Pipeline Public Awareness Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis Report

Public Awareness Program Working Group

Public Awareness Program Working Group (PAPWG)
Strengths, Weaknesses, Opportunities, Threats (SWOT) Analyses

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Acronyms & Abbreviations

API – American Petroleum Institute
AOPL – Association of Oil Pipelines
APGA – American Public Gas Association
CFR – Code of Federal Regulations
ERG – Emergency Response Guidebook
EMS – Emergency Management Services
ER – Emergency Response
FEMA – Federal Emergency Management Agency
FEMA EMI – FEMA Emergency Management Institute
FERC – Federal Energy Regulatory Commission
INGAA – Interstate Natural Gas Association of America
LDC – Local Gas Distribution Company
LEPC – Local Emergency Planning Committee
NEB – National Energy Board (Canada)
NPMS – National Pipeline Mapping System
PAP – Public Awareness Programs
PAPWG – Public Awareness Programs Working Group
PERWG – Pipeline Emergency Response Working Group
PHMSA – Pipeline and Hazardous Materials Safety Administration
PIPA – Pipelines and Informed Planning Alliance
PSC – Public Service Commission
PST – Pipeline Safety Trust
PUC – Public Utilities Commission
NACo – National Association of Counties
QA/QC – Quality Assurance/Quality Control
RP – Recommended Practice
SWOT – Strengths, Weaknesses, Opportunities, and Threats
TAG – PHMSA Technical Assistance Grants

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Executive Summary

The Pipeline and Hazardous Materials Safety Administration (PHMSA) convened a collaborative stakeholder group, the Public Awareness Program Working Group (PAPWG), in September 2013. The mission of the PAPWG was to review pipeline safety public awareness data and information from various sources, identify relevant topical review areas, perform "strengths, weaknesses, opportunities, and threats" (SWOT) analyses of those areas, and issue a report of key findings to support improving public awareness.

Federal pipeline safety regulations require pipeline operators to conduct continuing public awareness programs to provide pipeline safety information to four stakeholder audiences: the affected public, emergency officials, local public officials, and excavators.

Public awareness of pipeline locations and safety concerns is vital to the continued safe operation of pipelines. Effective pipeline operator public awareness programs are the key to communicating with affected stakeholders and helping to ensure the safety of pipeline operations. Effective public awareness programs can enhance public safety, improve pipeline safety and environmental performance, build trust and better relationships with stakeholders along the pipeline route, and foster understanding of the need for pipeline maintenance and right-of-way activities, as well as preservation of pipeline rights-of-way to enhance maintenance and emergency response capabilities.

The intent of the PAPWG was not to prescribe requirements or mandates by any public or private entity. The intent of this SWOT Analysis Report is to identify findings that may serve as a source of information to foster continuous improvement in pipeline public awareness. Pipeline safety stakeholders are encouraged to review this report and understand how they may use the information to strengthen future public awareness requirements and outreach efforts.

Findings and Conclusions

Key findings noted in this report as a result of the SWOT analyses conducted by the PAPWG include:

1. Stakeholder input has impacted the way pipeline operators interpret the requirements for and results of public awareness programs and how they implement those programs. Operators see value in the consistency provided through regulations. They have learned from experience and have applied lessons learned to drive continuous improvement in their programs.

2. API RP 1162, 1st Ed., has provided a solid framework for effective operator public awareness programs and continuous improvement. Existing operator programs provide a solid base from which to improve.

3. The national 811 Call Before You Dig number is a simple and effective message; there is a widespread and consolidated effort to promote the use of 811; and the awareness of 811

among professional excavators, along with the safe digging message it imparts, is improving.

4. There are some indications that collaborative public awareness efforts among operators could be effective with the public. However, there are concerns with how operators could implement collaborative efforts and be able to demonstrate they are meeting regulatory requirements and that their programs are effective.

5. While there are some good examples of operators communicating well with emergency responders, there are still weaknesses in the overall effectiveness of pipeline operators' outreach to emergency responders. Operators are not consistent in adequately identifying, communicating with, and coordinating with all emergency response stakeholders within a community. This is evidenced in that many emergency responders remain unaware of the existence, characteristics, and risks of pipelines in their areas of operation. This is caused in part by the fact that there is no assurance that pipeline information is disseminated effectively within the emergency responder community even when it is conveyed by the pipeline operator. Additionally, it is often difficult to effectively communicate information to volunteer fire departments.

6. There are weaknesses and difficulties in measuring the effectiveness of pipeline operators' public awareness programs. This stems from a lack of clarity regarding effectiveness evaluation requirements and in identifying and justifying effectiveness criteria, and difficulties in selecting and implementing criteria to measure behavioral changes and bottom-line results.

7. Some operators need to improve documentation of their public awareness programs overall, including: Considerations for selecting specific methods, messages, and materials; outreach efforts; results of annual audits and program improvements; and, consideration and effectiveness of supplemental efforts.

8. The basic differences between interstate pipelines and distribution systems greatly affect development and implementation of public awareness programs. While interstate pipeline operators prefer to distance their facilities from populated areas, distribution operators must install distribution pipelines in developed areas in order to serve customers. The relationships between these differing categories of operators and their stakeholder audiences dictate differences in message delivery methods and effectiveness evaluation processes that pose challenges to compliance with public awareness regulations.

9. Small distribution operators, particularly municipally-owned systems, have unique stakeholder characteristics. The level of awareness among these operators' audiences is often relatively high due to a deep level of market penetration and decades of providing service, which makes improvement in awareness challenging. Further, members of the public officials, emergency officials, and excavators audiences are many times also part of other audiences, especially the affected public, and receive multiple messages. This can contribute to message overload and low response rates to evaluation surveys. Also, elected and appointed officials, who are members of the public officials audience, are often directly associated with the operator as members of the governing body or

employees of the municipality, which provides a base level of awareness. Given the high level of contact and familiarity with many small operators, compliance with the regulation can consume significant resources and produce little change in the level of awareness.

Future Use of This Report

1. Where pipeline facilities and products are sufficiently similar or readily differentiated, consistent and widespread messaging could alleviate duplications and discrepancies in public awareness programs and meet compliance requirements more effectively and efficiently. Individuals may be part of more than one stakeholder audience of a single operator, may be in the stakeholder audiences of more than one operator, may enter or exit different audiences, and are likely at some time to be in the vicinity of an operator with which they have no relationship. Therefore, consistent and widespread messaging is vital to the safety of the general public, whether or not an individual is in his or her "home" stakeholder audience, or any audience at all.

2. Stakeholders may review gaps identified in this report to determine if the regulations and/or API RP 1162 can be strengthened in those identified areas.

3. Stakeholders may review opportunities identified in this report to identify actions that can be taken by regulators, industry associations, operators, and other stakeholders to enable collaboration for a material impact(s). For example, like 811.

4. Operators may review this report to identify opportunities to improve effectiveness of individual programs.

5. Stakeholders may provide this report with non-operator stakeholder associations to share with their membership.

Pipeline Public Awareness
Strengths, Weaknesses, Opportunities, Threats (SWOT) Analyses

Introduction

Federal pipeline safety regulations for gas pipelines (49 CFR § 192.616) and hazardous liquid pipelines (49 CFR § 195.440) require pipeline operators to develop and implement continuing public awareness programs (PAP) to provide pipeline safety information to four stakeholder audiences: the affected public, emergency officials, local public officials, and excavators.

Collaboration and open communication among all pipeline safety stakeholders is vital to fostering continuous improvement to enhance public safety, improve emergency preparedness, protect the environment, and prevent damage to property and facilities relevant to gas and hazardous liquid pipelines. Public awareness of where pipelines are located and an understanding of the safety concerns and risks associated with pipeline transportation are vital to the continued safe operation of pipelines.

In 2010, PHMSA and State regulators initiated targeted inspections of pipeline operators' public awareness program effectiveness to assess regulatory compliance. To further strengthen the understanding of public awareness requirements and outreach efforts, PHMSA convened a collaborative stakeholder group, the Public Awareness Programs Working Group (PAPWG), in September 2013 and performed the lead role in organizing and facilitating the PAPWG's collaborative efforts.

The PAPWG's mission and plan of action called for two distinct actions. First, the PAPWG would review and conduct "strengths, weaknesses, opportunities, and threats" (SWOT) analyses of various aspects of pipeline safety public awareness, using existing data and information from a variety of sources. The SWOT analyses were conducted during numerous group meetings.

Second, using the results of those SWOT analyses, the PAPWG would prepare a summary report of key findings to support improvements to public awareness requirements and outreach efforts. This final summary report was prepared by PHMSA in conjunction with review and input by the PAPWG.

The intent of the PAPWG efforts was not to prescribe requirements or mandates by any public or private entity. The intent of the SWOT Analysis Report is to identify findings that may serve as a source of information for future consideration and/or action by various pipeline stakeholders. Pipeline safety stakeholders are encouraged to review this report and understand how they may use the information to strengthen future public awareness requirements and outreach efforts, and to foster continuous improvement.

PAPWG Participants

Over 18 representatives from a spectrum of public awareness stakeholder groups participated in the PAPWG. Organizations and stakeholder groups represented by the PAPWG are noted in Appendix A. These stakeholders included Federal and State pipeline safety regulators, gas and hazardous liquid pipeline trade associations, and municipally operated gas distribution

operators. The PAPWG also included stakeholders representing public pipeline safety interests, emergency response and public safety officials, public safety advocates, and excavators.

PAPWG participants came to the table prepared and empowered to attend the scheduled meetings and actively participate in the dialogue. Participants were asked to be able and ready to reach out to their represented constituent stakeholders to seek out data and information, as necessary, to accomplish the PAPWG mission. Participants were also responsible for reviewing, analyzing, and commenting on the data, gathering information, and drafting a report in a timely manner.

Methodology and Information/Data Sources

Methodology

The approach methodology used by the PAPWG in this effort was the performance of SWOT analyses. The SWOT analysis included evaluation of the following:

- **Strengths**: Internal characteristics of current public awareness programs deemed to be favorable to the topical review area;
- **Weaknesses**: Internal characteristics of current public awareness programs deemed to be unfavorable to the topical review area;
- **Opportunities**: External characteristics or elements that could be exploited to improve the effectiveness of public awareness programs in the topical review area;
- **Threats**: External characteristics or elements that do or could impede the effectiveness of public awareness programs within the topical review area.

In open and freeform discussions, the PAPWG identified topical review areas relevant to public awareness and pipeline operator public awareness programs. SWOT analyses were performed on the following topical review areas:

	Topical Review Area	Description
1	Objective of Pipeline Operator Public Awareness Programs	A review of the goals and expected outcomes of pipeline operators' individual public awareness programs.
2	Objective of Public Awareness for Pipeline Safety	A broad and general review of the goals and expected outcomes of stakeholders' collective efforts to improve public awareness of pipeline safety.
3	Public Stakeholders	A review of the impact of public awareness programs on the public.

4	Emergency Response Stakeholders	A review of the impact of public awareness programs on emergency responders.
5	Excavator Stakeholders	A review of the impact of public awareness programs on excavators.
6	Public Official Stakeholders	A review of the impact of public awareness programs on public officials.
7	Stakeholder Message Delivery Frequency	A review of message delivery frequency in public awareness programs.
8	Effectiveness Evaluation and Program Changes	A review of pipeline operators' effectiveness evaluation processes and the impact of program changes.
9	Annual Audit and Program Changes	A review of the regulatory evaluation process and the impact of program changes.
10	Stakeholder Identification	A review of how operators identify target stakeholder audiences.
11	Public Awareness Program Inspection Form (PHMSA Form 21) and Inspection Process	A review of the Public Awareness Program Inspection Form 21.
12	Public Awareness Federal Regulation	A review of the Public Awareness regulations at 49 CFR 192.616 and 49 CFR 195.440, which incorporates by reference the 1st edition of American Petroleum Institute Recommended Practice 1162).
13	Operator Written Plan	A review of pipeline operators' written Public Awareness plans.
14	API RP 1162, 2nd Edition	A review of American Petroleum Institute Recommended Practice 1162, 2nd Edition (not incorporated by reference in the Code of Federal Regulations).

All Working Group participants were encouraged to provide input, participate in discussions, offer counterpoints, and ask for clarifications. They were also encouraged to share information with and seek input from their own organizations and represented constituent stakeholders. The results of those SWOT analyses are presented in Appendix B, organized by topical review area and then by strengths, weaknesses, opportunities and threats. Appendix C reverses that order and presents the results organized by strengths, weaknesses, opportunities and threats, and then by topical review area.

Information/Data Sources

The PAPWG members contributed information and data to support the discussions and SWOT analyses. A listing of specific data and information sources is provided in Appendix E. Some discussion points were provided as individual points of view from Working Group member experiences. Additionally, PAPWG members were also asked to solicit feedback from within their own organizations and constituent stakeholders during the effort.

Information and data was presented from PAP inspection summaries, feedback and comments from public awareness workshops, industry standards, Federal pipeline safety regulations, stakeholder and guest presentations, and other relevant sources. Appendix D presents information on Federal public awareness program regulations and on American Petroleum Institute (API) Recommended Practice (RP) 1162.

Appendix A:
PAPWG SWOT Analyses
PAPWG Represented Organizations and Stakeholder Groups

Appendix A: PAPWG Represented Organizations and Stakeholder Groups

The following organizations and stakeholder groups were represented by one or more participating members of the PAPWG.

Organization	Stakeholder Group
PHMSA	Federal Pipeline Safety Regulator
Pipeline Safety Trust/PIPA	Public
Distribution Construction Co.	Excavators
Municipal Gas Authority, GA	Municipal Gas Distribution (Industry)
American Public Gas Association	Pipeline Operators (Industry)
Brookings County, SD	Public Official / Local Government
National Association of Counties	Public Official / Local Government
Rhode Island PUC	State Pipeline Safety Regulator
TransCanada	Association of Oil Pipelines (Industry)
Enterprise Products	American Petroleum Institute (Industry)
Volunteer Fire Department, Sissonville, WV	Emergency Response / Public Safety
Washington Gas	American Gas Association (Industry)
Georgia PSC	State Pipeline Safety Regulator
Enbridge	Interstate Natural Gas Association of America (Industry)
Spectra Energy	Pipeline Emergency Response Working Group (PERWG)

Appendix B:
PAPWG SWOT Analyses
Organized by Topical Review Area, Then by SWOT Attribute Area

Appendix B: SWOT Analyses, Organized by Topical Review Area, Then by SWOT Attribute Area

Appendix B contains the SWOT analyses developed through the PAPWG discussions for the following topical review areas:

- Objective of Pipeline Operator Public Awareness Programs
- Objective of Public Awareness for Pipeline Safety (Broad)
- Public Stakeholders
- Emergency Response Stakeholders
- Excavator Stakeholders
- Public Official Stakeholders
- Stakeholder Message Delivery Frequency
- Effectiveness Evaluation and Program Changes
- Annual Audit and Program Changes
- Stakeholder Identification
- PAP Inspection Form (PHMSA Form 21) and Inspection Process
- PA Federal Regulation
- Operator Written Plan
- API RP 1162, 2nd Edition

The analyses in Appendix B are organized by topical review area, and then by SWOT attribute area (i.e., strengths, weaknesses, opportunities, and threats). Appendix C reverses that order and presents the SWOT analyses organized by the SWOT attribute area, then by the topical review area.

Appendix B:
PAPWG SWOT Analyses
Organized by Topical Review Area, Then by SWOT Attribute Area

Review Area: Objective of Pipeline Operator Public Awareness Programs
Strengths (Internal)
• Some operators go beyond compliance to reach out to stakeholders. • API RP 1162, 1st Ed. provides a solid framework for continuous improvement and stakeholder involvement, from which to build. • Stakeholder input impacted the way operators interpret and implement public awareness programs.
Weaknesses (Internal)
• Operators do not always ensure contractors are meeting requirements (can cross over to other areas). • Some operators are driven by compliance requirements and not communication resonance. • Lack of clarity on what "maintain liaison" means as stated in federal regulations (49 CFR Parts 192.615 and 195.402) and API RP 1162, 1st Ed. • Operators may not effectively leverage channels or other outreach methods to promote public awareness. • Field and technical operations personnel may not be able to support public awareness communications due to other job priorities. • Multiple operators, within a corridor, may not coordinate public awareness efforts. • Operators are concerned with how their collaborative efforts will support compliance to regulations because there is little guidance on how collaborative messages are to be structured and little assurance that operators will receive credit from regulators for collaborative messaging. • Lack of common definitions and requirements for data collection and data reporting. • Unclear on how to establish acceptable measures for outreach and awareness. • Inadequate communication of the risks and potential impacts from the type of commodities that could be released from the pipeline.
Opportunities (External)
• Move from compliance-driven programs toward programs embracing more corporate social responsibility. • Leverage existing platforms/communication channels for stakeholder audiences. • Leverage and train operator field personnel to support PA activities. • Identify field personnel and get their buy in on supporting public awareness (i.e. develop an ambassador program). • Continue to share best practices among operators. • Evaluate if the application of management systems concepts could be beneficial to public awareness programs and, if so, where these would be appropriate (e.g., may not be applicable to small operators). For example, see API RP 1173 (Safety Management Systems) when it is published. • Leverage consolidated generic messaging (i.e. national messages in propane industry).

- Look at other public safety campaigns, where stakeholder penalties are not involved, to study how they are evaluated for effectiveness (i.e. emergency preparedness, wildfire preparedness, bullying, etc.).
- Consider developing a campaign or common messaging to communicate and increase public awareness about pipeline safety, for example for leak recognition and response.

Threats (External)

- Operators are required to take action but stakeholders are not required to listen.
- Compliance-driven programs may stifle innovation.
- Language translation of public awareness messages may be completed by translators unfamiliar with the industry.

Review Area: Objective of Public Awareness for Pipeline Safety (Broad)

Strengths (Internal)

- National tools can be useful to communities and on a local level (like the National Pipeline Mapping System (NPMS), 811).
- The ability to leverage stakeholders' existing platforms/communication channels for stakeholder audiences (e.g., fire service, LEPCs).
- Many stakeholders are clearly identified.
- Common/shared vision and goals.
- Non-proprietary.
- Consistent baseline messages.
- Industry sees value in regulations.
- In best interest of all stakeholders and safety.
- Multiple communication methods and approaches available.
- Have learned from experience and applied lessons learned for continuous improvement.
- Sharing best practices.

Weaknesses (Internal)

- Missing additional stakeholders (e.g., other governmental organizations involved in incident response, operators of other critical infrastructure).
- Too many messages; similar messages.
- Information overload.

- Traditionally, assumptions have been made on how to best communicate with stakeholders.
- Lack of consistency in measuring effectiveness.
- Lack of a public face/icon of pipeline public awareness (e.g., national safety campaign).
- Have not leveraged existing platforms/groups.
- Lack of common understanding of behavior change and how to measure.
- Limited resources.

Opportunities (External)

- Elevate environmental protection messaging in public awareness programs.
- Reword damage prevention messages to place more emphasis on benefits of calling 811.
- Target environmental audiences.
- Understand what's important to audiences.
- Maximize opportunities of receptive audiences after pipeline incidents.
- Create a plan to sustain involvement of audiences after pipeline incidents.
- Give stakeholders information/data to help their planning (operators).
- Share best practices and lessons learned.
- Leverage existing stakeholder platforms.
- Review Canada's National Energy Board (NEB) regulations to determine if they contain additional opportunities to improve public awareness for pipeline safety.
- Encourage existing stakeholder groups to champion aspects of pipeline safety awareness that are most important to their members.
- Focus on reaching the gray zone (unaware, un-opinionated groups).
- Use compelling messaging that focuses on generating interest and gaining stakeholder attention regarding pipeline awareness and safety rather than touting the benefits of pipelines.
- Establish a common objective among public awareness programs -- encourage pipeline safety.
- Encourage operator collaborative efforts towards promoting consistent and cohesive messages to community stakeholders, in order to overcome compartmentalization (i.e., disconnect between large and small operators, and between transmission, gathering and distribution operators).
- Utilize targeted stakeholder interactions (e.g., focus groups) to stimulate program feedback and establish two-way dialogues with stakeholders.
- Balance messages of "risk" versus "pipelines are safe."

Threats (External)

- Credibility of the messenger may impact the receptiveness to public awareness messages.

- Lack of interest in communicated public awareness or pipeline safety messages by affected stakeholders.
- Compliance-driven programs may stifle innovation.
- Differing roles and a lack of role understanding between federal agencies in pipeline safety can confuse stakeholders.
- Limited resources.
- The success of public awareness programs may be impacted by human nature - resistant to change.
- Stakeholders are likely to be unreceptive to pipeline awareness and safety messages unless it is shown to impact them directly.
- Difficulty getting stakeholders' attention.

Review Area: Public Stakeholders

Strengths (Internal)

- LDC customers are more likely to be aware of distribution pipeline systems.
- Multitude of media and methods.
- Collaborative outreach for common messaging reduces excessive communication with the public.
- National campaigns (e.g. promotion of 811).
- New technology is improving the ability to identify audiences for public awareness messages.

Weaknesses (Internal)

- Difficult to capture the immediate attention of stakeholder to compel them to read the public awareness materials.
- Content is not always pipeline specific.
- Perception that operators must communicate too many message topics.
- Gaps in outreach at the appropriate time in public awareness requirements for non-FERC new projects (not applicable to distribution systems).

Opportunities (External)

- Growing pipeline infrastructure drives the need for continuous improvement in public awareness programs.
- Strike a balance between information saturation and desensitization.
- Balance communication of risk versus benefits of pipelines.
- Provide more system-specific information.
- Strike a balance between informed and saturated.
- Use multimedia and technology (future advancements).

- Leverage communications principles to develop effective public awareness programs (e.g., messaging consistency, research, repetition).
- Leverage past incidents to show where public awareness paid off in incident response or incident management.

Threats (External)

- Public may not embrace, as its responsibility, to report unsafe pipeline conditions or threats to pipeline operators.
- Public sees pipeline safety as out of their control.
- Public experiences information overload, at times.
- Perception that increased public awareness budgets are proportional to improved programs.
- Variable public perception of pipelines and operators in general.
- Target populations are growing due to production areas.

Review Area: Emergency Response Stakeholders

Strengths (Internal)

- Interested and engaged (want to know).
- Operator public awareness programs represent a concerted effort to engage key emergency response stakeholders.
- Operators are proactively building relationships through a variety of methods.
- Findings from the Pipeline Emergency Response Working Group (PERWG) final report.
- Audit program is working and getting operators to increase outreach.
- There are a lot of resources available to emergency responders, such as NPMS, Emergency Response Guidebook, training curricula, etc.
- Some states (e.g., Pennsylvania) have done a good job of getting messages out to all emergency responders.
- Constant communication has improved consistency and raised trust among operators and emergency responders.
- Existing operator programs provide a solid base from which to improve.

Weaknesses (Internal)

- Lack of consolidation of common messages and individual resources.
- Operators are not, in all cases, adequately identifying and proactively working and coordinating with all emergency response stakeholders within a community.
- Emergency responders are not aware of differences in pipeline systems and potential impacts.

- Not all operators and emergency responders have an adequate understanding of the National Incident Management System (NIMS).
- Providing general messages for all emergency responders versus role specific-information.
- No assurance that pipeline information is appropriately disseminated within the emergency response community.
- Sharing and understanding capabilities and gaps between operators and emergency responders.

Opportunities (External)

- Leverage and engage state training programs.
- Post incident response lessons learned online for other first responders to review.
- Identify if pooling resources among operators can create efficiencies and cost savings for operators and emergency responders.
- Finalize and promote inclusion of pipelines in Federal Emergency Management Agency (FEMA) all-hazards mitigation.
- Add pipeline scenarios into FEMA Emergency Management Institute (EMI) course on National Infrastructure Protection Plan (Class IS-860-B).
- Develop tools like a consistent pipeline incident checklist for emergency responders.
- Simplify communication through the hierarchy of emergency response command in jurisdictions with pipelines.
- Provide role specific-information for emergency responders (e.g., fire services versus 9-1-1 versus law enforcement, as well as for different levels of technical expertise within these audience groups).
- Leverage pipeline operators who are also volunteer firefighters.
- Identify if 811 call centers can be leveraged for emergency response (e.g., identifying affected operators and other potentially affected utilities).
- Expand mutual aid agreements among rural and municipal communities.
- Explore state emergency responder organizations taking a leadership role in the delivery of pipeline awareness and emergency response training and certification.

Threats (External)

- Emergency response stakeholders have information that would support more effective public awareness programs for emergency responders, that is not being shared or updated with operators.
- Volunteer firefighters have different needs than career firefighters and they may lack preparation and training to respond to pipeline emergencies.
- Firefighters may not know the right questions to ask.
- Emergency responders have many responsibilities; pipelines may not be their highest priority.
- No uniform national training requirements for fire fighters for pipeline incident response. Requirements are established at the state level.
- Information overload.

- Emergency response organizations lack time and other resources to prepare for pipeline emergencies.
- Emergency responders 'fear' of who to answer to among multiple government agencies.
- No requirements for emergency responders to meet with operators.
- Lack of knowledge of the hierarchy of command responsibilities and jurisdictions associated with pipelines.
- Difficulty of identifying specific pipeline and who owns it during an emergency in a multi-line ROW.

Review Area: Excavator Stakeholders

Strengths (Internal)

- Consolidated effort to promote 811.
- 811 "Call Before You Dig" is a simple message.
- There is a wide variety of resources to promote 811 (e.g., logos, videos, communications plans, etc.).
- Public awareness programs address a wide range of excavation-related pipeline safety issues, for example risks from specific types of excavation, excavation trends in specific areas, dangers to the excavators, etc.
- Promoting public awareness and damage prevention among excavators is ingrained in the culture of many operators.
- Professional excavator awareness of 811 and the need for safe digging is improving.

Weaknesses (Internal)

- Limited resources may not be targeted to the excavators who need the most education.
- The lack of adequate, specific data (e.g., impacts of exemptions) makes it difficult to know where to apply targeted outreach resources.
- Lack of knowledge about one-call laws and requirements.
- Excavators that do not perceive of themselves as excavators or subject to one-call requirements.
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Opportunities (External)

- Reword damage prevention messages to place more emphasis on benefits of calling 811.
- Reexamine the totality of outreach efforts.
- Look at opportunities for a nationwide campaign for public awareness.
- Target excavator messages for specific excavator groups, such as landscapers, fencing companies, homeowners, etc.
- Adopt a more data-driven, strategic approach to excavator outreach.

- Consolidate public awareness surveys, as appropriate.
- Improve gathering and development of adequate, specific data regarding exemptions, near misses, damages, etc.
- Make it clear to excavators that damage prevention is about their safety and their bottom line.

Threats (External)

- Excavators travel between regions/states where the requirements of damage prevention laws vary.
- Lack of damage prevention program enforcement in some states.
- Non-justified exemptions and weak one-call laws.
- To an excavator, time is money.
- Inaccurate and/or untimely locates creates a lack of trust.

Review Area: Public Official Stakeholders

Strengths (Internal)

- Most public officials are aware of distribution systems within their communities.
- PIPA Recommended Practices provide information and clarity on safe land use and development near pipelines.
- NPMS is a resource.
- High interest on the part of local community organizations in receiving information.
- The PHMSA Technical Assistance Grant (TAG) program makes funding available to communities for pipeline safety initiatives.

Weaknesses (Internal)

- Identifying public official stakeholders.
- Public awareness message frequency.
- Lack of customization of messages to specific public officials based on roles and responsibilities.
- NPMS limitations.

Opportunities (External)

- Local public officials can be champions of pipeline safety when adequately engaged.
- Provide information related to land use and development near pipelines; reference the PIPA Recommended Practices.
- Provide information in a way that can be shared.
- Provide information on new pipelines near existing developments.
- Promote PIPA Recommended Practices.

• Share pipeline centerline data for planning purposes. • Better define local official audience relative to public awareness outreach. • Every local official has a constituency that could be considered a captive audience. • Consider consolidated, common messages. • Leverage interest created by visibility of pipeline incidents; local officials affected by incidents could become proponents of expanded public awareness. • Leverage high-interest community organizations. • Promote PHMSA Technical Assistance Grants (TAG).
Threats (External)
• Turnover in public officials and staffs • Variability in the structure of local public governmental organizations and the roles and responsibilities of local public officials. • Many local officials are not adequately engaged unless it is a 'hot' topic (competing priorities). • Lack of interest in and awareness of pipelines. • Local officials have interests that compete with zoning around pipelines, e.g., financial growth of communities. • Implementation of PIPA practices is complex and can create disincentives. • Political pressure may impact the level of information that is shared by public officials.

Review Area: Stakeholder Message Delivery Frequency
Strengths (Internal)
• Generally, operators are following or exceeding the message frequency requirements.
Weaknesses (Internal)
• Public officials messaging frequency may be too long.
Opportunities (External)
• Expedite notifications for newly built and acquired pipelines. • Clarify the message delivery frequency for idle lines.
Threats (External)
• Potential conflict or confusion on contact information resulting from acquisitions.

Appendix B:
PAPWG SWOT Analyses
Organized by Topical Review Area, Then by SWOT Attribute Area

Review Area: Effectiveness Evaluation and Program Changes
Strengths (Internal)
• Operators use multiple data sources to determine effectiveness. • Industry collaboration efforts, value in aggregate data, trending over time.
Weaknesses (Internal)
• Difficulty in selecting and measuring the effectiveness of the multitude of media and methods. • Identifying and justifying effectiveness criteria. • Difficulty in measuring behavior changes as a bottom-line metric. • Lack of clarity regarding entire effectiveness evaluation requirements, e.g., PHMSA expectations. •
Opportunities (External)
• Develop a 'toolbox' to promote effective program evaluation tools for use by operators. • Consider the use of cooperative stakeholder surveys with other operators where appropriate. • Do root cause analyses of unsatisfactory effectiveness evaluations. • Do more in-depth, segregated surveys of significant, specific subgroups where they exist within a stakeholder audience. • Consider situations in which oversampling or under sampling should be used to represent the affected general population. • Establish common industry definitions for bottom-line results like near misses and encroachment. • Identify realistic components that can be measured and changed relative to bottom line results. • Explore inspection practices that allow collaboration among operators in outreach efforts in common ROW and/or geographic areas. • Provide more guidance on how to determine sample sizes, response rates, etc. and/or resources on where to obtain info. • Consider ways to gather data and gauge effectiveness of public awareness programs nationwide. • Identify ways to improve program effectiveness evaluation methods and metrics. • Clarify that effectiveness evaluations should be performed on a frequency of no less than every four years. • Specify that operators could include performance metrics in the written plan on how to evaluate their effectiveness.
Threats (External)
• Flexibility in evaluation approaches can lead to concerns due to a lack of rigor. • Too much prescription in evaluation approaches can lead to concerns due to a lack of needed flexibility by the operator. • Weakness in general awareness of pipelines in different geographic areas (e.g., rural and urban areas). • It is challenging to measure changes in behavior credited to specific influences, i.e., PAP versus other impacts.

• Effectiveness evaluation results are only as good as the questions asked.

Review Area: Annual Audit and Program Changes
Strengths (Internal)
• Most operators inspected attempted to conduct their annual audits and program changes. • Operators have consistent guidance (e.g., API RP 1162) to help them plan and conduct annual audits of their public awareness programs and make changes as needed.
Weaknesses (Internal)
• For annual audits, some operators did not have a good process to consider the need for supplemental requirements or the implementation of supplemental requirements previously determined to be needed. • Inadequate documentation of annual audits and how they are conducted. • Use of regulatory inspections as a method of performing annual audits.
Opportunities (External)
• Better documentation of program changes as a result of the annual audit. • Develop a consistent methodology and process for conducting the annual audit.
Threats (External)
• [none noted]

Review Area: Stakeholder Identification
Strengths (Internal)
• Current four stakeholder groups are broad enough to allow for appropriate flexibility.
Weaknesses (Internal)
• Some LDCs and regulators may interpret the requirement to identify LDC audiences differently, leading to confusion.
Opportunities (External)
• Better tailor identification of subgroups within larger stakeholder groups (e.g. 9-1-1 dispatchers, farmers, schools, land planners, etc.).

- Identify and reach stakeholders that may be impacted but are difficult to reach, such as transients.
- Better targeting of messages to stakeholder subgroups, such as law enforcement, EMS, 911, farmers, etc.
- Distributing information through trusted channels (e.g., farm bureau, NACo, trade publications, etc.).

Threats (External)

- Expectation of "accuracy" with regard to identifying stakeholders.
- Observations from PAP inspections by regulators may not apply to all pipeline types and must be carefully considered when trying to apply across the board.
- Changes in population lead to difficulties in reaching all stakeholders within that population.
- Information is not always read by the appropriate persons.
- Transient people (campers, hunters, etc.).

Review Area: PAP Inspection Form (Form 21) and Inspection Process

Strengths (Internal)

- Use of standardized inspection form provides for better preparation for and conductance of audits.

Weaknesses (Internal)

- Inspection questions in Section 4 of Form 21 need clarification (ties to Section 8 of RP 1162).
- (Possibly a requirement weakness as opposed to a form weakness.) Inspection form imposes requirements that are not spelled out in regulation or RP 1162. What was once considered guidance is now mandatory requirement, thus change bullet points on form from "guidance" to become check boxes.
- Inspection form does not provide for 192.616(f) and 195.440(f).
- Although form used in inspections was same, process of inspection varied among states relative to time and complexity.
- (Requirements) Management support requirements lack clarity on whether signature, name, or titles/positions are required. Also, lack of clarity on what is required when management changes.
- (Requirements) More clarity is needed behind unique attributes and characteristics requirements.
- (Requirements) Difficult for distribution operators to know what information is to be conveyed relative to pipeline facility locations.
- (Requirements) Regulatory requirement on outreach to municipalities, etc. is unclear of whether focus is on facility, pipeline, or the intended audiences.
- (Requirements) Unclear definition for "maintain liaison" in regulations.

- (Requirements) Clarify that annual implementation audit should be evaluated comprehensively with regard to scope and frequency, and conducted independently of regulatory inspection.
- Lack of clarity for "bottom line results" and how near misses and damages are evaluated.

Opportunities (External)

- Align inspection protocols with improvements in public awareness programs and outreach efforts. For example the use of public service announcements, mass media, social media, and stakeholder representatives.
- Better align questions with subject matter, e.g., move Question 1.06 to Section 4.0.
- Better align effectiveness measure with appropriate outreach methods.
- Eliminate ambiguity of whether supplemental activity is needed and evaluating whether supplemental should be considered.
- Encourage more joint/team inspections and/or inspector training.

Threats (External)

- Inspection form questions migrate into de facto requirements.
- Inspection form and process could hamper public awareness program effectiveness and innovation.
- Use of different forms by states.

Review Area: PA Federal Regulation

Strengths (Internal)

- Regulations are driving improvements in public awareness.
- Code allows for justification of alternative methods in public awareness planning, implementation, and/or messaging.
- Regulation/code provides structure for a common understanding for plan development and implementation.
- Allows for the incorporation of API recommended practices.

Weaknesses (Internal)

- Some operators perceive that requirements stifle innovation.
- Vague common understanding of “educate” and “advise” in the code. What does this mean? (192.616(d))
- What does “commonly understood by a significantly number and concentration of the non-English speaking population…” mean? (192.616(g))
- PA code is a hybrid of prescriptive and performance based requirements. Makes it more difficult for operators to understand what to do.
- Regulations/codes are enforced operator-by-operator for compliance. May lead to inconsistencies and/or duplication of messages.

- Regulations do not encourage/or provide provisions for collaborative approaches and how individual operator performance measures can be met (take credit).
- "Unique attributes and characteristics" (192.616 (b) not clearly or commonly defined, explained how to incorporate into messaging, or what/how much should be made available to public.
- No language on how to address changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.).
- Evaluation expectations unclear (what's required and timing).

Opportunities (External)

- Determine balance between prescribed and performance-based requirements.
- Clarify or improve what "educate" means in the code and how to measure "educate".
- Clarify in the code (192.616(g)) that operators should assess and/or consider other languages commonly understood and define a significant number.
- Address managing changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.).
- To improve understanding and meaning, leverage other opportunities to disseminate results of Working Groups and educate stakeholders of changes/future plans.
- Clarify evaluation expectations (what's required and timing).

Threats (External)

- Federal public awareness program regulations currently do not apply to all gathering lines.
- Even if the audience is "educated" it still may not translate to a stakeholder taking an appropriate action (indirectly impacting an operator's bottom line results).
- Lack of thorough understanding of the code (subjective/interpretation) and what it really means (operators, regulators).
- Regulatory/rulemaking lengthy process to changing PA requirements.

Review Area: Operator Written Plan

Strengths (Internal)

- Operators have generally demonstrated they want to implement effective programs and implement continuous improvement.
- Strong industry associations that work together and are committed to improvement as an industry.
- Operators generally have written programs structured according to RP 1162.

Appendix B:
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- Operators are resourceful in leveraging various data sources to identify stakeholders.
- Operators generally understand the idea of evaluating bottom-line results, because the requirements are clear.

Weaknesses (Internal)

- Unclear benefit of the management support statement (signature & date) when budgets and resources are allocated based on management approval.
- Unclear understanding of expectations with regard to management support/and or statement, and how often should it be updated.
- Unclear understanding of requirement for making pipeline operators' emergency response plans available to emergency response officials.
- Unclear understanding of regulators' expectations for QA/QC processes (mailers/vendor checking).
- Measuring behavioral change has been challenging.
- Reluctance of operators to try innovative implementation techniques if there will be no compliance benefit.
- Evaluation process and procedures in written plan lacked objectives and goals to help evaluate effectiveness (justifying the goals may be subjective).

Opportunities (External)

- Encourage message mapping as a best practice to ensure all baseline messages are in outreach materials.
- Management accountability (senior management review and sign-off on results).
- Clarify what should be included in the management support statement and how often should it be updated (i.e. position title, not specific name).
- Provide clarity on appropriate and useful information (when and how) for ER officials (not necessarily an operator's full ER plan).
- Provide more guidance on what should be included an operator's QA/QC process (mailers/vendor checking).
- Standardized method to capture hits, near misses, and encroachment (part of bottom-line results measurement).
- Clarify evaluation expectations (what's required and timing)

Threats (External)

- Over reliance on third party vendors may create false compliance security.
- Using API RP 1162 tables (delivery methods/frequency/message) in a prescriptive manner rather than tailoring implementation to their specific program.
- Number of messages required to communicate in a single document/media (information overload/confusion).
- Measuring program outreach makes it difficult to use mass media because it's difficult to prove who was reached (performance vs. flexibility).

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Review Area: API RP 1162, 2nd Ed.
Strengths (Internal)
• RP 1162 provides consistent guidance to help operators plan and conduct their public awareness programs. • Less prescriptive and adds more flexibility for operators. • Section 5.5, "Identify Stakeholder Audiences", is an improvement from RP 1162 1st Edition, particularly for smaller operators, because it provides a more detailed audience description. • Section 9.3.1, "Measuring Outreach", provides more flexibility for using mass media than RP 1162 1st Edition.
Weaknesses (Internal)
• Ability of operators to meet the requirement to demonstrate that messages are sent and delivered. • API RP 1162 lacks clarity of guidance for performing public awareness program evaluations. • RP 1162 section on program evaluation provides lax guidance in what to measure for behavioral change and how to measure. • Minimum requirement not clear. • Section 9.1, "Pre-Test Effectiveness of Materials", is extremely prescriptive; there are methods available other than the use of a focus group. • Less prescriptive guidance, compared to RP 1162 1st Ed., offers more flexibility for operators but could result in less effective programs. • Page 8 (second paragraph) "…a distance of 660 ft…" does not clarify the minimum requirement. • No provision for managing changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.). • Section 5.3 discusses roles and responsibilities but does not discuss accountabilities (may be different).
Opportunities (External)
• Determine if behavior change should be a goal of public awareness programs and, if so, identify and describe examples of how to measure it, for all stakeholder audiences. • Include messages for stakeholders to "spread the word" about pipeline public awareness among their families, friends, neighbors, and peers. • Review RP 1162 for consistency in usage of "annual audit" versus "annual implementation evaluation" terminology. • Construction of new pipelines (gathering systems, shale systems) is not always supported by adequate public awareness outreach. • Clarify annual audit and effectiveness evaluation frequencies for applicability to regulated gas gathering lines. • Reduce number of key messages in baseline communication.

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- Clarify minimum requirements with API recommended practices and/or rulemaking (shall, should, may…).
- Identify improvements to baseline and enhancement message content (e.g., enhance ER information as required by emergency responders).
- Strike a balance between prescriptive and performance based.
- Include "recognition and response" in Section 5.1.3 (already included in the baseline message).
- Evaluate if the application of management systems concepts could be beneficial to public awareness programs and, if so, where these would be appropriate (e.g., may not be applicable to small operators).
- Better communications on benefits of calling or implications of not calling 811 (operator plans and messaging).
- Reword damage prevention messages to place more emphasis on benefits of calling 811.
- Revisit "Farmers" in affected public or excavator stakeholder audience group.
- Address managing changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.).
- Provide examples of behavioral changes (positive and negative).
- Revisit and clarify record documentation vs record retention requirements (last 5 years or documentation to support effectiveness and implementation). May consider extending evaluation period to 5 years (instead of "no more than 4 years).
- Management accountability (senior management review and sign-off on results).
- Revise guidance to include consideration of program enhancements during program planning and, separately, following program audits and evaluations.

Threats (External)

- Unclear on the rationale for "how to get additional information" moved to enhanced messages from baseline messages for all stakeholder audiences (risk).
- Public Official baseline delivery frequency is an ongoing threat. Could miss elected officials.
- Annex A: Baseline and Enhanced Program Summary Tables may give the impression messages, frequencies, and methods are optional and not enforceable.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Appendix C: SWOT Analyses Organized by SWOT Attribute Areas, Then by Topical Review Areas

Appendix C presents the SWOT analyses developed through the PAPWG discussions. The analyses in Appendix C are organized by the SWOT attribute areas (i.e., strengths, weaknesses, opportunities, and threats), and then by the topical review areas, including:

1. Objective of Pipeline Operator Public Awareness Programs
2. Objective of Public Awareness for Pipeline Safety (Broad)
3. Public Stakeholders
4. Emergency Response Stakeholders
5. Excavator Stakeholders
6. Public Official Stakeholders
7. Stakeholder Message Delivery Frequency
8. Effectiveness Evaluation and Program Changes
9. Annual Audit and Program Changes
10. Stakeholder Identification
11. PAP Inspection Form (PHMSA Form 21) and Inspection Process
12. PA Federal Regulation
13. Operator Written Plan
14. API RP 1162, 2nd Edition

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Attribute	SWOT Area	Comment
Strengths	1. Objective of Operator PAP	• Some operators go beyond compliance to reach out to stakeholders. • API RP 1162, 1st Ed. provides a solid framework for continuous improvement and stakeholder involvement, from which to build • Stakeholder input impacts the way operators interpret and implement public awareness programs.
Strengths	2. Objective of PA for Pipeline Safety	• National tools can be useful to communities and on a local level (like the National Pipeline Mapping System (NPMS), 811). • The ability to leverage stakeholders' existing platforms/communication channels for stakeholder audiences (e.g., fire service, LEPCs). • Many stakeholders are clearly identified. • Common/shared vision and goals. • Non-proprietary. • Consistent baseline messages. • Industry sees value in regulations. • In best interest of all stakeholders and safety. • Multiple communication methods and approaches available. • Have learned from experience and applied lessons learned for continuous improvement. • Sharing best practices.
Strengths	3. Public Stakeholders	• LDC customers are more likely to be aware of distribution pipeline systems • Multitude of media and methods. • Collaborative outreach for common messaging reduces excessive communication with the public. • National campaigns (e.g. promotion of 811). • New technology is improving the ability to identify audiences for public awareness messages.
Strengths	4. Emergency Response Stakeholders	• Interested and engaged (want to know). • Operator public awareness programs represent a concerted effort to engage key emergency response stakeholders.

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Attribute	SWOT Area	Comment
		• Operators are proactively building relationships through a variety of methods. • Findings from the Pipeline Emergency Response Working Group (PERWG) final report. • Audit program is working and getting operators to increase outreach. • There are a lot of resources available to emergency responders, such as NPMS, Emergency Response Guidebook, training curricula, etc. • Some states (e.g., Pennsylvania) have done a good job of getting messages out to all emergency responders. • Constant communication has improved consistency and raised trust among operators and emergency responders. • Existing operator programs provide a solid base from which to improve.
Strengths	5. Excavator Stakeholders	• Consolidated effort to promote 811. • 811 "Call Before You Dig" is a simple message. • There is a wide variety of resources to promote 811 (e.g., logos, videos, communications plans, etc.). • Public awareness programs address a wide range of excavation-related pipeline safety issues, for example risks from specific types of excavation, excavation trends in specific areas, dangers to the excavators, etc. • Promoting public awareness and damage prevention among excavators is ingrained in the culture of many operators. • Professional excavator awareness of 811 and the need for safe digging is improving.
Strengths	6. Public Official Stakeholders	• Most public officials are aware of distribution systems within their communities. • PIPA Recommended Practices provide information and clarity on safe land use and development near pipelines. • NPMS is a resource. • High interest on the part of local community organizations in receiving information.

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Attribute	SWOT Area	Comment
		• The PHMSA Technical Assistance Grant (TAG) program makes funding available to communities for pipeline safety initiatives.
Strengths	7. Message Delivery Frequency	• Generally, operators are following or exceeding the message frequency requirements.
Strengths	8. Effectiveness Evaluation & Program Changes	• Operators use multiple data sources to determine effectiveness. • Industry collaboration efforts, value in aggregate data, trending over time.
Strengths	9. Annual Audit & Program Changes	• Most operators inspected attempted to conduct their annual audits and program changes. • Operators have consistent guidance (e.g., API RP 1162) to help them plan and conduct annual audits of their public awareness programs and make changes as needed.
Strengths	10. Stakeholder Identification	• Current four stakeholder groups are broad enough to allow for appropriate flexibility
Strengths	11. PAP Inspection Form (Form 21) and Inspection Process	• Use of standardized inspection form provides for better preparation for and conductance of audits.
Strengths	12. PA Federal Regulation	• Regulations are driving improvements in public awareness. • Code allows for justification of alternative methods in public awareness planning, implementation, and/or messaging. • Regulation/code provides structure for a common understanding for plan development and implementation. • Allows for the incorporation of API recommended practices.
Strengths	13. Operator Written Plan	• Operators have generally demonstrated they want to implement effective programs and implement continuous improvement. • Strong industry associations that work together and are committed to improvement as an industry. • Operators generally have written programs structured according to RP 1162. • Operators are resourceful in leveraging various data sources to identify stakeholders. • Operators generally understand the idea of evaluating bottom-line results, because the requirements are clear.

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Attribute	SWOT Area	Comment
Strengths	14. API RP 1162, 2nd Ed.	• RP 1162 provides consistent guidance to help operators plan and conduct their public awareness programs. • Less prescriptive and adds more flexibility for operators. • Section 5.5, "Identify Stakeholder Audiences", is an improvement from RP 1162 1st Edition, particularly for smaller operators, because it provides a more detailed audience description. • Section 9.3.1, "Measuring Outreach", provides more flexibility for using mass media than RP 1162 1st Edition.
Weaknesses	1. Objective of Operator PAP	• Operators do not always ensure contractors are meeting requirements (can cross over to other areas). • Some operators are driven by compliance requirements and not communication resonance. • Lack of clarity on what “maintain liaison” means as stated in federal regulations (49 CFR Parts 192.615 and 195.402) and API RP 1162, 1st Ed. • Operators may not effectively leverage channels or other outreach methods to promote public awareness. • Field and technical operations personnel may not be able to support public awareness communications due to other job priorities. • Multiple operators within a corridor may not coordinate public awareness efforts. • Operators are concerned with how their collaborative efforts will support compliance to regulations because there is little guidance on how collaborative messages are to be structured and little assurance that operators will receive credit from regulators for collaborative messaging. • Lack of common definitions and requirements for data collection and data reporting. • Unclear on how to establish acceptable measures for outreach and awareness. • Inadequate communication of the risks and potential impacts from the type of commodities that could be released from the pipeline.

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Attribute	SWOT Area	Comment
Weaknesses	2. Objective of PA for Pipeline Safety	• Missing additional stakeholders (e.g., other governmental organizations involved in incident response, operators of other critical infrastructure). • Too many messages; similar messages. • Information overload. • Traditionally, assumptions have been made on how to best communicate with stakeholders. • Lack of consistency in measuring effectiveness. • Lack of a public face/icon of pipeline public awareness (e.g., national safety campaign). • Have not leveraged existing platforms/groups. • Lack of common understanding of behavior change and how to measure. • Limited resources.
Weaknesses	3. Public Stakeholders	• Difficult to capture the immediate attention of stakeholder to compel them to read the public awareness materials. • Content is not always pipeline specific. • Perception that operators must communicate too many message topics. • Gaps in outreach at the appropriate time in public awareness requirements for non-FERC new projects (not applicable to distribution systems).
Weaknesses	4. Emergency Response Stakeholders	• Lack of consolidation of common messages and individual resources. • Operators are not, in all cases, adequately identifying and proactively working and coordinating with all emergency response stakeholders within a community. • Emergency responders are not aware of differences in pipeline systems and potential impacts. • Not all operators and emergency responders have an adequate understanding of the National Incident Management System (NIMS). • Providing general messages for all emergency responders versus role specific-information. • No assurance that pipeline information is appropriately disseminated within the emergency response community.

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Attribute	SWOT Area	Comment
		• Sharing and understanding capabilities and gaps between operators and emergency responders.
Weaknesses	5. Excavator Stakeholders	• Limited resources may not be targeted to the excavators who need the most education. • The lack of adequate, specific data (e.g., impacts of exemptions) makes it difficult to know where to apply targeted outreach resources. • Lack of knowledge about one-call laws and requirements. • Excavators that do not perceive of themselves as excavators or subject to one-call requirements.
Weaknesses	6. Public Official Stakeholders	• Identifying public official stakeholders. • Public awareness message frequency. • Lack of customization of messages to specific public officials based on roles and responsibilities. • NPMS limitations.
Weaknesses	7. Message Delivery Frequency	• Public officials messaging frequency may be too long
Weaknesses	8. Effectiveness Evaluation & Program Changes	• Difficulty in selecting and measuring the effectiveness of the multitude of media and methods. • Identifying and justifying effectiveness criteria. • Difficulty in measuring behavior changes as a bottom-line metric. • Lack of clarity regarding entire effectiveness evaluation requirements, e.g., PHMSA expectations.
Weaknesses	9. Annual Audit & Program Changes	• For annual audits, some operators did not have a good process to consider the need for supplemental requirements or the implementation of supplemental requirements previously determined to be needed. • Inadequate documentation of annual audits and how they are conducted. • Use of regulatory inspections as a method of performing annual audits.
Weaknesses	10. Stakeholder Identification	• Some LDCs and regulators may interpret the requirement to identify LDC audiences differently, leading to confusion.
Weaknesses	11. PAP Inspection Form (Form 21) and Inspection Process	• Inspection questions in Section 4 of Form 21 need clarification (ties to Section 8 of RP 1162).

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Attribute	SWOT Area	Comment
		• (Possibly a requirement weakness as opposed to a form weakness.) Inspection form imposes requirements that are not spelled out in regulation or RP 1162. What was once considered guidance is now mandatory requirement, thus change bullet points on form from "guidance" to become check boxes. • Inspection form does not provide for 192.616(f) and 195.440(f). • Although form used in inspections was same, process of inspection varied among states relative to time and complexity. • (Requirements) Management support requirements lack clarity on whether signature, name, or titles/positions are required. Also, lack of clarity on what is required when management changes. • (Requirements) More clarity is needed behind unique attributes and characteristics requirements. • (Requirements) Difficult for distribution operators to know what information is to be conveyed relative to pipeline facility locations. • (Requirements) Regulatory requirement on outreach to municipalities, etc. is unclear of whether focus is on facility, pipeline, or the intended audiences. • (Requirements) Unclear definition for "maintain liaison" in regulations. • (Requirements) Clarify that annual implementation audit should be evaluated comprehensively with regard to scope and frequency, and conducted independently of regulatory inspection. • Lack of clarity for "bottom line results" and how near misses and damages are evaluated.
Weaknesses	12. PA Federal Regulation	• Some operators perceive that requirements stifle innovation. • Vague common understanding of "educate" and "advise" in the code. What does this mean? (192.616(d)) • What does "commonly understood by a significantly number and concentration of the non-English speaking population…" mean? (192.616(g)) • PA code is a hybrid of prescriptive and performance based requirements. Makes it more difficult for operators to understand what to do.

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Attribute	SWOT Area	Comment
		• Regulations/codes are enforced operator-by-operator for compliance. May lead to inconsistencies and/or duplication of messages. • Regulations do not encourage/or provide provisions for collaborative approaches and how individual operator performance measures can be met (take credit). • "Unique attributes and characteristics" (192.616 (b) not clearly or commonly defined, explained how to incorporate into messaging, or what/how much should be made available to public. • No language on how to address changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.). • Evaluation expectations unclear (what's required and timing).
Weaknesses	13. Operator Written Plan	• Unclear benefit of the management support statement (signature & date) when budgets and resources are allocated based on management approval. • Unclear understanding of expectations with regard to management support/and or statement, and how often should it be updated. • Unclear understanding of requirement for making pipeline operators' emergency response plans available to emergency response officials. • Unclear understanding of regulators' expectations for QA/QC processes (mailers/vendor checking). • Measuring behavioral change is challenging. • Reluctance of operators to try innovative implementation techniques if there will be no compliance benefit. • Evaluation process and procedures in written plan lacked objectives and goals to help evaluate effectiveness (justifying the goals may be subjective).
Weaknesses	14. API RP 1162, 2nd Ed.	• Ability of operators to meet the requirement to demonstrate that messages are sent and delivered. • API RP 1162 lacks clarity of guidance for performing public awareness program evaluations.

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Attribute	SWOT Area	Comment
		• RP 1162 section on program evaluation provides lax guidance in what to measure for behavioral change and how to measure. • Minimum requirement not clear. • Section 9.1, "Pre-Test Effectiveness of Materials", is extremely prescriptive; there are methods available other than the use of a focus group. • Less prescriptive guidance, compared to RP 1162 1st Ed., offers more flexibility for operators but could result in less effective programs. • Page 8 (second paragraph) "…a distance of 660 ft…" does not clarify the minimum requirement. • No provision for managing changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.). • Section 5.3 discusses roles and responsibilities but does not outline accountabilities (may be different).
Opportunities	1. Objective of Operator PAP	• Move from compliance-driven programs toward programs embracing more corporate social responsibility. • Leverage existing platforms/communication channels for stakeholder audiences. • Leverage and train operator field personnel to support PA activities. • Identify field personnel and get their buy in on supporting public awareness (i.e. develop an ambassador program). • Continue to share best practices among operators. • Evaluate if the application of management systems concepts could be beneficial to public awareness programs and, if so, where these would be appropriate (e.g., may not be applicable to small operators). For example, see API RP 1173 (Safety Management Systems) when it is published. • Leverage consolidated generic messaging (i.e. national messages in propane industry).

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Attribute	SWOT Area	Comment
		• Look at other public safety campaigns, where stakeholder penalties are not involved, to study how they are evaluated for effectiveness (i.e. emergency preparedness, wildfire preparedness, bullying, etc.). • Consider developing a campaign or common messaging to communicate and increase public awareness about pipeline safety, for example for leak recognition and response.
Opportunities	2. Objective of PA for Pipeline Safety	• Elevate environmental protection messaging in public awareness programs. • Reword damage prevention messages to place more emphasis on benefits of calling 811. • Target environmental audiences. • Understand what's important to audiences. • Maximize opportunities of receptive audiences after pipeline incidents. • Create a plan to sustain involvement of audiences after pipeline incidents. • Give stakeholders information/data to help their planning (operators). • Share best practices and lessons learned. • Leverage existing stakeholder platforms. • Review Canada's National Energy Board (NEB) regulations to determine if they contain additional opportunities to improve public awareness for pipeline safety. • Encourage existing stakeholder groups to champion aspects of pipeline safety awareness that are most important to their members. • Focus on reaching the gray zone (unaware, un-opinionated groups). • Use compelling messaging that focuses on generating interest and gaining stakeholder attention regarding pipeline awareness and safety rather than touting the benefits of pipelines. • Establish a common objective among public awareness programs -- encourage pipeline safety. • Encourage operator collaborative efforts towards promoting consistent and cohesive messages to community stakeholders, in order to overcome

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Attribute	SWOT Area	Comment
		compartmentalization (i.e., disconnect between large and small operators, and between transmission, gathering and distribution operators). • Utilize targeted stakeholder interactions (e.g., focus groups) to stimulate program feedback and establish two-way dialogues with stakeholders. • Balance messages of "risk" versus "pipelines are safe".
Opportunities	3. Public Stakeholders	• Growing pipeline infrastructure drives the need for continuous improvement in public awareness programs. • Strike a balance between information saturation and desensitization. • Balance communication of risk versus benefits of pipelines. • Provide more system-specific information. • Strike a balance between informed and saturated. • Use multimedia and technology (future advancements). • Leverage communications principles to develop effective public awareness programs (e.g., messaging consistency, research, repetition). • Leverage past incidents to show where public awareness paid off in incident response or incident management.
Opportunities	4. Emergency Response Stakeholders	• Leverage and engage state training programs. • Post incident response lessons learned online for other first responders to review. • Identify if pooling resources among operators can create efficiencies and cost savings for operators and emergency responders. • Finalize and promote inclusion of pipelines in Federal Emergency Management Agency (FEMA) all-hazards mitigation. • Add pipeline scenarios into FEMA Emergency Management Institute (EMI) course on National Infrastructure Protection Plan (Class IS-860-B). • Develop tools like a consistent pipeline incident checklist for emergency responders. • Simplify communication through the hierarchy of emergency response command in jurisdictions with pipelines.

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Attribute	SWOT Area	Comment
		• Provide role specific-information for emergency responders (e.g., fire services versus 9-1-1 versus law enforcement, as well as for different levels of technical expertise within these audience groups). • Leverage pipeline operators who are also volunteer firefighters. • Identify if 811 call centers can be leveraged for emergency response (e.g., identifying affected operators and other potentially affected utilities). • Expand mutual aid agreements among rural and municipal communities. • Explore state emergency responder organizations taking a leadership role in the delivery of pipeline awareness and emergency response training and certification.
Opportunities	5. Excavator Stakeholders	• Reword damage prevention messages to place more emphasis on benefits of calling 811. • Reexamine the totality of outreach efforts. • Look at opportunities for a nationwide campaign for public awareness. • Target excavator messages for specific excavator groups, such as landscapers, fencing companies, homeowners, etc. • Adopt a more data-driven, strategic approach to excavator outreach. • Consolidate public awareness surveys, as appropriate. • Improve gathering and development of adequate, specific data regarding exemptions, near misses, damages, etc. • Make it clear to excavators that damage prevention is about their safety and their bottom line.
Opportunities	6. Public Official Stakeholders	• Local public officials can be champions of pipeline safety when adequately engaged. • Provide information related to land use and development near pipelines; reference the PIPA Recommended Practices. • Provide information in a way that can be shared. • Provide information on new pipelines near existing developments. • Promote PIPA Recommended Practices. • Share pipeline centerline data for planning purposes.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
		• Better define local official audience relative to public awareness outreach. • Every local official has a constituency that could be considered a captive audience. • Consider consolidated, common messages. • Leverage interest created by visibility of pipeline incidents; local officials affected by incidents could become proponents of expanded public awareness. • Leverage high-interest community organizations. • Promote PHMSA Technical Assistance Grants (TAG).
Opportunities	7. Message Delivery Frequency	• Expedite notifications for newly built and acquired pipelines. • Clarify the message delivery frequency for idle lines.
Opportunities	8. Effectiveness Evaluation & Program Changes	• Develop a 'toolbox' to promote effective program evaluation tools for use by operators. • Consider the use of cooperative stakeholder surveys with other operators where appropriate. • Do root cause analyses of unsatisfactory effectiveness evaluations. • Do more in-depth, segregated surveys of significant, specific subgroups where they exist within a stakeholder audience. • Consider situations in which oversampling or under sampling should be used to represent the affected general population. • Establish common industry definitions for bottom-line results like near misses and encroachment. • Identify realistic components that can be measured and changed relative to bottom line results. • Explore inspection practices that allow collaboration among operators in outreach efforts in common ROW and/or geographic areas. • Provide more guidance on how to determine sample sizes, response rates, etc. and/or resources on where to obtain info. • Consider ways to gather data and gauge effectiveness of public awareness programs nationwide.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
		• Identify ways to improve program effectiveness evaluation methods and metrics. • Clarify that effectiveness evaluations should be performed on a frequency of no less than every four years. • Specify that operators could include performance metrics in the written plan on how to evaluate their effectiveness.
Opportunities	9. Annual Audit & Program Changes	• Better documentation of program changes as a result of the annual audit. • Develop a consistent methodology and process for conducting the annual audit.
Opportunities	10. Stakeholder Identification	• Better tailor identification of subgroups within larger stakeholder groups (e.g. 9-1-1 dispatchers, farmers, schools, land planners, etc.). • Identify and reach stakeholders that may be impacted but are difficult to reach, such as transients. • Better targeting of messages to stakeholder subgroups, such as law enforcement, EMS, 911, farmers, etc. • Distributing information through trusted channels (e.g., farm bureau, NACo, trade publications, etc.).
Opportunities	11. PAP Inspection Form (Form 21) and Inspection Process	• Align inspection protocols with improvements in public awareness programs and outreach efforts. For example the use of public service announcements, mass media, social media, and stakeholder representatives. • Better align questions with subject matter, e.g., move Question 1.06 to Section 4.0. • Better align effectiveness measure with appropriate outreach methods. • Eliminate ambiguity of whether supplemental activity is needed and evaluating whether supplemental should be considered. • Encourage more joint/team inspections and/or inspector training.
Opportunities	12. PA Federal Regulation	• Determine balance between prescribed and performance-based requirements. • Clarify or improve what “educate” means in the code and how to measure “educate”.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
		• Clarify in the code (192.616(g)) that operators should assess and/or consider other languages commonly understood and define a significant number. • Address managing changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.). • To improve understanding and meaning, leverage other opportunities to disseminate results of Working Groups and educate stakeholders of changes/future plans. • Clarify evaluation expectations (what's required and timing).
Opportunities	13. Operator Written Plan	• Encourage message mapping as a best practice to ensure all baseline messages are in outreach materials. • Management accountability (senior management review and sign-off on results). • Clarify what should be included in the management support statement and how often should it be updated (i.e. position title, not specific name). • Provide clarity on appropriate and useful information (when and how) for ER officials (not necessarily an operator's full ER plan). • Provide more guidance on what should be included an operator's QA/QC process (mailers/vendor checking). • Standardized method to capture hits, near misses, and encroachment (part of bottom-line results measurement). • Clarify evaluation expectations (what's required and timing)
Opportunities	14. API RP 1162, 2nd Ed.	• Determine if behavior change should be a goal of public awareness programs and, if so, identify and describe examples of how to measure it, for all stakeholder audiences. • Include messages for stakeholders to "spread the word" about pipeline public awareness among their families, friends, neighbors, and peers. • Review RP 1162 for consistency in usage of "annual audit" versus "annual implementation evaluation" terminology. • Construction of new pipelines (gathering systems, shale systems) is not always supported by adequate public awareness outreach.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
		• Clarify annual audit and effectiveness evaluation frequencies for applicability to regulated gas gathering lines. • Reduce number of key messages in baseline communication. • Clarify minimum requirements with API recommended practices and/or rulemaking (shall, should, may…). • Identify improvements to baseline and enhancement message content (e.g., enhance ER information as required by emergency responders). • Strike a balance between prescriptive and performance based. • Include "recognition and response" in Section 5.1.3 (already included in the baseline message). • Evaluate if the application of management systems concepts could be beneficial to public awareness programs and, if so, where these would be appropriate (e.g., may not be applicable to small operators). • Better communications on benefits of calling or implications of not calling 811 (operator plans and messaging). • Reword damage prevention messages to place more emphasis on benefits of calling 811. • Revisit "Farmers" in affected public or excavator stakeholder audience group. • Address managing changes to "active" pipeline assets (new pipelines, transfers/acquisitions, idle/divestiture, conversion of service (gas to liquid or liquid to gas, changes to emergency #s, etc.). • Provide examples of behavioral changes (positive and negative). • Revisit and clarify record documentation vs record retention requirements (last 5 years or documentation to support effectiveness and implementation). May consider extending evaluation period to 5 years (instead of "no more than 4 years). • Management accountability (senior management review and sign-off on results). • Revise guidance to include consideration of program enhancements during program planning and, separately, following program audits and evaluations.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
Threats	1. Objective of Operator PAP	• Operators are required to take action but stakeholders are not required to listen. • Compliance-driven programs may stifle innovation. • Language translation of public awareness messages may be completed by translators unfamiliar with the industry.
Threats	2. Objective of PA for Pipeline Safety	• Credibility of the messenger may impact the receptiveness to public awareness messages. • Lack of interest in communicated public awareness or pipeline safety messages by affected stakeholders. • Compliance-driven programs may stifle innovation. • Differing roles and a lack of role understanding between federal agencies in pipeline safety can confuse stakeholders. • Limited resources. • The success of public awareness programs may be impacted by human nature - resistant to change. • Stakeholders are likely to be unreceptive to pipeline awareness and safety messages unless it is shown to impact them directly. • Difficulty getting stakeholder attention.
Threats	3. Public Stakeholders	• Public may not embrace as its responsibility to report unsafe pipeline conditions or threats to pipeline operators. • Public sees pipeline safety as out of their control. • Public experiences information overload, at times. • Perception that increased public awareness budgets are proportional to improved programs. • Variable public perception of pipelines and operators in general. • Target populations are growing due to production areas.
Threats	4. Emergency Response Stakeholders	• Emergency response stakeholders have information that would support more effective public awareness programs for emergency responders, that is not being shared or updated with operators.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
		• Volunteer firefighters have different needs than career firefighters and they may lack preparation and training to respond to pipeline emergencies. • Firefighters may not know the right questions to ask. • Emergency responders have many responsibilities; pipelines may not be their highest priority. • No uniform national training requirements for fire fighters for pipeline incident response. Requirements are established at the state level. • Information overload. • Emergency response organizations lack time and other resources to prepare for pipeline emergencies. • Emergency responders 'fear' of who to answer to among multiple government agencies • No requirements for emergency responders to meet with operators. • Lack of knowledge of the hierarchy of command responsibilities and jurisdictions associated with pipelines. • Difficulty of identifying specific pipeline and who owns it during an emergency in a multi-line ROW.
Threats	5. Excavator Stakeholders	• Excavators travel between regions/states where the requirements of damage prevention laws vary. • Lack of damage prevention program enforcement in some states. • Non-justified exemptions and weak one-call laws. • To an excavator, time is money. • Inaccurate and/or untimely locates creates a lack of trust.
Threats	6. Public Official Stakeholders	• Turnover in public officials and staffs • Variability in the structure of local public governmental organizations and the roles and responsibilities of local public officials. • Many local officials are not adequately engaged unless it is a 'hot' topic (competing priorities). • Lack of interest in and awareness of pipelines.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
		• Local officials have interests that compete with zoning around pipelines, e.g., financial growth of communities. • Implementation of PIPA practices is complex and can create disincentives. • Political pressure may impact the level of information that is shared by public officials.
Threats	7. Message Delivery Frequency	• Potential conflict or confusion on contact information resulting from acquisitions
Threats	8. Effectiveness Evaluation & Program Changes	• Flexibility in evaluation approaches can lead to concerns due to a lack of rigor. • Too much prescription in evaluation approaches can lead to concerns due to a lack of needed flexibility by the operator. • Weakness in general awareness of pipelines in different geographic areas (e.g., rural and urban areas). • It is challenging to measure changes in behavior credited to specific influences, i.e., PAP versus other impacts. • Effectiveness evaluation results are only as good as the questions asked.
Threats	9. Annual Audit & Program Changes	None noted from SWOT analyses
Threats	10. Stakeholder Identification	• Expectation of "accuracy" with regard to identifying stakeholders. • Observations from PAP inspections by regulators may not apply to all pipeline types and must be carefully considered when trying to apply across the board. • Changes in population lead to difficulties in reaching all stakeholders within that population. • Information is not always read by the appropriate persons. • Transient people (campers, hunters, etc.).
Threats	11. PAP Inspection Form (Form 21) and Inspection Process	• Inspection form questions migrate into de facto requirements. • Inspection form and process could hamper public awareness program effectiveness and innovation. • Use of different forms by states.

Appendix C:
PAPWG SWOT Analyses
Organized by SWOT Attribute Area, Then By Topical Review Area

Attribute	SWOT Area	Comment
Threats	12. PA Federal Regulation	• Federal public awareness program regulations currently do not apply to all gathering lines. • Even if the audience is "educated" it still may not translate to a stakeholder taking an appropriate action (indirectly impacting an operator's bottom line results). • Lack of thorough understanding of the code (subjective/interpretation) and what it really means (operators, regulators). • Regulatory/rulemaking lengthy process to changing PA requirements.
Threats	13. Operator Written Plan	• Over reliance on third party vendors may create false compliance security. • Using API RP 1162 tables (delivery methods/frequency/message) in a prescriptive manner rather than tailoring implementation to their specific program. • Number of messages required to communicate in a single document/media (information overload/confusion). • Measuring program outreach makes it difficult to use mass media because it's difficult to prove who was reached (performance vs. flexibility).
Threats	14. API RP 1162, 2nd Ed.	• Unclear on the rationale for "how to get additional information" moved to enhanced messages from baseline messages for all stakeholder audiences (risk). • Public Official baseline delivery frequency is an ongoing threat. Could miss elected officials. • Annex A: Baseline and Enhanced Program Summary Tables may give the impression messages, frequencies, and methods are optional and not enforceable.

Appendix D:
PAPWG SWOT Analyses
Stakeholder Viewpoints Outside of SWOT Analyses

Appendix D: Federal Regulations and API RP 1162

Below is information on the Federal pipeline safety regulations pertaining to pipeline operator public awareness programs. Also discussed below is information regarding API RP 1162, 1st Edition, which is incorporated by reference in the Federal pipeline safety regulations. These two information/data sources are particularly relevant to pipeline operator public awareness programs, as pipeline operators are required to comply with the requirements specified therein.

Federal Pipeline Safety Public Awareness Regulations

Pipeline safety public education and communication requirements for pipeline operators are found in Title 49 of the Code of Federal Regulations (CFR). Gas pipeline regulations are found in 49 CFR § 192.616, "Public Awareness"; regulations for hazardous liquid pipelines are found in 49 § CFR 195.440.

Regulatory Provisions

With some exceptions, each pipeline operator must develop and implement a written continuing public awareness plan that follows the guidance provided in the American Petroleum Institute's (API) Recommended Practice (RP) 1162, 1st Edition, which is incorporated by reference into the regulations (see § 192.7 and § 195.3). Operators' programs must follow the general program recommendations, of API RP 1162, including baseline and supplemental requirements, unless the operator provides justification in its program or procedural manual as to why compliance with all or certain provisions of the RP is not practicable and not necessary for safety.

Each operator must assess the unique attributes and characteristics of its pipelines and facilities to determine the approach, methodologies, and materials to use in its public awareness program. The operator may cover all of its facilities under one program, or it may establish and carry out individual, asset-specific programs for one or more specific pipeline systems, one or more pipeline segments, one or more facilities, or one or more geographic areas. The program and the media used must be as comprehensive as necessary to reach all areas in which the operator transports gas, hazardous liquid or carbon dioxide.

Each operator's program must be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area.

Under the regulations, operator public awareness programs must specifically include provisions to educate the public, appropriate government organizations, and persons engaged in excavation-related activities on:

- Use of a one-call notification system prior to excavation and other damage prevention activities;
- Possible hazards associated with an unintended release from pipeline facilities;
- Physical indications that such a release may have occurred;

- Steps that should be taken for public safety in the event of an unintended release; and
- Procedures to report such an event.

The programs must also include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations.

Related Regulations

Under 49 CFR § 192.7 and § 195.3, any documents or portions thereof incorporated by reference in either § 192 or § 195 are included as though set out in full. When only a portion of a document is referenced, the remainder is not incorporated. This addresses the incorporation by reference of API RP 1162 (1st Edition) into § 192.616 and § 195.440.

API Recommended Practice 1162 (1st Ed.)

Currently, under the regulations in § 192.616 and § 195.440, pipeline operator public awareness programs must follow the guidance provided in API RP 1162, "Public Awareness Programs for Pipeline Operators," (1st Edition, December 2003)[1].

RP 1162 Development

API RP 1162 (1st Edition) was developed for pipeline operators to use in development and management of public awareness programs. The goal of the RP is to establish guidelines for operators on the development, implementation, and evaluation of their public awareness programs in an effort to raise the effectiveness of those programs throughout the pipeline industry.

RP 1162 was developed by a working group established in early 2002. Representatives from natural gas and hazardous liquid transmission pipeline companies, local natural gas distribution companies, gathering systems operators, and industry trade associations constituted the working group. Federal and State regulators, as well as representatives of the public and other interested parties, participated in the working group and/or provided input at each stage of the development. Feedback from interested stakeholders was solicited through a wide variety of sources and surveys.

RP 1162 Content

API RP 1162 (1st Edition) further defines specific information that pipeline operators, under the jurisdiction of Federal pipeline safety regulations, must communicate to affected stakeholder audiences. This includes, for example, information regarding:

- How community decisions about land use and land use practices may affect community safety along pipeline rights-of-way (ROW);
- How individuals can prevent undesirable encroachments upon a pipeline ROW; and

[1] API issued RP 1162, 2nd Ed. in December 2010. However, it has not been incorporated by reference (IBR) into Federal pipeline safety regulations. Initial Federal and State public awareness program effectiveness inspections for pipeline operators were not complete at the time RP 1162 2nd Ed. was issued. PHMSA has not reviewed the 2nd Ed. to determine if it should be IBR.

- How to contact the pipeline operator with questions or comments about public safety, land use practices, integrity management plans, emergency preparedness or other matters.

Additionally, under API RP 1162 (1st Edition) each operator's public awareness program must establish:

- Methods to identify and contact affected members of the stakeholder audiences;
- Methods to determine the message types and message content for each audience; and
- The media and methods of communication to be used and the frequency of delivery for each audience and message type.

All of this information must be documented, along with the basis for each decision made by the operator regarding its program.

Each operator must establish a process for the management of feedback related to its public awareness program. This would include the management of program evaluation data submitted in response to the operator's program evaluation efforts.

RP 1162 - Program Evaluation

Consistent with the guidance provided in API RP 1162 (1st Edition), under the Federal regulations each operator's public awareness program must include a written program evaluation process, the results of which are to be used as the basis for continuous program improvements. The evaluation process must establish the objectives, methodology, and criteria for program improvement. It must evaluate the operator's implementation of the program, as well as the effectiveness of the program in increasing public awareness. Data sources used in the evaluation process must be identified and documented. Outside surveys used in the program evaluation must be assessed for applicability to the operator's program. Finally, results of the operator's program evaluation and continuous improvement process must be documented.

Availability of Program Documentation for Inspection

Upon request, operators must submit their completed programs to PHMSA or the appropriate State agency. Each operator's program documentation and evaluation results must be available for periodic review by appropriate regulatory agencies.

Appendix E:
PAPWG SWOT Analyses
Data and Information Sources

Appendix E: Data and Information Sources

PAPWG members contributed information and data from public awareness program inspection summaries, feedback and comments from public awareness workshops, industry standards, federal public awareness and related regulations, stakeholder and guest presentations, and other relevant stakeholder sources. SWOT analysis discussions and reviews included data and information from the several specific data and information sources identified below.

- Federal Pipeline Safety Regulations
  - 49 CFR § 192.616 – Public Awareness (Gas Pipelines)
  - 49 CFR § 195.440 – Public Awareness (Hazardous Liquid Pipelines)
  - 49 CFR § 192.7 – Documents Incorporated by Reference (Gas Pipelines)
  - 49 CFR § 195.3 – Documents Incorporated by Reference (Hazardous Liquid Pipelines)
  - Final Rule for Pipeline Safety Public Awareness Regulations 49 CFR § 192.616 and 49 CFR § 195.440 (Includes Preamble) (Amended June 16, 2005)
  - Presentation – Comments to Rulemaking: Pipeline Operator Public Awareness Programs: 49 CFR § 192.616, 49 CFR § 195.440. Herb Wilhite, Cycla Corporation, 2/4/2015.
- PHMSA Public Awareness Program Inspection Form (PHMSA Form 21) and Inspection Process
- PHMSA Public Awareness Enforcement Guidance
- API RP 1162, 1st Edition (Online, Read Only Version)
- API RP 1162, 2nd Edition, (Search for "RP 1162") – Issued in December 2010, RP 1162 Second Edition has not been adopted into Federal pipeline safety regulations at this time.
- Presentations, Materials, and Proceedings – Pipeline Safety Public Awareness Workshop, Dallas, Texas, June 19-20, 2013.
- Presentation – PAPWG Inaugural Meeting. Christie Murray, PHMSA, 9/25/2013.
- Presentation – APGA GOAL Program. John Erickson, APGA, 6/10/2014.
- Presentation – Everything You Wanted To Know About the PAPERS Study. David Beinhacker, CCMC, 6/26/2014.
- Presentation – Measuring Public Awareness Program Effectiveness. Gina Greenslate, Energy Transfer, 6/26/2014.
- Presentation – Ways Operators Conducted Effectiveness Evaluations, What Worked Well, What Areas They Struggled With. Jim Antonevich, Metrix Matrix Inc., 6/26/2014.
- Presentation – Public Awareness Program Inspection Status. Harold Winnie, PHMSA, 2/4/2014.
- Presentation – Observations of Pipeline Operator Public Awareness Programs. Harold Winnie, PHMSA, 10/23/2014.

Appendix E:
PAPWG SWOT Analyses
Data and Information Sources

- Presentation – API Recommended Practice 1162. Mike McLaughlin, Enterprise Products, 2/4/2015.
- Summary of Lessons Learned from the Pipeline Emergency Response Working Group (PERWG).
- National Pipeline Mapping System
- Emergency Response Guidebook
- Pipeline Emergencies