risk created by a cross bore comes when the gas line causes the sewer to back up and the



homeowner or a plumber uses a rooter device to clean out the sewer line without checking for a cross bore first. The rooter equipment is designed not only to cut roots that have encroached within the sewer line but also is capable of cutting plastic gas lines as well, causing blowing gas to enter into the sewer line and potentially into the home and neighboring homes.

The sewer inspections are completed using camera technology that travels through the inside of the sewer lines which minimizes the disruption to the customer. At times, the contractor will need access to a customer's home to access the sewer lateral with their camera equipment. Contractors will set up an appointment with the customer to complete their inspection. If a cross bore is identified the contractor will notify Avista immediately and Avista personnel will be dispatched to the location to organize a reroute of the gas line and repairs to the sewer line.

Currently Avista's cross bore inspection contractor is only inspecting sewer mains and laterals in proximity to new construction projects and Aldyl-A replacement projects where some form of trenchless technology was used to install the gas facilities. Avista's gas cross bore inspection program is managed by the Natural Gas Programs Manager and Cross Bore Project Coordinator. Field inspections are completed by contractors specializing in this activity.

Planned Activities for 2024 – Avista will continue gas cross bore inspections of new construction projects and Aldyl-A replacement projects when trenchless forms of technology are used during installation. Avista did perform a legacy cross bore pilot project in 2020 to attempt to find and assess cross bore risk from older gas line installations. Prioritization of the legacy projects was calculated internally, and no cross bores were found during the pilot project. In 2024, Avista will continue with targeted, risk-based legacy inspections as part of the program.

Planned or Anticipated Changes to the Program for 2024 – There are no anticipated program changes for 2024.

Avista's expected 2024 expenses for this program in Oregon are approximately $690,000 in capital and $50,000 in O&M expenses. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

V. PROGRAMS WHERE SAFETY IS A KEY FACTOR

As noted above, the Company makes a range of investments in its systems each year to replace assets that are at or are nearing the end of their useful life (i.e., based on asset condition). While there is some element of safety and reliability in nearly every investment of this type, the predominant reason for the investment is to replace worn-out equipment that has provided a lifetime of useful service for customers. While the next two programs represent the replacement of assets based on condition, the safety of customers and employees is a priority consideration in determining how the programs are implemented and over what period of time.

Aldyl-A Pipe Replacement Program

Avista is continuing its planned program to systematically replace select portions of the DuPont Aldyl-A medium density polyethylene pipe in its natural gas distribution system. This work is accomplished by the Gas Facilities Replacement Program (GFRP), which is responsible for developing and managing projects in Oregon, Washington, and Idaho. Avista's Master Plan for this program, titled "Protocol for Managing Select Aldyl-A Pipe in Avista's Natural Gas System," provides the background on this pipe, the vintages and types of pipe slated for replacement. In 2022 a study was completed by Avista's Asset Management group which is titled "Study of Aldyl-A Pipe Leaks 2022" which describes the rationale and analysis for the proposed 25-year replacement program. None of the subject pipe is "high pressure main pipe", but rather, consists of distribution mains at maximum operating pressures of 60 psi and pipe diameters ranging from 1¼ to 4 inches. As part of this program, Avista has rebuilt or eliminated thousands of transition fittings used to connect Aldyl-A service piping (1/2 and 3/4-inch diameter) to steel tees that are welded to steel main pipe (service tee transitions). As of July 2023, there are 400 Service Tee Transition Rebuilds (STTRs) remaining in Oregon which are being actively worked by Avista's local district offices.

Nature of the Safety Risk – Early vintages of Aldyl-A pipe produced for natural gas service from the 1960s through the early 1980s are subject to "premature brittle-like cracking". This failure process results from a loss of 'ductility' or flexibility in the pipe material. Ductility is a fundamentally important property of polyethylene piping. Its loss allows small cracks to form on the inner wall of the pipe, which eventually propagate through the pipe wall, resulting in failure.

This tendency for brittle-like cracking renders the pipe more susceptible to failure over time than newer-generation polyethylene pipe, and this tendency to fail increases as the piping continues to age.

Completed Replacement Activities – Under guidance of the Master Plan, Avista began replacing 253 miles of select Aldyl-A piping in its Oregon service territory in 2012. While the GFRP's plan was to replace 102.4 miles (40%) of pipe via construction projects from 2012 through 2022, the actual amount of pipe replaced during this 11-year period totaled 71.7 miles (28%), a shortfall variance of 30.7 miles. Despite the shortfall via construction activities, Avista's system of record indicates that 119 miles (47%) in total has been replaced by the GFRP or otherwise removed during the same period by way of local district road projects, system repairs, and mapping corrections. From 2012 through 2017, approximately 6,650 service tee transitions were rebuilt in Oregon. Total capital investment for this work from 2012 through year-end 2022 was $ $61,834,806.

Construction Approach – Avista continues to complete the majority of its Aldyl-A replacement using contract crews and equipment. This approach is more cost efficient since this effort is focused, intensive, specialized, subject to seasonal constraints, and is adaptive to Avista's normal workload and staffing levels required for ongoing natural gas operations. As of January 2021, Michels Utility Services[4] became Avista's primary contractor for performing its Aldyl-A main pipe replacement and rebuilding service tee transitions. Michels' proven expertise of specialized natural gas construction techniques will be a valuable asset in Avista's efforts to complete work on time and cost effectively. Avista partners with Michels to refine their construction technologies allowing the Company to improve efficiency and cost effectiveness over time. Avista continues to employ keyhole technology in support of main pipe replacement work when installing new main pipe by the use of directional drilling. More specifically, in effort to avoid cross-boring or otherwise damaging adjacent utilities along the bore path, each utility is exposed, or windowed to visually ensure that the drill head clears each respective utility without conflict. From 2012 to the time of this report, this surgical and environmentally friendly approach has yielded approximately

[4] Michels operates in 40+ locations across the US and in Canada. Michels has a reputation for safe, high quality, and cost-effective construction services, including the installation or replacement of over 200 miles of natural gas main and roughly 10,000 services each year. Website: https://www.michels.us/market/gas-pipelines/

$8.1 million of road restoration cost avoidances as compared to the cost of conventional construction and road restoration.

Managing the Unit Costs of Replacement – Prior to initiating Avista's Aldyl-A pipe replacement program, Avista'a experience with pipe installation and the associated cost was almost exculsively with new construction. Since new construction most often involves installation of main pipe and service lines in new residential or commercial developments, the activities are generally limited to trenching in open soil, installing piping and padding, backfilling and compacting the open ditch. The 2011-2012 construction costs for new construction averaged about $45 per linear foot.

Replacing natural gas facilities decades after the initial installation, and after the subsequent development of these areas, turns out to be another matter entirely. Replacement pipe must now be installed in fully developed and occupied areas that consist of numerous below ground facilities, paved streets, sidewalks and arterials, landscaped residential neighborhoods, and hard-surfaced commercial developments teeming with daily traffic and other activity. New main pipe is most often installed by either horizontal directional drilling or open trenching. While horizontal drilling is far less invasive, both methods require cutting into existing pavement or other hard surfaces. Care must be taken to plan and locate the existing underground facilities to avoid damaging them, new service lines must be ditched into landscaped yards, etc., and all of these features must be restored to unblemished service once the installation is complete.

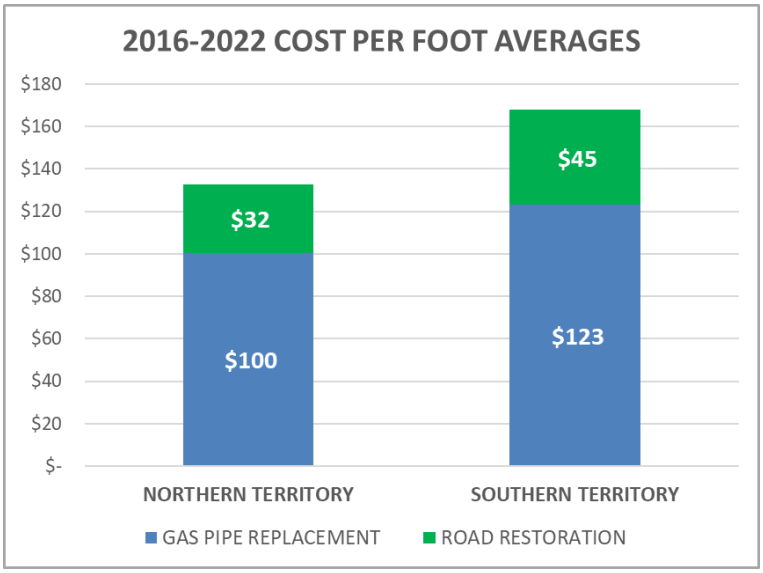
During the first two years of the program Avista reported[5] average per foot replacement costs ranging from $69 to $83 per foot. These costs included pipe replacement in hard-surfaced areas as well as areas of exposed soil, such as the shoulder of semi-rural roadways with limited adjacent facilities and road restoration. More recently, Aldyl-A pipe replacement project locations have been primarily located in suburban developments in which the right-of-way is fully built-out with paved roads and sidewalks and has required increased permitting stipulations. As a result of these conditions, pipe replacement costs have increased significantly. In 2022, the average cost of main pipe replacement was $213 /LF (per linear foot), with a low of $96/LF in Phoenix and a high of $292 /LF in the City of Talent.

In addition to the added cost of installing the pipe, the pavement cutting and remediation policies of local jurisdictions have had a significant impact on the scheduling, logistics, operational

[5] In direct testimony provided by Avista in rates proceedings in multiple jurisdictions, including Oregon.

methods, extent of the area to be repaved, and the ultimate cost of pipe replacement. In Avista's experience, there appears to be a continuing trend among jurisdictions to enforce restrictive moratoria on cutting in newer arterials and streets, to require more expansive requirements for control density backfill and compaction, and for patching or repaving of streets cut for pipe replacement. These requirements include rules on the export and import of trench backfill materials, significant soil compaction, and the width of pavement restoration, which averages 4 feet and can range from 2 feet up to 8 feet along segments of the project.

Figure 4: 2016-2022 Cost Per Foot Averages



In an effort to understand, control, and document project costs, the program has been tracking system-wide cost data including cost per foot averages since its inception in 2012. The cost of completing this work in Oregon is significantly higher than other state jurisdictions. As an example, the chart to the left shows the average cost per foot from 2016-2022 for the Company's northern territory, which includes Washington and Idaho's service area. Though actual pipe replacement costs are higher in Oregon,[6] the major element of the total cost disparity between the two territories is related to road restoration requirements in Oregon jurisdictions. These costs are largely a direct result of municipally-driven traffic control, road restoration, and permit requirements, which are beyond Avista's direct control.

[6] Some of the reasons for the higher construction costs include 100% import/export of trench materials, slurry backfill, material handling requirements, native soil conditions, traffic control requirements such as traffic plate locks, and installation methods used.

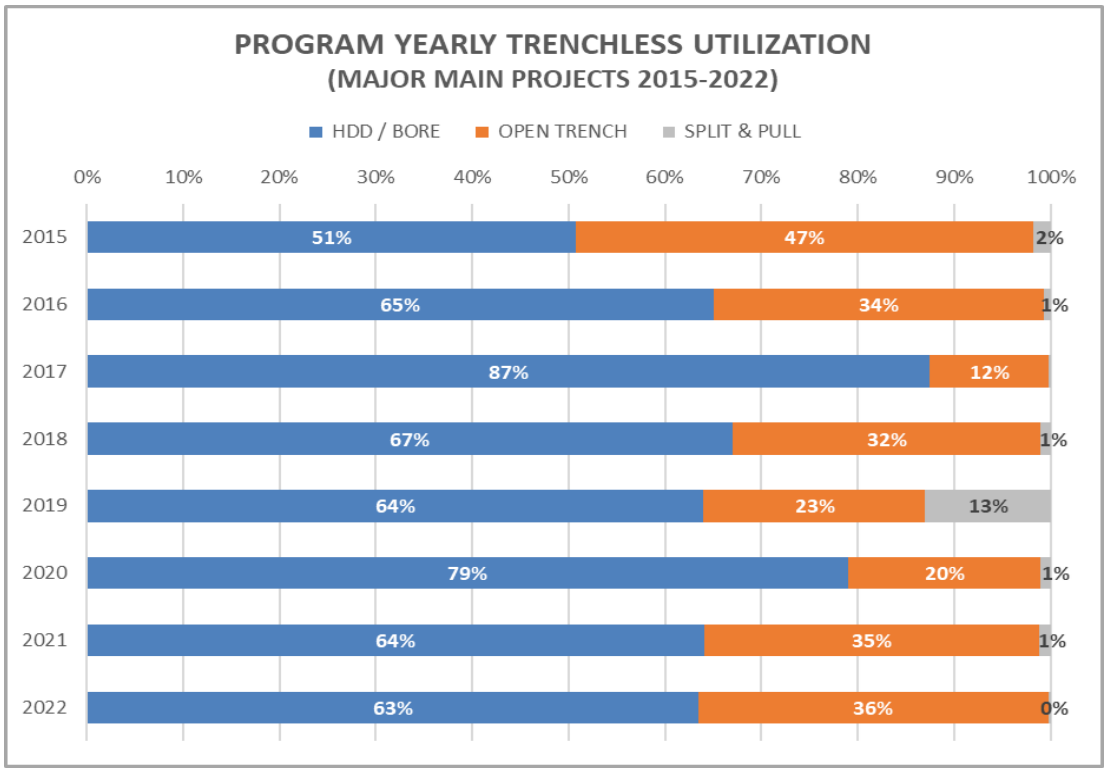
Optimizing Trenchless Technology – Given the high unit costs associated with open trenching and roadway restoration, Avista partners with Michels to optimize the use of trenchless technologies. The adjacent photograph shows a horizontal drilling machine being used to replace main pipe. Not all projects, however, are suitable for using these technologies due to safety issues associated with the presence of multiple underground utilites, or when the affected area has only one source of supply. For example, utilizing split and pull or pipe bursting technology requires the coordination and logistics of an all-day customer outage and the ability to perform the procedure to allow for restoration of customers' service the same day. Other prohibitive conditions include the presence of subsurface rock (solid rock or heavy cobble) and the lack of sufficient clearance along the pipe path to provide for adequate separation of utilites. However, where conditions are favorable, horizontal drilling and split and pull can provide a cost-effective alternative to open trench construction because the restoration footprint is significantly reduced.

As shown in the table and graph below, the utilization of horizontal drilling as a percent of main pipe installed each year shows an increasing trend since 2015.

Table 1: Program Utilitixation of Horistonal Drilling Installation for Main Pipe

Year	Percent Utilized
2015	51%
2016	65%
2017	87%
2018	67%
2019	64%
2020	79%
2021	64%
2022	63%

Figure 5: Program Yearly Trenchless Utilization



Continuing Annual Leak Survey – Avista has continued to conduct annual leak surveys on Priority Aldyl-A main pipe since 2011, even though it is more costly than the conventional frequency of surveying every five years. This frequency, however, provides customers and others a prudent margin of added safety while these facilities are being replaced and rebuilt.

Heightened Risk Prioritization within High-Consequence Areas (HCA) – A key tool developed by Avista for better managing the risks associated with its priority Aldyl-A piping, is its risk consequence model. The model predicts areas in the system where leaks are most likely to occur and then incorporates information on the density of development (high-consequence areas) to assess relative priorities for pipe replacement. In 2014, Avista updated its model to distinguish schools and daycare facilities from other types of developments. These were identified as sites that would be difficult to evacuate in the event of a natural gas emergency. Though these sites were already included in designated high-consequence areas, this designation provides an additional layer of priority. The model highlights those instances where Aldyl-A facilities are within close proximity to facilities that can sometimes encompass outdoor play areas or other areas of

congregation. Avista continues to list and map potential sites to determine whether they might warrant this higher-level prioritization. As of August 2023, all schools and daycare facilities with large diameter Aldyl-A services listed as high consequence areas have been remediated.

Activity Summary for 2022 – 2022 marked the first full year with Avista's primary contractor, Michels Utility Service. Crews were able to complete 7.68 miles of the 9.81 planned for pipe replacement. 8.49 miles were remediated in total with the addition of 0.81 miles through pipe verification. In addition to Aldyl-A main replacement, there was a renewed emphasize on STTR mitigation.

Current Activities for 2023 – As shown in the table below, Avista and Michels are working to complete over 7 miles of Aldyl-A main pipe replacement in the cities of Medford, Winston, Dillard, Riddle, and surrounding Roseburg areas in Oregon. While the STTR Program was ramped down in December of 2017, Avista continues to rebuild or eliminate the remaining 400 tee transitions in Oregon by utilizing local office resources. Priority Services such as schools or daycare facilities from the high consequence area list stated above have all been completed in Oregon as of August 2023.

Table 2: Current 2023 Oregon Major Main Projects

Location	Miles	Start	End
Medford E I-5 Carryover 2022	0.30	January	March
Canyonville/Riddle/Glendale Carryover 2022	0.95	January	August
Dillard/Winston Carryover 2022	3.83	January	September
Roseburg 2023	2.13	June	December
Total Miles	**7.21**		

Planned Activities for 2024 – As shown in the table below, Avista and Michels are scheduled to address 8.88 miles of main pipe replacement in Medford and Oregon in 2024.

Table 3: Planned 2024 Oregon Major Main Projects

Location	Miles	Start	End
Medford South E I-5 Carryover 2020	3.00	January	September
Medford South 2024	1.12	January	July
Central Point 2024	3.20	March	December
Talent	0.06	July	July
Ashland 2024	1.50	August	December
Total Miles	**8.88**		

Avista's expected 2024 expenses for this program in Oregon are approximately $8,505,566 in capital and $148,937 O&M expenses. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year to year. Avista will seek recovery of the actual investments associated with this program through the General Rate Case process.

Isolated Steel Pipe Replacement Program

Steel pipe that is not cathodically protected is subject to varying degrees of corrosion depending on pipe coating, the type and condition of the pipe, soil type and acidity, ground moisture, the presence of foreign utilities, and other factors. Corrosion causes the loss of metal from the pipe wall, which over time can result in a failure of the pipe and a gas leak. A safety issue can arise because in many cases these pipes are installed next to the businesses and homes of customers.

Avista proactively performs cathodic inspections on steel pipe and service risers to try and identify isolated steel within its distribution system. As mandated by Federal and State regulation, Avista monitors isolated steel sections of pipeline main less than 100 feet in length, and isolated services and risers at a frequency of 10 percent per year. This preemptive effort helps reduce the potential for corrosion and a subsequent leak, thereby increasing the safety and reliability of Avista's natural gas system.

Current Activities for 2023 – During 2023, the Company is planning to continue proactively identify and replace isolated steel pipeline and services/risers at the rate of approximately 10 percent per year.

Planned or Anticipated Changes to the Program for 2024 – There are no anticipated changes to the overall program for 2024.

Avista's expected 2024 expenses for this program in Oregon are approximately $2,000,000 in capital and $175,000 O&M expenses. The expected investments are proposed budgets for the time horizon presented; actual investments may change throughout each year and from year-to-

year. The Company will seek recovery of the actual investments associated with this program through the General Rate Case process.

VI. APPENDICES

Appendix A: Safe Excavation in Our Neighborhoods

Add this number to your phone contacts: 800-227-9187 (Avista Customer Service)

Signs of a natural gas leak

Smell — We add a sulfur-like rotten egg stench so you'll know right away if there is a problem.

Hear — Gas can hiss or even roar as it escapes pipes.

See — Gas may make bubbles, blow dirt and kill plants when leaking from underground pipes.

General Pipeline Markers are no substitute for calling 811

Avista's transmission and major distribution pipelines for natural gas have aboveground yellow markers along their routes, each displaying a 24-hour emergency response phone number. Please be aware that **THESE YELLOW MARKERS ONLY INDICATE THE GENERAL LOCATION OF BURIED NATURAL GAS LINES** and may not be located above the actual pipelines. You are still required to have pipelines located by calling 811 at least two business days before you dig.

Transmission pipeline maps by county and zip code, including the names of pipeline operators, are available by registering with the National Pipeline Mapping System at **www.npms.phmsa.dot.gov.**

Other materials available to order at publicsafety@avistacorp.com

- **Pipeline marker wallet card**
- **What to do in the event of a gas leak wallet card**
- **Safe excavation tips checklist**

Please review state dig law and OSHA requirements at myavista.com/safety

Please see our safety videos at myavista.com/safetyvideos

For additional information
800-227-9187
myavista.com/safety
publicsafety@avistacorp.com

Если Вы хотели бы получить информацию о правилах безопасности на русском языке, пожалуйста звоните по телефону 800-227-9187.

Si desea recibir información en Español acerca de la seguridad, por favor llamar a: 800-227-9187

For assistance with alternative languages please call customer service at 800-227-9187.

Avista Utilities
1411 East Mission MSC 20
Spokane, WA 99220-3727

Natural Gas

Safe Excavation in Our Neighborhoods

We just want you to be safe.
Customer Service 800-227-9187

Know what's below to be safe

It takes a system of underground pipelines to bring natural gas service to our community. Federal and state codes extensively regulate natural gas pipelines for public safety. Avista regularly maintains our natural gas facilities to ensure safety for all.

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

You are required to:

- Call 811 (or visit **call811.com**) at least two full business days before you dig to have underground utilities marked.
- Mark the perimeter of where you intend to dig with white paint.

Then:

- Wait for all utility lines to be marked before proceeding.
- There is a 2-foot tolerance zone on either side of markings. Hand dig in this zone to expose and determine the exact location before you proceed with mechanical equipment.
- Don't move or alter the marks until the underground facilities are exposed.
- Exposed gas pipelines need to be properly supported and protected from damage so they don't break or rupture.
- Use acceptable backfill (such as sand or rock free dirt) and proper compaction to avoid damage to pipes.
- Stop excavating immediately if you find unmarked gas or electric lines and call 811 (or visit **call811.com**) to have them marked.
- Never try to fix a damaged natural gas line or restrict the gas flow in any way, including bending the pipe over.

Ground marking identification

Ground markings are in different colors to indicate the locations and types of utility facilities buried below.

- ELECTRIC: RED
- GAS-OIL: YELLOW
- COMMUNICATION: ORANGE
- WATER: BLUE
- SEWER: GREEN
- TEMPORARY SURVEY: PINK
- IRRIGATION: PURPLE
- PROPOSED EXCAVATION: WHITE

Locates are good for the following time:

WA - 45 days
ID - 21 days
OR - 45 days

If anyone digs after the listed times, they are digging with an invalid ticket.

Do not build over gas lines

Never build any type of structure overtop buried utility lines or where it will block access to meters. Doing so runs a serious safety risk and prevents Avista from maintaining the infrastructure that serves customers.

Hazards when natural gas is released

- Natural gas mixed with air can be highly flammable and easily ignited by heat or sparks.
- Natural gas in the air can be ignited 4 to 15-percent gas-to-air mixture.
- Gas fires may produce irritating and/or toxic fumes.
- Natural gas is lighter than air and can migrate into enclosed spaces.
- Released gas may displace oxygen without warning and can cause dizziness or even asphyxiation.

Responding to a gas leak emergency

The following recommendations apply to all natural gas lines:

- Avoid any action that may create a spark.
- Do NOT start vehicles, switch lights or use phones.
- Evacuate the area on foot in an upwind and uphill direction.
- Alert others to evacuate the area and keep people away.
- Call 911 from a safe distance to report the emergency.
- Call and report to Avista who will inspect and repair the line.
- Wait for emergency responders and Avista to arrive.
- Do NOT attempt to close any pipeline valves.

Appendix B: Landscaper Brochure

Signs of a natural gas leak

We add a sulfur-like, rotten-egg stench so you'll know right away if there is a problem.

Gas can hiss or even roar as it escapes pipes.

Gas may make bubbles, blow dirt and kill plants when leaking from underground pipes.

Hazards when natural gas is released

- Natural gas mixed with air can be highly flammable and is easily ignited by heat or sparks.
- Natural gas can be ignited when there is a 4% to 15% gas-to-air mixture.
- Gas fires may produce irritating and/or toxic fumes.
- Natural gas is lighter than air and can migrate into enclosed spaces.
- Released gas will displace oxygen and can cause dizziness or even asphyxiation.

Responding to a gas leak emergency

The following recommendations apply to all natural gas lines:

- Avoid actions that may create a spark.
- Do NOT start vehicles, switch lights or use phones.
- Evacuate the area on foot going upwind and uphill.
- Alert others to evacuate the area and keep people away.
- Get a safe distance away and call 911 and Avista to report gas emergencies.
- Call Avista so we know to inspect and repair the line.
- Wait for emergency responders and Avista to arrive.
- Do NOT attempt to close any pipeline valve.

It takes a system of underground utilities to bring natural gas service to your community. Avista regularly maintains our natural gas facilities to ensure safety. Natural gas pipelines are also extensively regulated by federal and state codes for public safety.

General pipeline markers are no substitute for calling 811

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For additional information

800-227-9187
myavista.com/safety
publicsafety@avistacorp.com

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Avista
1411 East Mission MSC 20
P.O. Box 3727
Spokane, WA 99220-3727

Natural Gas

AVISTA

Landscapers! Don't dig into buried utilities.

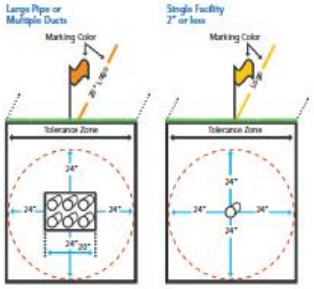
We just want you to be safe.

Customer Service 800-227-9187

Landscapers should be aware that buried utilities could be any place, some just below the surface. Before you break ground with a shovel, auger or other equipment, call 811 at least two business days before you dig—it's the law. A utility representative will locate the proximate area and mark buried utility lines in your dig zone. Never disturb the ground until completing these steps:

1. Use white paint to mark where you plan to dig.
2. Call 811 and wait for a utility representative to mark facilities owned by utilities. (NOTE: You must hire a private contractor to locate non-utility-owned lines.)
3. Maintain and respect these location marks.
4. Hand dig to expose and determine the exact line-location before you proceed with excavation.
5. Do not install landscaping (fence posts, sprinkler pipes, etc.) within 24 inches of a natural gas line. See tolerance zone below.

Tolerance Zone



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WA - 45 days
ID - 21 days
OR - 45 days

Any digging after listed times is digging with an invalid ticket.

- ELECTRIC
- GAS-OIL
- COMMUNICATION
- WATER
- SEWER
- TEMPORARY SURVEY
- IRRIGATION
- PROPOSED EXCAVATION

What to do if you damage a natural gas line

- If you hit or nick a natural gas line, stop excavating and immediately notify Avista at 800-227-9187.
- If you damage a pipeline and gas is escaping, DO NOT FOLD OVER THE PIPE to seal the leak. Static charge can ignite the gas. Get a safe distance away, then call 911 and Avista.
- If you find unmarked gas lines, call 811 (or visit call811.com) to have them marked.

Do not build over natural gas lines

Never build any type of structure overtop buried utility lines or where it will block access to meters. Doing so runs a serious safety risk and prevents Avista from maintaining the infrastructure that serves customers.

Appendix C: Digital Tips of the Trade

Always Notify 811 Before You Dig—It's the Law!

Do you have a project that involves digging? If so, don't forget to include notifying 811—your local one-call utility locator service—in your excavation plans. Damage from digging activities can cause power outages and pipeline accidents, and we need your help to prevent them!

For more electric and natural gas safety information, visit myavista.com/safety.

VISIT SITE ›

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

Dial 811 or enter an online request **at least two business days** excluding the date of your request, weekends and legal holidays, before digging in Washington, Idaho or Oregon. It's the law!

- Washington and Oregon: callbeforeyoudig.org
- Northern Idaho:
  - Kootenai County: kootenaicounty811.com
  - Bonner, Boundary, Shoshone and Benewah counties: nid811.com
- Idaho's remaining counties: DigLine.com

The 811 service will notify any utilities that have underground facilities in your dig area, so they can mark out the utility locations. Once you know where utility lines are located, you can dig a safe distance away from them. (You must hire a private locating contractor to locate non-utility-owned lines, such as gas lines to grills or power lines to swimming pools.)

Know the Dangers

If you don't notify 811 before digging, you risk contacting a buried utility line. Hitting a buried electric line can cause outages and serious shock injuries or fatalities. And hitting a gas line can lead to a fire or explosion. You can avoid property damage, personal injury, and possible fines and repair costs by notifying the 811 service before you start to dig. Even small digging jobs require this.

Play It Safe

1. Pre-mark your proposed excavation area with white paint, flags and/or stakes.
2. Call 811 or use the online locate request system.
3. WAIT the required time for utilities to be marked before you dig.
4. Follow state laws for digging within the "tolerance zone," a safety area that spans the width of a marked utility plus 24 inches from each indicated outside edge.
5. Respect the marks, hand expose to verify the location of marked utility lines and dig with care!

Do You Like This Email Series?

Do you find the information helpful? We would like to know. **Sign up** to tell us what you think, or let us know what topics you'd like to see in future emails. Please visit our website for other **Tips of the Trade**.

Smell or hear a gas leak or need to report a downed power line? Damage a gas pipeline or underground power line? Call (800) 227-9187.

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

For more safety information, visit:
Avista Natural Gas Safety
Avista Electrical Safety

Appendix D: Safe Excavation Tips Card

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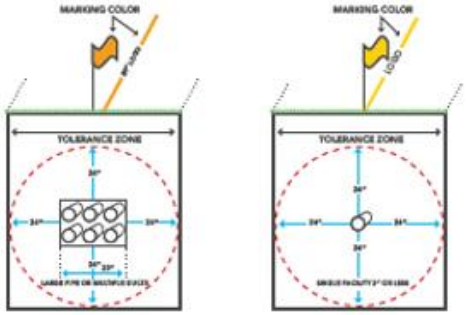
Safe Excavation Tips

What is excavation definition?

… Means any operation, including the installation of signs, in which earth, rock, or other materials on or below the ground is moved or displaced.

TOLERANCE ZONE



RED	Electric Power Lines, Cables, Conduit & Lighting Cables
YELLOW	Gas, Oil, Steam, Petroleum or Gaseous Materials
ORANGE	Communication, Alarm or Signal Lines, Cables or Conduit
BLUE	Potable Water
GREEN	Sewers and Drain Lines
PURPLE	Non-Potable Water: Reclaimed Water, Irrigation and Slurry Lines
PINK	Temporary Survey Markings
WHITE	Proposed Excavation

Safe Excavation

We want everyone to be safe

1 ☐ Pre mark your dig area in white.

2 ☐ Call 811 for a locate ticket. Make sure the company who is doing the digging is on the locate.

3 ☐ Have you waited two full business days for the locates?

4 ☐ Verify the locate description matches the excavation project. Keep locate ticket on hand as verification all utilities have responded.

5 ☐ Reasonable Accuracy means location, within 24 inches, of the outside lateral dimensions.

6 ☐ Use of hand tools or other non-invasive methods in the accuracy zone.

7 ☐ Are you maintaining the locate marks? Means 45 calendar day period after notice.

8 ☐ Call 911 and the utility owner if a gas line is damaged and gas is escaping. If nicked call the utility owner.

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Appendix E: Fence builders! Watch out for buried utility lines

Signs of a natural gas leak

Smell — We add the scent of a burnt match or rotten eggs to our natural gas, so you'll know right away if there's a problem.

Hear — Gas can hiss, whistle or even roar as it escapes from pipelines.

See — Dirt blowing from a hole in the ground, an area of dead vegetation or bubbling in pooled water may indicate an underground gas leak. You may also see fire come up from or burn atop the ground.

Hazards when natural gas is released

- Natural gas mixed with air can be highly flammable and is easily ignited by heat or sparks.
- Natural gas can be ignited when there is a 4% to 15% gas-to-air mixture.
- Natural gas is lighter than air and can migrate into enclosed spaces.
- Released gas will displace oxygen and can cause dizziness or even asphyxiation.

For additional information
800-227-9187
myavista.com/safety
publicsafety@avistacorp.com

Avista is committed to safety. For additional information, call or visit us online.

Если Вы хотели бы получить информацию о правилах безопасности на русском языке, пожалуйста звоните по телефону 800-227-9187.

Si desea recibir información en Español acerca de la seguridad, por favor llamar a: 800-227-9187

For assistance in alternative languages please call 800-227-9187.

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Fence builders! Watch out for buried utility lines.

We just want you to be safe.
800-227-9187

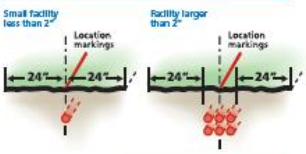
Before you break ground with a shovel, auger or other equipment, call 811 at least two business days before you dig—it's the law. A utility representative will come locate and mark buried utility lines in your dig zone. (The service is free for Avista residential customers.) Never disturb the ground until you complete these steps:

1. Use white paint to mark where you plan to dig.
2. Call 811 and wait for a utility representative to mark facilities owned by utilities. (NOTE: You must hire a private contractor to locate non-utility-owned lines.)
3. Maintain and respect these location marks.
4. Hand dig to expose and determine the exact location before you proceed with excavation (see below).

Reasonable Accuracy Zone

The utility should be found within two feet of either side of the mark, or inside a 4-foot corridor. However, if the line marks indicate the size of the buried utility and is greater than 2" in width, you will need to increase the accuracy zone by that amount.

Hand Dig Within 24"



Ground Marking Identification

Ground markings are in different colors to indicate the locations and types of utility facilities buried below.

- ELECTRIC: RED
- GAS-OIL: YELLOW
- COMMUNICATION: ORANGE
- WATER: BLUE
- SEWER: GREEN
- TEMPORARY SURVEY: PINK
- IRRIGATION: PURPLE
- PROPOSED EXCAVATION: WHITE

General Pipeline Markers are no substitute for 811

Avista's major distribution pipelines for natural gas have aboveground yellow markers along their routes, each displaying a 24-hour emergency response phone number. Please be aware that THESE YELLOW MARKERS ONLY INDICATE THE GENERAL LOCATION OF BURIED NATURAL GAS LINES and may not be located above the actual pipelines. You are still required to have pipelines located by calling 811 two business days before you dig.

What to do if you damage a line

- If you hit or nick an electric or natural gas line, immediately notify Avista at 800-227-9187.
- If you damage a pipeline and gas is escaping, DO NOT FOLD OVER THE PIPE to seal the leak. Static charge can ignite the gas. Get a safe distance away, then call 911 and Avista.

How to respond to a natural gas emergency

- Avoid any action that may create a spark.
- Do NOT start vehicles, switch on/off lights, make calls or hang up phones.
- Evacuate the area on foot in an upwind and uphill direction.
- Alert others to evacuate the area and keep people away.
- Call 911 from a safe distance to report the emergency.
- Call and report the event to Avista.

Appendix F: Pipeline Damage Tips

In the event of gas pipeline damage:

- Turn off and abandon your vehicle
- Leave the area immediately
- Call from a safe distance, 911 and Avista
- Evacuate people to an upwind location
- DO NOT bend the pipe over
- DO NOT turn valves
- DO NOT drive over manholes
- DO NOT attempt to extinguish flames of burning gas

Appendix G: Front Cover of the Excavation Magazine by PAPA

Appendix H: Spanish Language Natural Gas Safety Brochure

Nuestro sistema de gas natural

Se necesita un sistema de tuberías subterráneas para llevar gas natural hasta su hogar o negocio. Hay códigos federales y estatales que regulan exhaustivamente las tuberías de gas natural para la seguridad pública. En Avista, hacemos nuestra parte al vigilar y dar mantenimiento rutinariamente a nuestras instalaciones de gas para garantizar la seguridad. Para ayudarlo a aprovechar el gas natural al máximo, consulte nuestro sitio web en avistautilities.com bajo la pestaña de Su seguridad (Your Safety).

Inspecciones de tuberías y medidores

Para mantener seguro nuestro sistema de gas natural, Avista debe realizar mantenimiento periódico anualmente. Realizamos varios procedimientos, entre ellos, investigaciones de fugas, vigilancia de tuberías, inspección de medidores y cambios de medidores de gas. Por lo tanto, queremos que esté enterado de que, de vez en cuando, puede ver a alguno de nuestros inspectores en su patio.

Su medidor de gas

Es importante que los clientes mantengan un buen acceso a su(s) medidor(es) de gas para las lecturas mensuales, el mantenimiento periódico y las emergencias. Lo siguiente es de ayuda para nosotros:

- Pode arbustos y plantas para dejar espacio alrededor del medidor, de modo que puedan verse los indicadores.
- Preste atención a que no se acumule tierra ni desechos debajo y alrededor del medidor para prevenir corrosión y fugas.
- Asegúrese de que siempre pueda accederse a la válvula de cierre del medidor en caso de emergencias.
- No ponga objetos encima del medidor ni los apoye sobre éste, tampoco se ponga de pie sobre el medidor ni lo utilice para atar animales.
- Proteja el medidor contra los vehículos.

Llame al 811 antes de excavar

Si entra en contacto con una tubería de gas natural al excavar con una pala, motocultor o retroexcavadora, esto podría causarle una lesión o la muerte. Así que, manténgase a salvo. Llame al 811 por lo menos dos días antes de excavar para que se localicen y marquen sus líneas y tuberías con anticipación, ¡así lo dicta la ley! El servicio es gratuito para los clientes residenciales. Si corta (mella) o daña una línea o tubería, llame a Avista al 800-227-9187. Las tuberías dañadas que se dejan sin reparar pueden convertirse en un peligro.

811 Entérese de lo que hay enterrado. Llame antes de excavar.

Asuntos de seguridad

Avista quiere que todos permanezcan seguros. Si su vivienda tiene inquilinos o arrendatarios, manténgalos informados al pedirnos más folletos. Para obtener más información, consulte la página avistautilities.com o llame al 800-227-9187.

Si desea recibir información en Español acerca de la seguridad, por favor llamar a: 800-227-9187.

Para obtener ayuda con otros idiomas, llame al 800-227-9187.

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AVISTA

Seguridad sobre el gas natural

Sólo queremos que se mantenga a salvo..
800-227-9187

Seguridad sobre el gas natural

Consejos de seguridad sobre el gas natural

Para ayudar a prevenir accidentes en su hogar y mantener segura a su familia, siga estos consejos generales:

- Mantenga el área alrededor del hornillo de calefacción y del calentador del agua, limpia y sin basura.
- Nunca guarde materiales y líquidos combustibles cerca de los aparatos de gas.
- Enséñeles a los niños a mantenerse alejados de la estufa de gas y de todos los otros aparatos que funcionen con gas.
- Mantenga limpios los hornos y las estufas para prevenir los incendios producidos por grasas.
- Nunca use el horno o la estufa para calentar una habitación.
- Nunca deje que los niños se columpien o se cuelguen de las tuberías de gas.

Emergencias y desastres naturales

Debe saber cómo cortar el servicio de gas natural de su casa en caso de una emergencia o desastre natural, como un terremoto o una inundación. Primero, localice la válvula de cierre en la tubería cerca del medidor de gas. Use una llave inglesa grande para dar un cuarto de giro a la válvula en cualquier dirección. Cuando la válvula esté en una posición transversal (perpendicular) respecto de la tubería, el paso del gas estará cerrado.

Corte el servicio de gas solamente si huele o escucha una fuga de gas natural, o si su vivienda sufre daños mayores. En las grandes emergencias, Avista implementará nuestro plan de emergencia para garantizar la seguridad de la zona afectada

Reconocimiento de una fuga de gas

Las fugas de gas natural no suceden a menudo pero pueden ser peligrosas. Mantenerse a salvo, sin embargo, es tan fácil como usar su nariz, oídos y ojos.

Si huele o escucha gas

Incoloro, inodoro y más ligero que el aire, el gas natural se vuelve inflamable cuando se mezcla con aire y se expone a una fuente de ignición.

Huela — Le agregamos un mal olor parecido al azufre y un huevo podrido, para que sepa de inmediato si hay algún problema.

Conozca el olor del gas natural.

Rasque y huela aquí.

Escuche — El gas puede sisear o incluso rugir a medida que escapa de las tuberías.

Vea — El gas puede producir burbujas, hacer volar tierra y matar plantas cuando escapa de tuberías subterráneas.

Si se da cuenta de que hay una fuga de gas natural, váyase de la zona.
Si se encuentra en el interior, diríjase al exterior rápidamente. No use ningún teléfono, accione un interruptor ni haga nada que pueda causar una chispa. Desde la casa de un vecino o a una distancia segura, llame al 911 y a Avista al 800-227-9187.

Monóxido de carbono

El monóxido de carbono (CO) es un gas incoloro, inodoro y mortal que se produce cuando la combustión de cualquier combustible, tal como el gas natural, ocurre sin suficiente oxígeno. El envenenamiento por CO provoca dolor de cabeza, cansancio, dificultad para respirar, náuseas, mareo y la muerte. Para alertar a su familia sobre la presencia de CO, compre un detector de monóxido de carbono aprobado por UL e instálelo según las instrucciones del fabricante.

MANTÉNGASE A SALVO AL INSTALAR UN DETECTOR DE MONÓXIDO DE CARBONO.

Desbloqueo del alcantarillado

En muy escasas ocasiones, las tuberías de gas natural subterráneas se instalaron sin querer a través de tuberías del alcantarillado que no se detectaron. Estas tuberías son seguras a menos que sean cortadas por una herramienta de desobstrucción de alcantarillado, que pudiera causar una fuga de gas y producir un incendio o explosión. Antes de desobstruir una tubería de alcantarillado bloqueada, llame a Avista. Enviaremos a un técnico sin costo alguno para asegurarnos de que no represente ningún peligro.