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September 29, 2017

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

Attention: Filing Center

RE: Order 17 084 (Docket UM 1722) Avista Utilities Natural Gas Safety Project Plan

Avista Corporation, dba Avista Utilities ("Avista" or "Company"), submits the above-referenced report in compliance with Commission Order 17 084 (Order), entered March 6, 2017. Among other matters the Order requires natural gas companies to submit an annual "Safety Project Plan" (Plan) report to the Commission by September 30, 2017, and each year thereafter. 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 me at (509) 495-4975 or Larry La Bolle at (509) 495.4710; larry.labolle@avistacorp.com.

Sincerely,

/s/Linda Gervais
Senior Manager, Regulatory Policy
Avista Utilities
linda.gervais@avistacorp.com

Avista Utilities

Natural Gas Safety Project Plan for Oregon

September 30, 2017

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" (or Plan).[1] The purpose of the Plan is to increase transparency into the investments made by each utility that are based predominantly on the need to achieve important safety objectives. More specifically, the Plan is intended to achieve the following objectives:

1. Explain capital and expenses needed to mitigate safety issues identified by risk analysis or new federal and state rules;
2. Demonstrate the utility's safety commitment 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; and
4. Identify major regulatory changes that impact the utility's safety investments.

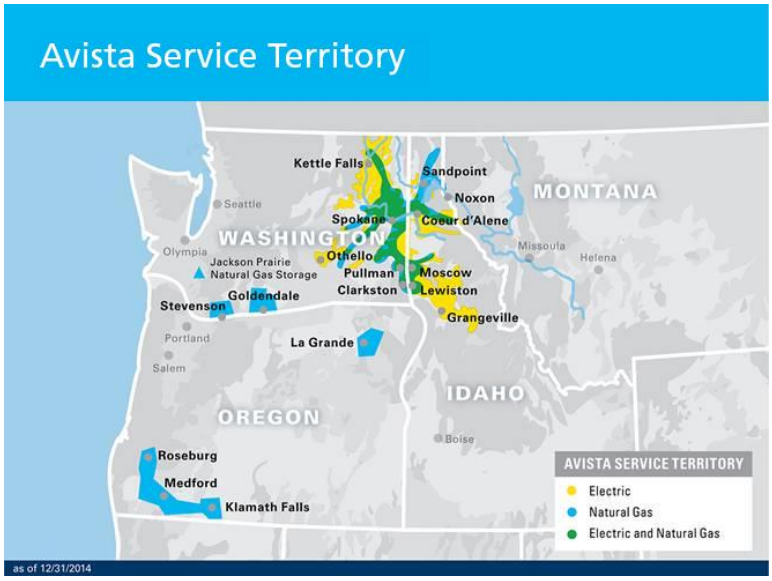
In meeting these objectives, the Plan will provide a yearly "snapshot" of the utility's expected investments on its identified safety programs along with the activities planned for each program over a period of 12 months. The Plan will also include a brief description of each safety program or initiative, 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 Safety Project Plan is not intended to replicate the analysis performed to satisfy each utility's Distribution and Transmission Integrity Management Plans (DIMP and TIMP). 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" only to

[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.

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.

Avista serves 336,000 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 Altell / 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 our customers relies on complex infrastructure systems designed, built, operated, and maintained to achieve a range of important objectives. Nearly every infrastructure investment we make has at least some relationship to providing "safe" and "reliable" service, though very few of them are made to achieve a predominant safety or reliability objective.[2] 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] 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. We say predominant 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.

2. **Safety as a Key Factor** – Investments that are intended to achieve other than safety objectives, but that have a strong emphasis on public, customer, and employee safety.

3. **Safety as a Minor Factor** – Programs with other than safety primary objectives and where safety is 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. Recognized Safety Programs

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 are continuously evolving 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 have also engaged in the business of ensuring the safe operation of natural gas systems and often play a companion role in the implementation and administration of these federal regulations.

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 Distribution Integrity Management Plan and Transmission Integrity Management Plan, 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 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 Distribution Integrity Management Plan - Managing the integrity and reliability of our gas distribution pipelines has always been a primary goal for Avista Utilities, performing our design, construction, operations, and maintenance activities in compliance with state and federal requirements. Meeting these requirements is a key part of Avista's goal to protect the health and safety of our customers, employees, and the communities we serve. The Company's Plan establishes the requirements for compliance with the subject 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 our Distribution Integrity Management Plan for our Oregon natural gas operations (with Transmission risks included) have identified the following five priority risks (referred to as "sub-threats") to our system.

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

1. Excavation Damage
2. External Corrosion

3. Material Failure – Priority Aldyl A Pipe

4. Welds/Joints - Steel Welds

5. Natural Forces – Snow

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 our customers without adverse effects on the public, our customers, our 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, this 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 allows the Company to effectively allocate resources to appropriate prevention, detection, and mitigation activities that will result in improved integrity and safety. The Plan requires primary Company documents for the management of our natural gas system to be referenced and incorporated into the Plan, and as part of this program, 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 our development and implementation of the Transmission Integrity Management Plan, 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 Integrity Management Program (IMP) will be continuously evolving and improving and is therefore intended to be flexible. Periodic evaluation is conducted to ensure that 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 will use 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 keeping abreast of new knowledge and technologies affecting pipeline integrity and evaluating those technologies and implementing them where appropriate. Avista personnel will attend meetings and conferences, and will perform literature searches in order to investigate and then evaluate the use of new technologies for specific use in the integrity management program.

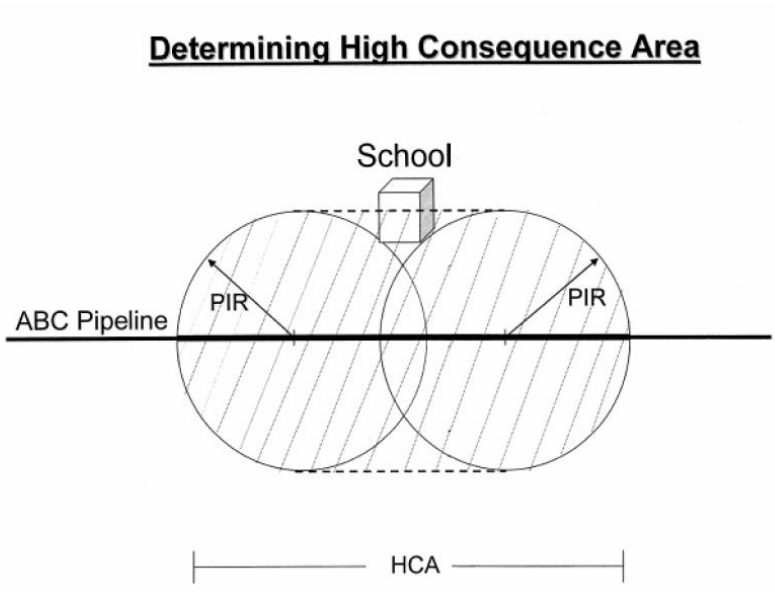
- Avista has determined the set of performance measures that will best serve the need for monitoring and evaluating the effectiveness of the integrity management program.

- 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 plan and implemented as recommended in the standard.

Avista's Distribution and Transmission Integrity Management Plans are filed with the Commission's pipeline safety staff each year.

Planned Activities for 2018 – Avista plans to continue our normal leak data gathering, review, and analysis for both distribution and transmission integrity management planning. For distribution, Avista plans to complete our annual review and revisions to our accelerated actions in relation to the current leak data analysis and risk analysis and to publish these results in our annual distribution integrity management manual. For transmission, Avista plans to continue to work with Dynamic Risk as a consultant who will perform our class location and high consequence area analysis and our transmission risk analysis. An example high consequence area analysis is presented below.



Planned or Anticipated Changes to the Program for 2018 – The only known major change at this time to either of Avista's integrity management plans is to begin revising the risk analysis algorithm for distribution. Since the implementation of our distribution integrity management plan, Avista has maintained the type and quality of data on natural gas leaks on our system that has enabled us to move to a more quantitative risk analysis algorithm

and away from a mostly qualitative one. This change will help insure that the data drives the outcomes of the risk analysis, limiting the opportunity for qualitative bias to influence the results.

Expenses for preparing Avista's transmission and distribution integrity management plans, as allocated to Oregon for 2017 and 2018, are presented in the table below. These expenditures fund the processing and preparation of the plans and producing the annual reports. Implementation of measures to address key threats is funded under the respective programs responsible for their implementation.

Planned Program Expenditures

	Capital	Expenses
2017	$0	$283,850
2018	$0	$290,852

Avista's Excavation Damage Prevention Program

As noted above, the number one safety and integrity threat to the Company's natural gas system results from accidental "dig-ins" by third parties excavating in the vicinity of our buried 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 our customer awareness activities is to increase the safety of the public and company employees 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 membership in the "811" one-call centers and through other communication,

education, and awareness initiatives. In addition to reducing the overall damage to the integrity of our system, we also strive 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 which Avista's standards for damage prevention, locating, tracking of damages, and training need to be updated or clarified.
- Manage quality control of company contract locating services and monitor contract requirements for locators.
- Develop and provide training and 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.
- Develop, analyze, and track performance metrics related to the program.

Overview of Communications and Outreach

Avista Annual Excavator Letter and Brochure – this informative letter and brochure are provided to commercial excavators and contractors within Avista's service territory TWICE each year, in the spring and fall construction seasons. A copy of this letter and brochure are provided in Appendix A.

Annual Excavator Magazine and Letter – developed by the Pipeline Association for Public Awareness, this publication 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 B.

Excavator Incident Brochure – when a dig-in occurs on our system this brochure is provided to the excavator on site by Avista personnel responding to the emergency call. A

copy of this brochure is provided in Appendix C, which includes material in both English and Spanish Language.

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;
- Public Officials; and
- Schools – targeting the third through sixth grades, providing teacher and student supplied materials.

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, and promotional projects such as 811 Papa Murphy's Partnership. Avista also partners with different organizations to spread the word on the 811 Call Before You Dig program, such as the Pipeline Association for Public Awareness, Paradigm, Sanders Resources, and special features like JJ the Rodeo Clown who educates attendees at rodeos held across the state of Oregon.

Planned Activities for 2018 – Avista will continue to collaborate with other organizations to spread the public safety message, and continue to do the outreach mailings, media, and in-person events similar to our activities for 2017. In addition, we are conducting our effectiveness survey in 2017. This survey provides input on how we can better reach our stakeholders, including any recommended changes for how we engage with excavators, public officials, emergency responders, etc.

Planned or Anticipated Changes to the Program for 2018 – Beyond implementing any program changes based on the results of our effectiveness survey (above), Avista does not anticipate any material changes in 2018.

Capital and operating and maintenance expenses for Avista's Damage Prevention Program and our customer awareness communications in Oregon, for 2017 and 2018, are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$267,500	$736,500
2018	$301,500	$806,000

Cathodic Protection

Overview of Cathodic Protection Program

The purpose of the Cathodic Protection (CP) program is to protect Avista's buried steel pipe from the effects of natural corrosion. The mechanism of this protection is to make the pipeline part of an electric circuit by energizing the pipe with direct current, which is also connected to a "sacrificial" metal anode that is easier to corrode than the pipe itself. This forced electrochemical process directs the corrosion process to the sacrificial metal, which protects the pipeline from corroding as long as the circuit and power source are properly maintained. While steel pipe is coated with protective materials that are effective in preventing corrosion, the cathodic protection system provides a safety net in the event

this protective coating 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 our system, external corrosion.

The Company's cathodic protection technicians are responsible to ensure Avista's compliance with these regulations, that these systems are properly performing, and to take the lead in implementing corrective actions when any problems are found. These technicians, shown in the photograph on the prior page, are continuously striving to upgrade and improve the efficiency of our cathodic protection systems.

Zone Isolation Points and Zone Management

Avista manages 174 cathodic protection zones across our three-state service territory. "Isolation Fittings" are used 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, divided or consolidated.

Other Program Elements

In addition to zone management, the Company's cathodic protection technicians are responsible for the following activities:

- Monitoring Pipe Casings
- Rectifier Maintenance and Operation
- Ground Bed Replacements

Inspection and Other Requirements

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

Planned Activities for 2018 – Avista will continue to monitor its cathodic protection systems and perform testing throughout the year. On average, one or two anode beds need

to be replaced each year due to anode consumption. These replacement projects, if needed, are typically scheduled for construction during the summer.

Planned or Anticipated Changes to the Program for 2018 – The Company anticipates no material changes to its cathodic protection program for 2018, though the nature of the work planned for next year is expected to require additional expenses compared with the current year.

Capital and operating and maintenance expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$104,000	$150,000
2018	$104,000	$220,000

Atmospheric Corrosion Program

A second part of the Company's response to the potential for external corrosion is the Atmospheric Corrosion Inspection Program (Atmospheric Corrosion). Similar to the cathodic protection, this program is a requirement of federal regulation (CFR) 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 three years. The Company conducts the atmospheric corrosion program systematically, by state and by operations district in each three-year cycle. Avista's atmospheric corrosion program is managed by the natural gas programs manager and a program administrator. Field inspections are completed by a contractor that specializes in this type of inspection.

At some service locations, the inspections result in identification of "abnormal operating conditions," which are conditions outside standard operation requirements and that require mitigation to resolve. Avista field personnel remediate these abnormal conditions on a pre-

determined compliance timeline. The local construction office schedules and manages the 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 2018 – Avista will continue to inspect one third of the Oregon service territory annually on a rotating schedule, which ensures we inspect each meter and riser once every three-years. Remediation work is completed in accordance with the specified compliance timeline.

Planned or Anticipated Changes to the Program for 2018 – There are no anticipated program changes for 2018.

Operating and maintenance expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$0	$235,000
2018	$0	$235,000

Leak Survey Program

The Company's leak survey program is required 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 (including 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, at least once each calendar year, but at intervals not exceeding 15 months. Outside business districts the leak survey must be conducted as frequently as necessary, but at least once every 5 calendar years, and at intervals not exceeding 63 months. In special cases such as "cathodically unprotected" distribution pipelines, the survey must be conducted at least once every 3 calendar years, at intervals not exceeding 39 months. The utility may also survey natural gas facilities on a more frequent basis, such as Avista's Priority Aldyl A pipeline, 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 operations areas each year. All of Avista's residential natural gas facilities are surveyed at least every five calendar years.

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 repaired within six months of discovery, and grade 3 leaks are repaired within one year of discovery.

Planned Activities for 2018 – Avista will continue the leak survey program in the state of Oregon at the above listed intervals and will remediate all leaks within the compliance timeframes described above.

Planned or Anticipated Changes to the Program for 2018 – There are no program changes anticipated for 2018.

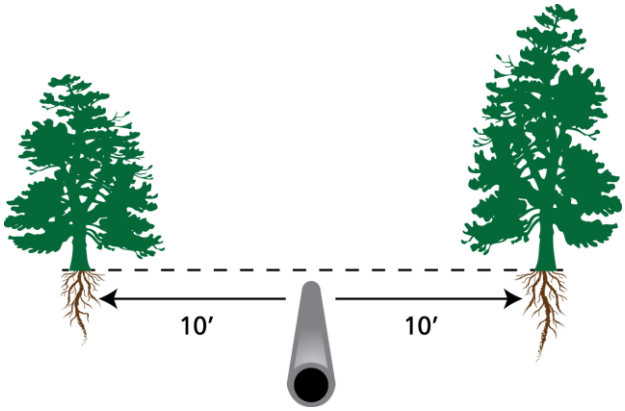
Operating and maintenance expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$0	$610,000
2018	$0	$610,000

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, and can damage protective coatings, and interfere with cathodic protection systems, increasing the risk of potential pipe failure and leaks. The zone of clearance 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 in follow-up work by our 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 below. 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 2018 – Avista is planning to perform vegetation removal on approximately 15 miles of high pressure lines in 2018 focused mainly in and around the communities of Medford and Klamath Falls. Customer contact and work planning for future clearing projects will be initiated in the La Grande and Roseburg areas in 2018.

Planned or Anticipated Changes to the Program for 2018 – There are no program changes anticipated for 2018.

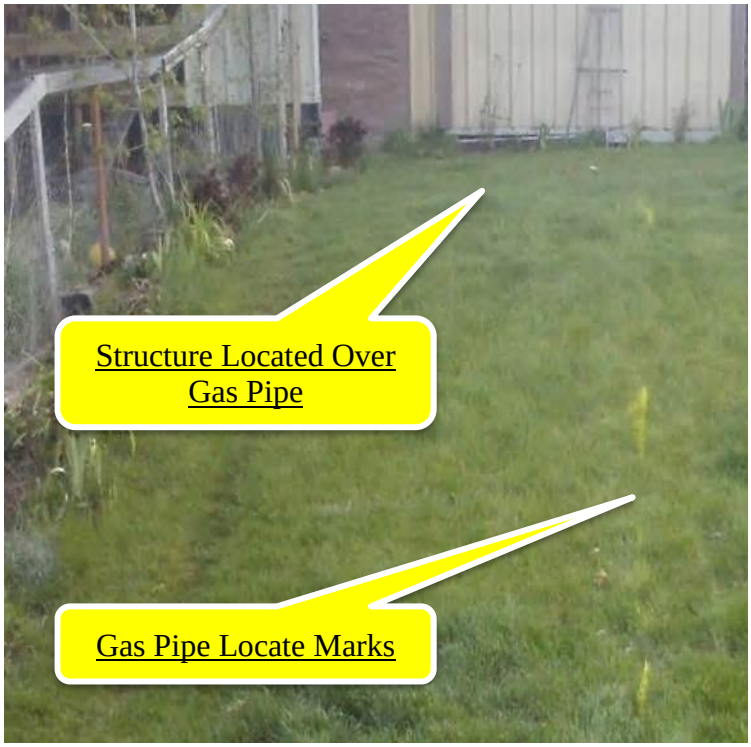
Operating and maintenance expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$0	$75,000
2018	$0	$75,000

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 our ability to safely operate the gas system. Typically an overbuild situation occurs when a structure is erected over the top of our preexisting natural gas facilities. These structures or barriers prevent us 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. Overbuilds not originally designed to be in an overbuilt condition are also a violation of the Federal Code for an overbuilt facility. This is because they do not meet the



code requirement for installation of the pipeline within a sealed conduit that must be vented outside the overlying structure.

Overbuilds also present an increased risk to customers as well as operational risk to our 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 to attempt and 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 these parks, they represent areas of greatest 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 overbuilds are not isolated to mobile home parks and the Company conducts the program in all of its natural gas service areas.

Planned Activities for 2018 – Avista will continue to mitigate the known overbuilt conditions to address the high-risk projects in each district first, as determined by the Company's distribution integrity management plan.

Planned or Anticipated Changes to the Program for 2018 – No program changes are anticipated for 2018.

Capital and operating and maintenance expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$470,000	$180,000
2018	$470,000	$180,000

IV. 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 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 our customers. While the next two programs represent the replacement of assets based on condition, the safety of our 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 twenty-year 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 our Gas Facilities Replacement Program, which is responsible for developing and managing the overall project. This program addresses the third-highest priority threat to the Company's natural gas system. 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, as well as the rationale for the proposed twenty-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 is also rebuilding transition fittings used to connect Aldyl A service piping (one-half and three-quarter inch diameter) to steel tees that are welded to steel main pipe ("service tee transitions"). The illustration below shows the replacement components of the new service tee transition.

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, and 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 with time.

Completed Replacement Activities – Under guidance of the Master Plan, Avista began replacing select Aldyl A piping in its Oregon service territory in 2012. To date, the Company has replaced 31.2 miles of pipe, and has rebuilt 6,172 tee transitions in Oregon. Total capital investments for this work through year-end 2016 are $23,602,500.

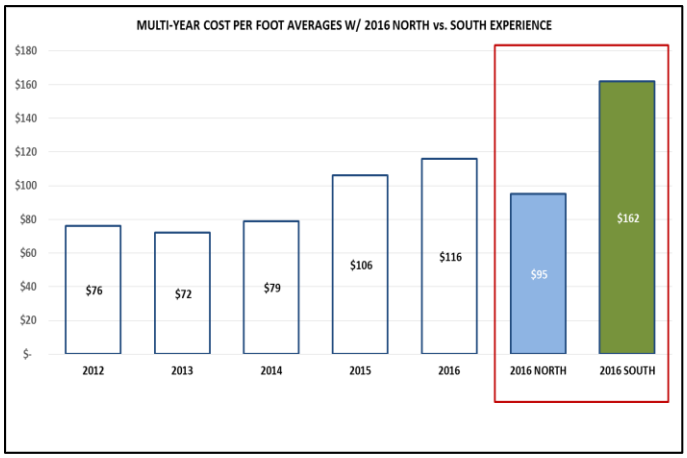
Construction Approach – Avista continues to complete the majority (approximately 92%) of its Aldyl-A replacement using contract crews and equipment since this effort is intensive, specialized, subject to seasonal constraints, additive to the normal workload and staffing levels required for ongoing natural gas operations, and consequently, is much more cost efficient. Avista's primary contractor for performing its Aldyl-A main pipe replacement and rebuilding of service tee transitions is NPL[3]. NPL's proven expertise and mastery

[3] NPL, formerly known as Northern Pipeline Construction Company, has a national reputation for safe, high quality and cost-effective construction services, including the installation or replacement of over ten million feet of pipe and other underground facilities each year.

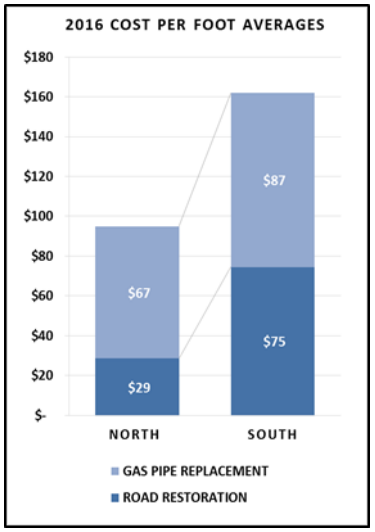
of specialized construction techniques has been a real asset in our efforts to get the work done on time and to effectively manage our costs. Avista continues to partner with NPL to refine these construction technologies, allowing us to improve our efficiency and cost effectiveness over time. The illustration above shows the "keyhole" technology used to minimize the pavement impact associated with rebuilding service tee transitions. Since 2012 this surgical approach has yielded approximately $6 million in savings compared with conventional construction and road restoration.

Managing the Unit Costs of Replacement – At the time the Company developed its Aldyl-A Master Plan, its experience with the cost of main pipe installation was almost exculsively with new construction. Avista has since gained several years' experience in all our jurisdictions with the actual costs of replacing existing pipe. By its nature, replacement is substantially more complex than new construction because it nearly always takes place in established municipal areas and existing neighborhoods with paved roadways, sidewalks, landscaping, and other underground facilities. The illustration at left shows the pavement cut required for open trench installation of new main pipe.

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 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 stringent requirements for backfill and compaction, for patching or repaving of streets cut for pipe replacement, and traffic control requirements. These requirements include rules on the export and import of trench backfill materials, significant soil compaction, and the width of pavement restoration, which averages four feet and can range from two feet up to 8 feet for segments of a project. 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 adjacent chart identifies the cost per foot averages from 2012 to 2016. Further, the red box on the right side of the chart summarizes costs for the Company's northern territory, which includes our Washington and Idaho service areas, and our southern territory, which includes all of our Oregon service area. The cost of completing our work in Oregon is significantly higher and the difference has been growing. A major element of this cost disparity between the two territories is further explained in the chart at right, which separates the average cost per foot for the gas pipe replacement activity from the work of road restoration (which includes traffic control costs). While the project expects construction costs to escalate nominally year over year, the predominant driver behind the cost increase from 2015 to 2016 is the much-higher road restoration costs we experience in our Oregon projects. These costs are a direct result of the significant municipally-driven road restoration requirements, which are beyond Avista's control.



Optimizing Trenchless Technology – Given the high unit costs associated with open trenching and roadway restoration, the Company has continued to work with NPL to optimize the use of trenchless technologies, inlcuding "horizontal drilling" and "split and pull." The illustration below 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 system has only one source of supply. The latter case 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. Where conditions are favorable, however, horizontal drilling can provide a cost-effective alternative to open trench construction. In 2015 and 2016 the Company was able to cost effectively increase the use of horizontal drilling to complete 67% of all pipe replacements. In some projects, the successful use of horizontal drilling accounted for as much as 83% to 95% of the pipe replaced. The illustration at right shows new main pipe being installed in the bore created by horizontal drilling.

Continuing Annual Leak Survey – The Company has continued to conduct annual leak surveys on Priority Aldyl A main pipe since 2011, and on its Aldyl A service tee transitions since 2012. The Company is planning to continue the annual survey of these facilities, even though it is much more costly than the conventional frequency of five years, to provide a prudent margin of added safety while these facilities are being replaced and rebuilt.

Heightened Risk Prioritization within High-Consequence Areas – A key tool developed by the Company for better managing the risk 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 new designation provides them an additional layer of priority. The

model highlights those instances where the Company has Aldyl-A facilities within 150 feet of the center point of the building or within 500 feet for larger properties, to encompass outdoor play areas or other areas of congregation. Avista is continuing to list and map other potential sites to determine whether they might warrant this higher-level prioritization.

Current Activities for 2017 – During the current year (2017), the Company plans to complete all remaining service tee transition rebuilds in Oregon, which are estimated at 607 remaining units, and to replace approximately 9.73 miles of main pipe. The tee transition work will be focused in the Roseburg district and surrounding communities, as well as small elements or work remaining from Ashland to Grants Pass. The transition tee rebuild program is on schedule to close in December of 2017. The main pipe replacement work will be concentrated in Klamath Falls, OR and Medford, OR.

Planned Activities for 2018 – As a result of completing the tee transition work, Avista is planning to increase the amount of main pipe we replace each year to approximately 14.3 miles. The program has identified three projects for main pipe replacement work listed below.

- Winston, OR = 3.8 miles
- Sutherlin, OR = 4.43 miles
- Medford (South) = 6.07 miles

The Company is also planning to do a small number of service replacements in Klamath Falls in 2018.

Capital and operating and maintenance expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$7,842,592	$15,000
2018	$10,375,530	$300,000

Isolated Steel Pipe Replacement

As noted earlier in this report, steel pipe that is not cathodically protected is subject to corrosion to varying degrees depending on pipe coating, pipe type and condition, 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 our customers.

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. When identified, the Isolated Steel Replacement Program replaces those isolated steel sections, that if not cathodically protected, could be at risk of corrosion. 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.

Planned Activities for 2017 - Those isolated sections of steel pipeline and steel services/risers identified in our Oregon service area are being proactively replaced at the rate of approximately 10 percent per year.

Planned Activities for 2018 – During 2018, the Company is planning to continue proactively replacing isolated steel pipeline and services/risers at the rate of approximately 10 percent per year.

Planned or Anticipated Changes to the Program for 2018 – There are no anticipated changes to the overall program for 2018.

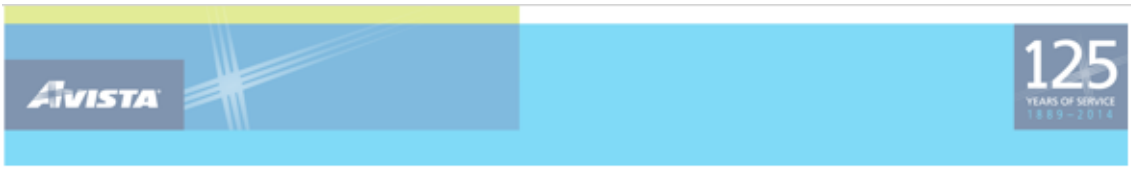
Capital expenses for this program in Oregon for 2017 and 2018 are presented in the table below.

Planned Program Expenditures

	Capital	Expenses
2017	$400,000	$0
2018	$400,000	$0

V. Appendices

Appendix A: Gas Excavator Letter and Brochure



April 2017

PLEASE CALL 811 BEFORE YOU DIG

Before beginning any excavation project be sure to have all natural gas services and underground services located first. To locate what's below the ground, just call **811**. The National **811** Call Before You Dig number is available to everyone specifically contractors, excavators, and homeowners. You may also use the website **www.call811.com** or **www.callbeforeyoudig.org**. Locating underground lines is just a phone call or a click away and it may save a life. You can now use internet ticket processing in **WA, OR, MT & HI** from a smart phone at **www.callbeforeyoudig.org**.

Remember to call at least **two business days (excludes holidays and weekends)** before excavating or digging. Your proposed excavation area must be painted in white. This allows the utility sufficient time to mark the location of any utility owned buried wire, cables or natural gas pipe. One scoop with a shovel or backhoe could strike a natural gas line that may be buried close to the surface. Once the utilities have been located the buried utility could be up to 24" away from the locate mark. It is recommended to hand dig within this 24" zone. Privately owned utilities generally located after the meter can be located for a fee. These may include water/sprinklers, sewer laterals, utilities to a detached garage, outbuilding, etc.

Immediately Report Scrapes, Dents or Pipeline Damage

If you do expose natural gas lines while working on your project and notice or cause a dent, scrap, or damage to a gas pipeline, please contact Avista at 800-227-9187 so we may inspect those lines for safety before you backfill. It is critical that your crews work safely when near natural gas pipelines.

Watch, Listen & Smell for Signs of a Leak

Know the signs of a leak and what to do. If you see, hear or smell signs of a pipeline leak immediately leave the area in an upwind direction. Warn others to stay away and contact 911 from a safe distance. Do not operate machinery or electrical equipment, including cell phones, near a potential pipeline leak.

Avista is happy to provide safety information to your business. Please find the enclosed our brochure.

Please contact us to order additional **Excavator Safety near Natural Gas Pipelines** brochures.

Fax requests for more copies to 509-777-5901 or email publicsafety@avistacorp.com.

Company Name _____

*Address*_____

*City*_____*State*_____*Zip*_____

*Number of brochures requested*_____

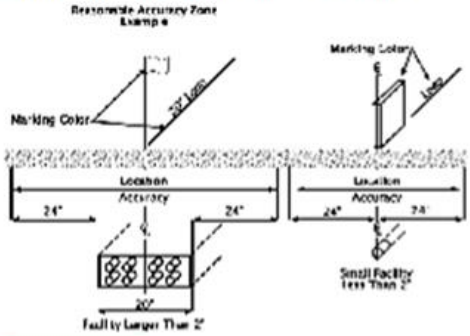
We just want you to be safe,

Dawn Donahoo – Public Safety Specialist
509-495-2646

Safe Excavation Tips

What is excavation definition?

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



RED	Electric Power Lines, Cables, Conduit & Lightning Cables
YELLOW	Gas, Oil, Steam, Petoleum 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

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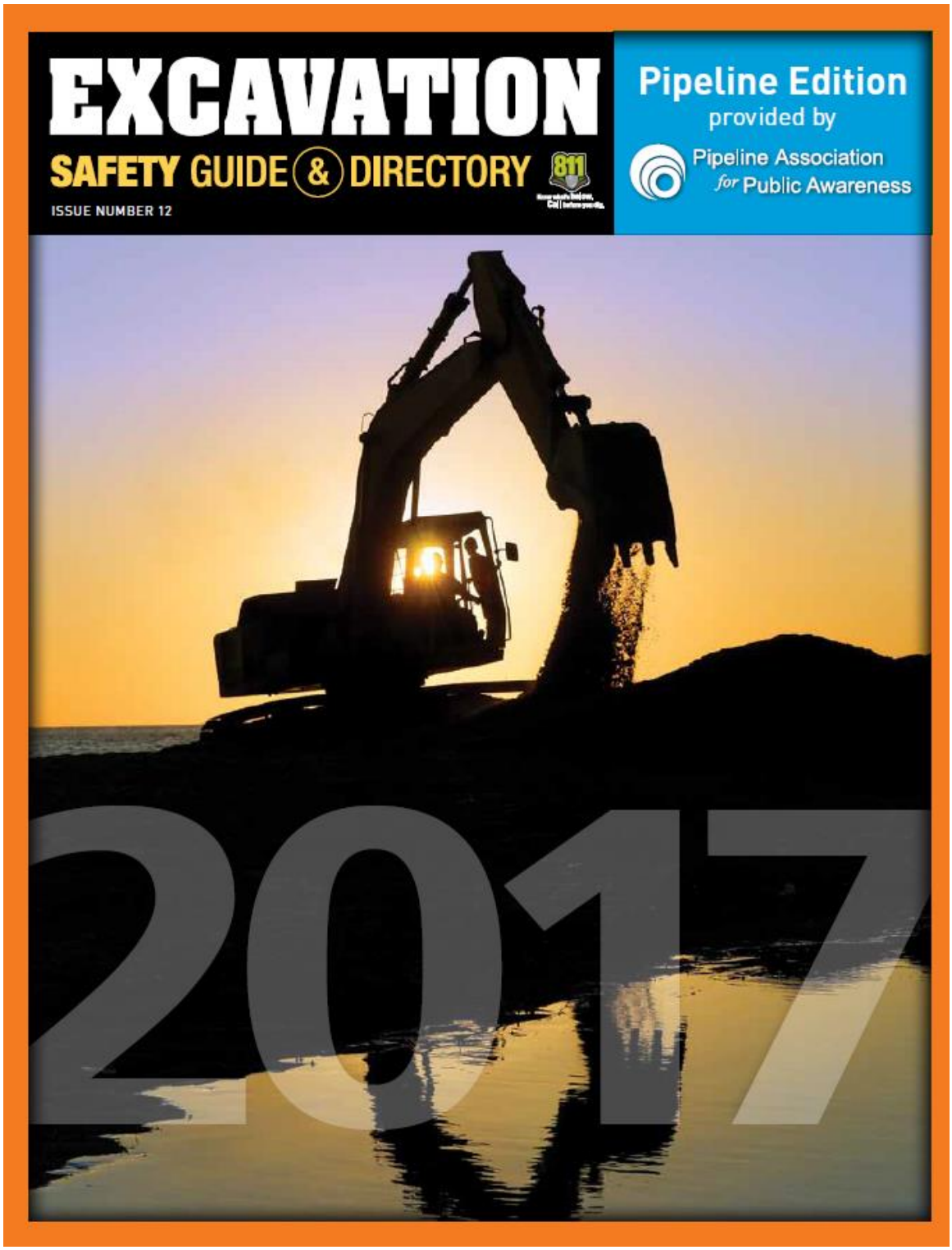
Appendix B: Front Cover of the Excavation Magazine



Appendix C: Gas Incident Brochure

How to respond in a gas emergency

- Avoid any action that may create a spark.
- Do NOT start vehicles, switch lights or use 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.
- Wait for emergency responders to arrive.
- Do NOT attempt to close any pipeline valves.

Not all line markers are dig markers.

Avista's large natural gas transmission pipelines have aboveground yellow markers (see picture) which display a 24-hour emergency response number. These markers only indicate the general route of transmission lines, not their exact locations. Avista has many other distribution main lines and service lines that generally DO NOT have these markers. To be safe, always call 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.**

For additional information

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

Avista Utilities 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 with alternative languages please call 800-227-9187.

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

AVISTA

AVISTA

Excavator Safety near Natural Gas Pipelines

We just want you to be safe.

Know what's below to be safe

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

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

It's the law to call before you begin any digging project

- Call 811 (or visit **call811.com**) two business days before you dig to have underground utilities marked.
- Use white paint to mark the perimeter of where you intend to dig.
- Wait for all utility lines to be marked before proceeding.
- There will be a 2-foot tolerance zone on either side of the markings.
- Hand dig to expose and determine the exact location before you proceed with excavation.
- 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. Avista needs to inspect the line.

Ground marking identification

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

Locates are good for the following time:

WA - 45 days

ID - 21 days

OR - Life of the project

In WA and ID if anyone digs after the above timeframe, they are digging with an invalid ticket. In OR everyone is required to maintain the locates for the life of the project.

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.

Hazards when natural gas is released

- Natural gas mixed with air can be highly flammable and easily ignited by heat or sparks.
- Natural gas can be ignited when there is a 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 will displace oxygen without warning and can cause dizziness or even asphyxiation.

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.

Avista
Public Safety Dept.
P.O. Box 3727
Spokane, WA 99220-3727
publicsafety@avistacorp.com

AVISTA

AVA147i

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.