



Know what's below.
Call before you dig.

Public Awareness

Alabama Pipeline Safety Seminar

December 01, 2015

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PHMSA, Southern Region**



Overview

- ✓ **Pipeline Safety Challenges**
- ✓ **Public Awareness Laws/Regulations**
- ✓ **Public Awareness Programs (PAP)/API 1162**
- ✓ **PAP Compliance**
- ✓ **Common Inspection Issues**



SAN BRUNO, CALIFORNIA

Population 41,114, 11 miles south of San Francisco

September 9, 2010, 6:11 pm (PDT) – 30” gas line ruptured



- **Crater 72 feet long, 26 feet wide**
- **28 ft. section, 3,000 lbs., 100 feet**
- **47.6 million ft.³ of gas released**
- **38 homes destroyed, 70 damaged**
- **8 fatalities and 58 injuries**
- **San Bruno FD arrive 6:13 pm**
- **900 emergency responders**
- **DOJ filed criminal charges PG&E**





U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

To Protect People and the Environment From the Risks of
Hazardous Materials Transportation





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Ruptured section of pipe

Earl Avenue

Crater with exposed gas pipe

Glenview Drive looking south



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Pipeline and Hazardous Materials
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To Protect People and the Environment From the Risks of
Hazardous Materials Transportation



San Bruno – What Pipeline?

**High pressure gas
transmission pipeline
in my jurisdiction???**



Why Public Awareness

It's the Law!



- **Pipeline Safety Improvement Act of 2002 (PSIA)**
- **Pipeline Inspection Protection Act of 2006 Enforcement (PIPES)**
- **Pipeline Safety Regulatory Certainty and Job Creation Act 2011 (PSRCJC)**



Purpose of Public Awareness

Provide safe, reliable service to customers and ensure the safety of people living and/or working near pipelines. *Every employee must be committed to fulfilling public awareness responsibilities*



What are the Benefits of Public Awareness?

- ✓ **Decreased excavation damage**
- ✓ **Enhanced public safety**
- ✓ **Preservation of the environment**
- ✓ **Improved pipeline system performance**
- ✓ **Improved relationships with affected public**
- ✓ **Less resistance to pipeline activities**



Pipeline Safety Improvement Act of 2002 (PSIA)

Pipeline facility operator ***shall*** carry out a continuing program to ***educate*** the public:

- Use of a one-call notification system prior to excavation;
- Other damage prevention activities;
- Possible hazards associated with unintended releases;
- Physical indications that such a release may have occurred;
- The steps that should be taken for public safety in the event of a pipeline release;
- How to report such an event.



Pipeline Safety Improvement Act of 2002 (PSIA)

- Pipeline operators ***shall*** review existing public education programs for effectiveness and modify as necessary, ***no later than 12 months***

- Submit completed program to PHMSA (interstate) or State (intrastate)



Pipeline Inspection Protection and Safety Act of 2006 (PIPES)

- Authorizes \$1 million for public awareness and education grants to promote **811** national excavation damage prevention phone number
- From October 1, 2006 to September 30, 2010.
- Enforcement of 3rd party excavators



Pipeline Safety Regulatory Certainty and Job Creation Act of 2011 (PSRCJC)

- PHMSA **shall** maintain map of high-consequence areas, in which pipelines are required to meet IMP regulations and update biennially
- PHMSA **shall** develop and implement program promoting greater awareness of the National Piping Mapping System to State and local ER's and other interested parties
- With 18 months, PHMSA **shall** issue guidance to pipeline operators on providing system specific information to ER's where facilities located
- PHMSA **shall** consult with operators to determine extent this information is already being provided ER's



Public Awareness Applicability

- **Interstate and intrastate natural gas and hazardous liquid transmission pipelines**
- **Natural gas distribution companies**
- **Gathering pipeline operators**
- **Master meters and petroleum gas (no written continuing public education program)**



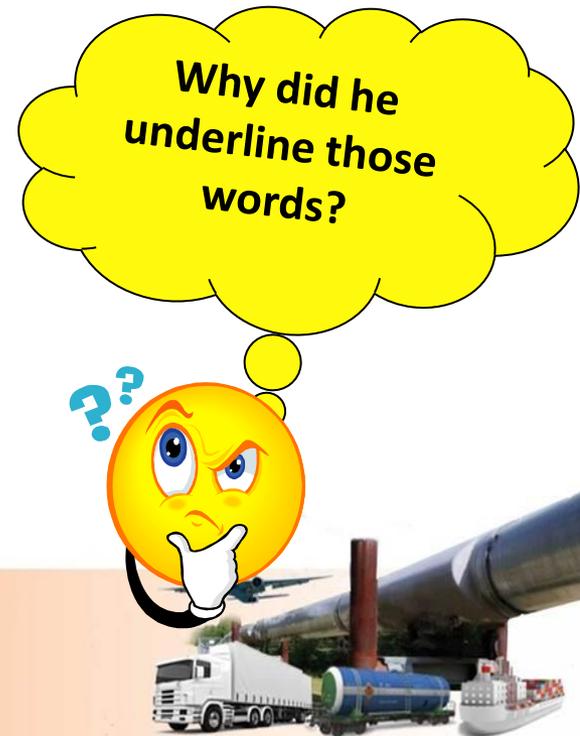
§192.616 Public Awareness

- **Final Rule Published May 19, 2005**
- **Effective date of Final Rule June 20, 2005**
- **Requires operators to follow the guidance of API RP 1162, “Public Awareness Programs”, First Edition, December 2003**
 - **Defines baseline and supplemental (enhanced) programs**
- **Modified in 2007 for operators of master meter systems and certain petroleum gas systems**



§192.616 Public Awareness Requirements

- a) **Written continuing public education program that follows the guidance provided in the API RP-1162.**
- b) **Must follow general program recommendations of API RP 1162 and assess the unique attributes and characteristics of operator's pipeline and facilities.**
- c) **Must follow general program recommendations, including baseline and supplemental requirements of API RP 1162, unless operator provides written justification why compliance with all or certain provisions of the recommended practice is not practicable and not necessary for safety.**



§192.616 Public Awareness Requirements

d) Program must specifically include provisions to educate the public, appropriate government organizations, and persons engaged in excavation related activities on:

- (1) Use of a one-call notification system prior to excavation and other damage prevention activities;
- (2) Possible hazards associated with unintended releases from a gas pipeline facility;
- (3) Physical indications that such a release may have occurred;
- (4) Steps that should be taken for public safety in the event of a gas pipeline release; and
- (5) Procedures for reporting such an event.



§192.616 Public Awareness Requirements

- e) Program must include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations.
- f) Program and the media used must be as comprehensive as necessary to reach all areas in which the operator transports gas.
- g) 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.
- h) Operators in existence on June 20, 2005, must have completed their written programs no later than June 20, 2006.
- i) Program documentation and evaluation results must be available for periodic review by appropriate regulatory agencies.



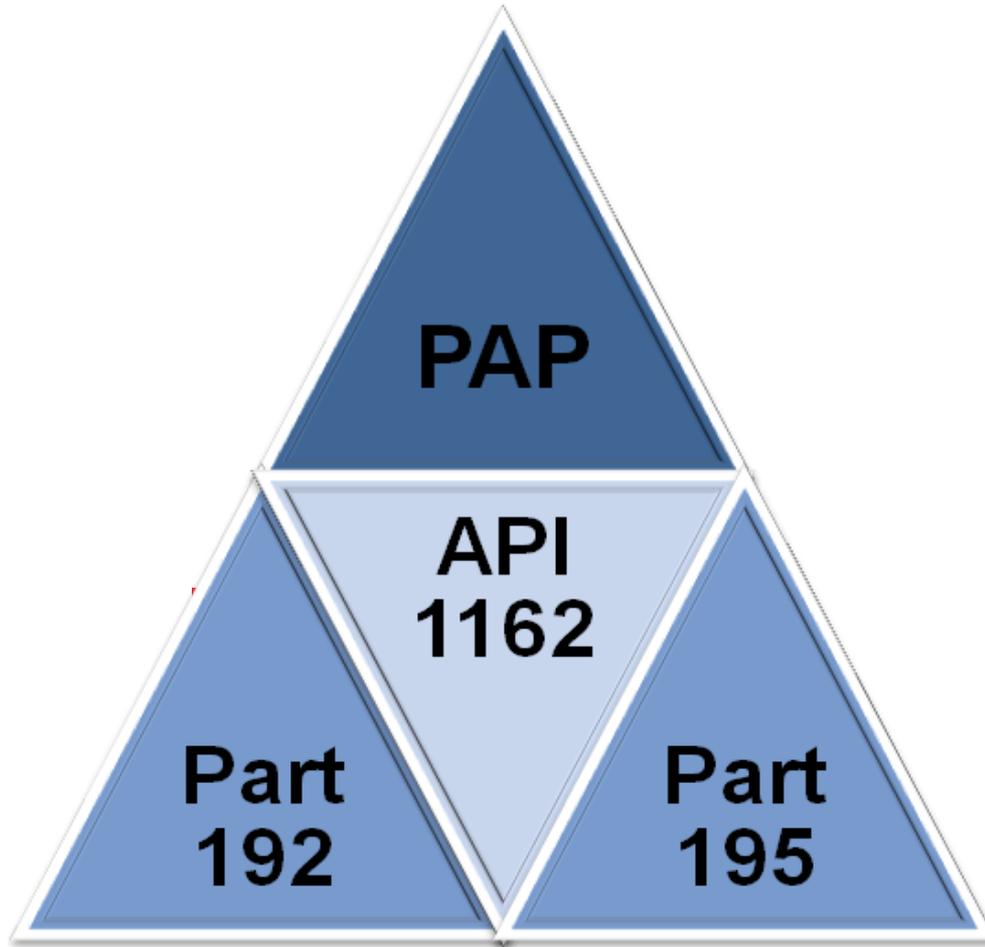
Education and Awareness

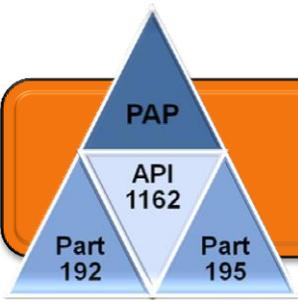
- The word educate implies a one-way action.
- The word awareness implies a two-way action.
 - The recipient not only received the information but perceives, has knowledge of, understands, or is otherwise cognizant of the information being presented.
 - The information is provided, the recipient gives feedback.
- PHMSA considers educate and awareness synonymous
- The current rules now require a pipeline operator to
 1. provide information to stakeholder audiences, and
 2. to measure if and how well the stakeholder audiences grasped the information.

To be compliant with the Federal pipeline safety regulations, an operator must periodically measure its Public Awareness Program's effectiveness and must continuously improve the program based on the results of this evaluation. **- This requires feedback!**



Public Awareness Programs (PAP)





Public Awareness Program (PAP): *Rules of Grammatical Construction*

"May" - means an action is permitted or authorized but not required.

Because "may" provides an option, an operator need not take an action that includes the word "may" and is not required to provide a justification for not taking an action

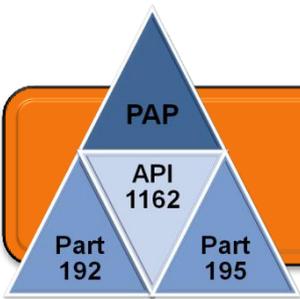
"Must" - means an action is mandatory.

Because "must" does not provide an option, an operator is required to take an action that includes the word "must."

"Shall" - has the same meaning as "must" but is not used in the Public Awareness regulations in §192.616, §195.440, or in API RP 1162.

Shall has been gradually replaced by must primarily because of a June 1, 1998, presidential memorandum requiring the use of Plain Language in Federal regulations.





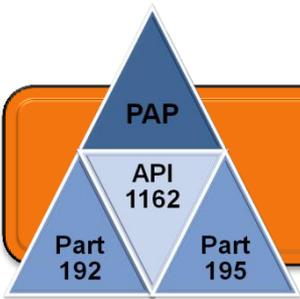
Public Awareness Program (PAP): *Rules of Grammatical Construction*

"Should" - means an action is required unless an operator provides justification."

Therefore, an operator is required to provide a justification for not taking an action that includes the word "should." To be valid the justification must

- ✓ be written,
- ✓ be based on a sound engineering and/or safety analysis,
- ✓ adequately explain why compliance with the action is not practicable for the specific pipeline system,
- ✓ adequately explain why compliance with the action is not necessary for safety on that specific pipeline system, and
- ✓ provide a level of safety equal to, or greater than, that which would be provided had the operator followed the action.





Public Awareness Program (PAP): *Multi-System PAPs*

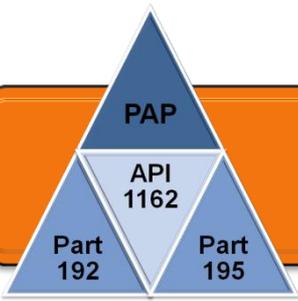
Multi-system Public Awareness Program - covers more than one pipeline system .

IMPORTANT:

Generic messages do not meet the intent of the PAP regulations because they do not necessarily provide "awareness."

Therefore, PHMSA will not accept generic types of messages. Message content must be pipeline system and product specific.





Public Awareness Program (PAP): *Processes (continuous action, operation)*

Must be based on: ***Sound*** and ***Repeatable*** Principles

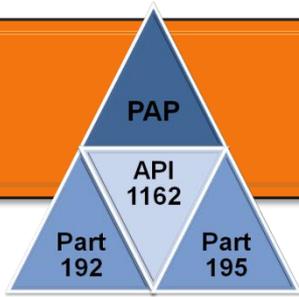
"Sound" - means *firm and reliable. An operator must have some logical, scientific, and/or other data driven reason for using the process.*

"Repeatable" - means *the operator can duplicate the process over again and, generally speaking, obtain the same results.*

Public awareness regulations require an operator to make Continuous Improvements. A process cannot be improved if it cannot be repeated.

In essence, there is no starting point for improvements without repeatability.





Public Awareness Program (PAP): *Introduction and Scope*

Purpose:

Assist pipeline operators in their public awareness efforts

Goal:

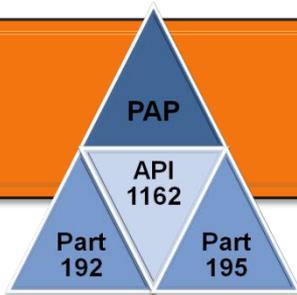
Raise the quality of pipeline operator's Public Awareness Programs, establish consistency of programs throughout industry, and provide mechanisms for continuous improvement

Applicability:

- ✓ Intra- and interstate hazardous liquid pipelines;
- ✓ Intra- and interstate natural gas transmission pipelines;
- ✓ Local distribution pipelines; and
- ✓ Gathering pipelines



Public Awareness Program (PAP): *Program Development*

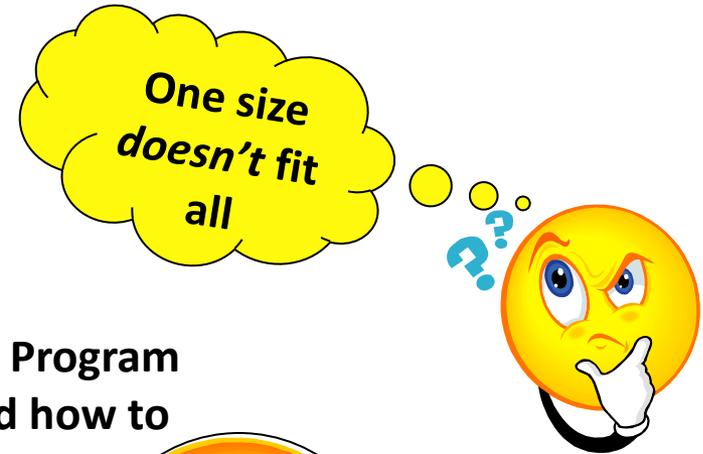
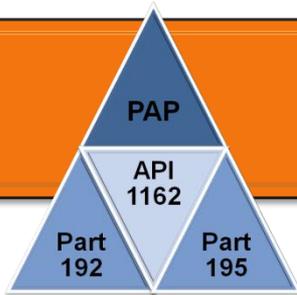


Objectives:

- 1) **Educate customers/non-customers who live/work near pipelines to recognize and respond to releases (i.e. gas odors)**
- 2) **Raise awareness of affected public and key stakeholders of presence of buried pipelines**
- 3) **Prevent third party damages thru awareness of pipeline locations and 811 number and learn how to respond**
- 4) **Help emergency response agencies understand proper actions to take in response to a release or an emergency**



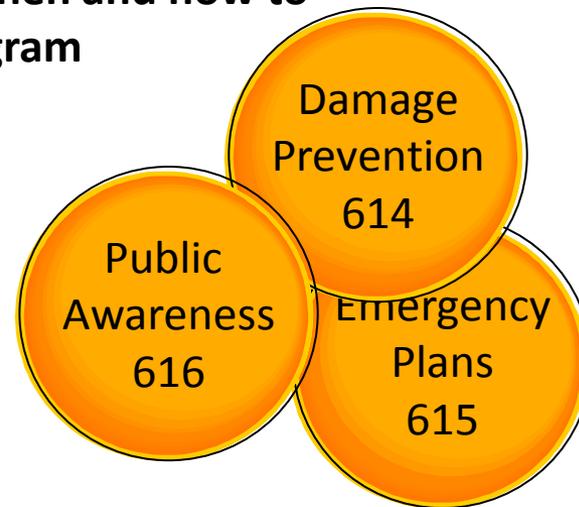
Public Awareness Program (PAP): *Program Development*



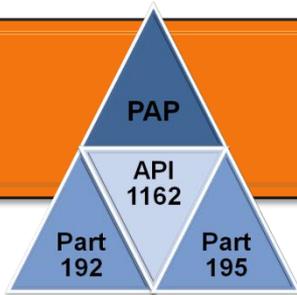
Program Development:

- ✓ Provides recommended elements of a **Baseline** Program
- ✓ Provides considerations to determine when and how to enhance (**Supplement**) the baseline program

3 principal regulatory
compliance elements



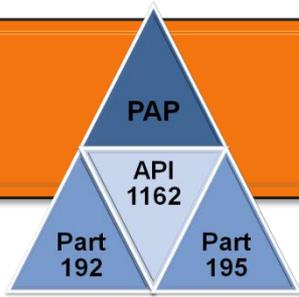
Public Awareness Program (PAP): *Stakeholder Audiences*



Target Audience:

- ✓ Affected public (residents and places of congregation along ROW);
- ✓ Local and State ER and planning agencies;
- ✓ Local public officials
- ✓ Excavators/contractors
- ✓ One-Call centers

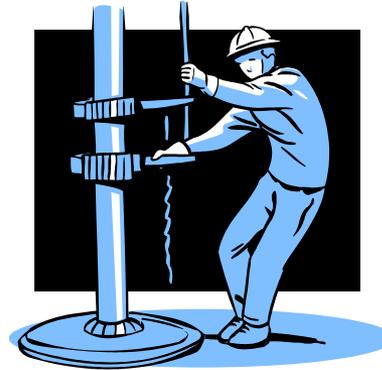




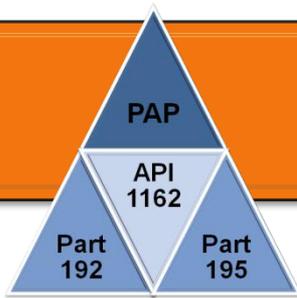
Public Awareness Program (PAP): *Stakeholder Audiences*

Who are excavators?

- Construction companies
- Blasting companies
- Excavation equipment rental
- Public works officials
- Public street, road, highway depts
- Timber companies
- Fence building companies
- Drain tiling companies
- Landscapers
- Well drillers
- Home builders
- Land developers
- Irrigation companies
- One-call centers



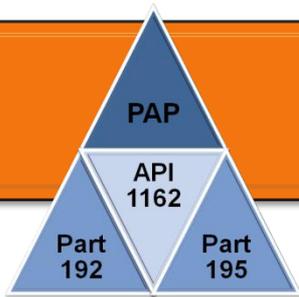
Public Awareness Program (PAP): *Messages*



Message Content:

- ✓ Pipeline Purpose and Reliability
- ✓ Hazard Awareness and Prevention Measures
- ✓ Leak Recognition and Response
- ✓ Emergency Preparedness Communications
- ✓ Damage Prevention
- ✓ Pipeline Location Information
- ✓ Gas Transmission Operators - Overview of IMP and HCA
- ✓ Operator Websites
- ✓ ROW Encroachment Prevention
- ✓ Planned Pipeline Maintenance/Construction Activities
- ✓ Security
- ✓ Facility Purpose



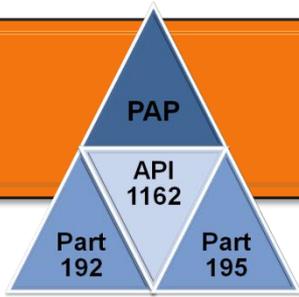


Public Awareness Program (PAP): *Effective Communication*

Message Delivery Methods and/or Media:

- ✓ Print Materials (brochures, flyers, bill stuffers, letters, maps)
- ✓ Personal Contact (door-to-door, calls, open houses)
- ✓ Electronic Communications (videos, CDs, email)
- ✓ Mass Media Communications (PSAs, newspapers, advertising)
- ✓ Specialty Advertising Materials
- ✓ Informational or Educational Items
- ✓ Pipeline Markers
- ✓ One-Call Center Outreach
- ✓ Operator Websites





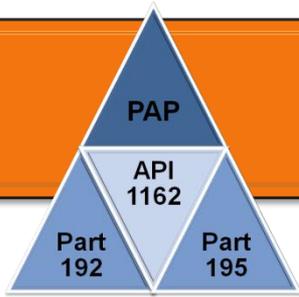
Public Awareness Program (PAP): *Effective Communication*

Requirements for communications:

- ✓ Message specific for each target audience
- ✓ Frequency appropriate for audience
- ✓ Message delivered in an effective manner



Public Awareness Program (PAP): Effective Communication



Digging safely begins when you call before you dig. But that's only the beginning. In fact, it's the first step in an ongoing process that requires a shared responsibility.

Whether you are a rancher or farmer, facility owner or operator, locator, design professional, excavator, or contractor, ensuring the safety of those who work or live in the vicinity of underground facilities and protecting vital services is everyone's responsibility.

Following the Dig Safely process will help to keep your farm, family and community safe when performing deep excavations outside the scope of normal farming activities. A call to your One Call Center is strongly encouraged prior to excavating activities such as tiling, subsoiling or terracing projects. Call before you dig.

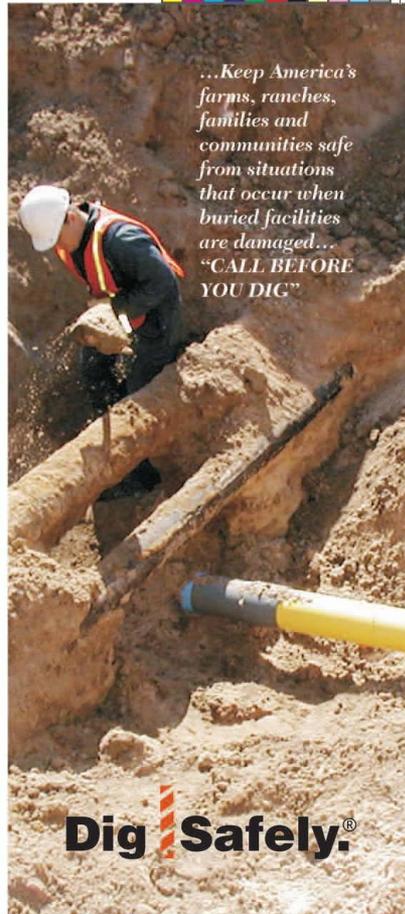
1. Call before you dig
2. Wait the required time
3. Respect all markings
4. Dig with care



Keep what's above our land safe by understanding what's below.

The Common Ground Alliance (CGA) is a nonprofit organization representing more than 1,000 individuals from 15 stakeholder groups and more than 120 member organizations. CGA is dedicated to promoting shared responsibility in damage prevention, to ensure public safety, environmental protection and the integrity of services through effective damage prevention practices.

For more information visit www.commongroundalliance.com or www.digsafely.com



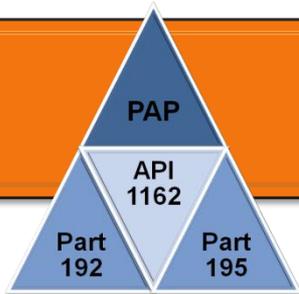
*...Keep America's farms, ranches, families and communities safe from situations that occur when buried facilities are damaged...
"CALL BEFORE YOU DIG"*



Call before you dig. 800-DIG-TESS
(800-344-8377)



Public Awareness Program (PAP): *Effective Communication*



Establish Public Awareness Program Administration
with Management Support
(Steps 1 – 4)

(12) Determine changes based on results
Document changes
Determine future funding
Implement changes

Identify Stakeholder
Audiences
(Step 5)

Evaluate the Program and Implement
Continuous Improvement
(Steps 11 and 12)

Determine the Messages
(Step 6)

Implement the Program and Track
Progress
(Step 10)

Establish Frequencies of Messages
(Step 7)

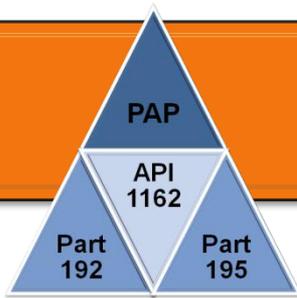
Evaluate the Need for Program Enhancement (i.e.
Supplemental Activities) (Step 9)

Establish the Delivery
Methods (Step 8)

**Public
Awareness
Program
Process Guide**

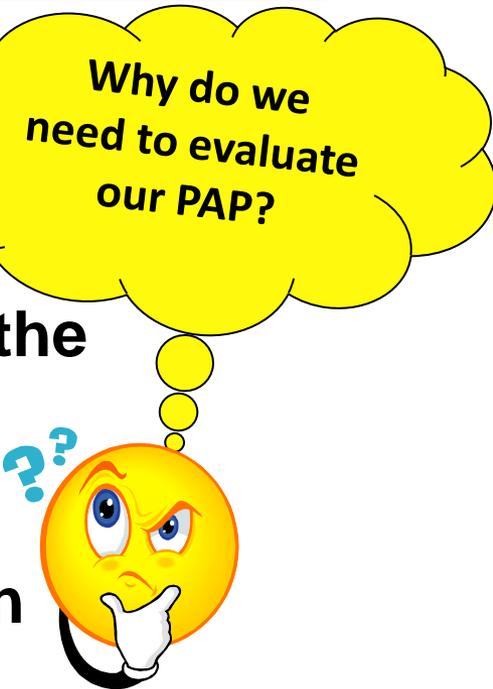


PAP Program Evaluation: *Purpose & Scope*



Primary Purposes:

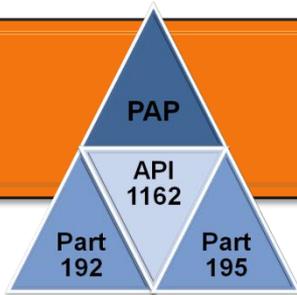
- Assess whether current program is effective in achieving the objectives of the PAP
- Provide information on Implementing improvements based on PAP evaluation (findings)



Secondary Purposes:

- Demonstrate status and validity of program



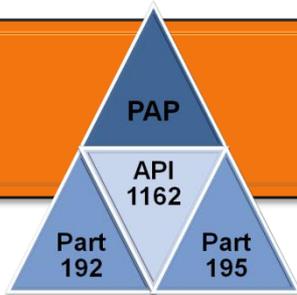


PAP Program Evaluation: *Elements of Evaluation Plan*

Tracking performance:

- **Whether the program is being implemented as planned (the process)**
- **Whether the program is effective (program effectiveness)**



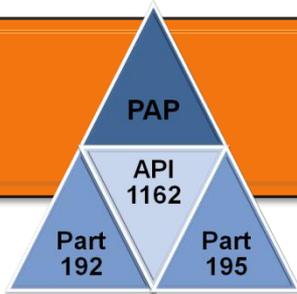


PAP Program Evaluation: *Measuring Program Implementation*

The operator should complete an annual review of PAP:

- **Has the PAP been written to address the objectives, elements, and baseline schedule?**
- **Has the public awareness program been implemented and documented according to the written program?**



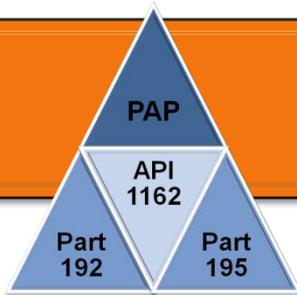


PAP Program Evaluation: *Measuring Program Effectiveness*

Conduct periodic effectiveness evaluations (*no more than 4 years*):

- **Is information reaching the intended stakeholder audiences?**
- **Do the recipient audiences understand the messages delivered?**
- **Are the recipients motivated to respond appropriately in alignment with the information provided?**
- **Is the implementation of the public awareness plan impacting bottom line results (reducing incidents, third party hits, etc.) ?**



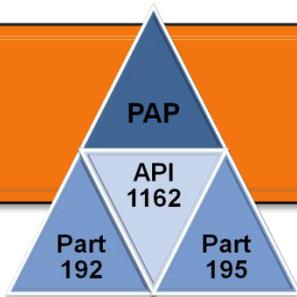


PAP Program Evaluation: *Measuring Program Effectiveness*

Measure 1 – Outreach: Percentage of Each Intended Audience Reached With Desired Messages

- Track percentage of individuals or entities reached within an intended audience (households, excavators, local government, first responders, etc.)
- Estimate the percentage of the stake holders actually reached within the target geographical region along the pipeline
- Measure will help to evaluate delivery methods



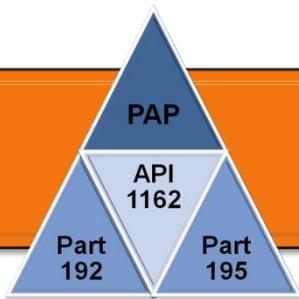


PAP Program Evaluation: *Measuring Program Effectiveness*

Measure 2 - Understandability of the Content of the Message

- **Assesses the percentage of the intended stakeholder audience that understood and retained the key information in the message received**
- **Evaluate the effectiveness of the delivery media style and content**
- **Will help to assess the effectiveness of the delivery methods used**



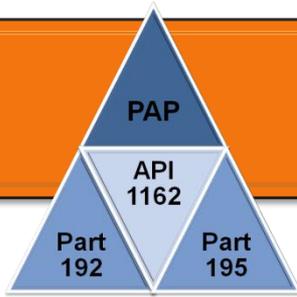


PAP Program Evaluation: *Measuring Program Effectiveness*

Measure 2 - Understandability of the Content of the Message: Pretest materials

- **Operators should pretest their public awareness materials for their appeal and messages for their clarity, understandability and retain-ability before they are widely used**
- **Pretest may be performed using a small representative audience or focus group (Sample surveys are in Appendix E)**



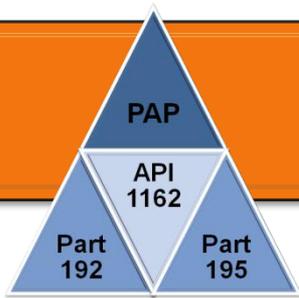


PAP Program Evaluation: *Measuring Program Implementation*

Measure 2 - Understandability of the Content of the Message: Survey target stakeholder audiences:

- **Assess understandability by surveying the target stakeholder audience in the course of face-to-face contacts, telephone or written surveys**
- **Factors to consider when designing surveys include:**
 - **Appropriate sample size to draw general conclusions**
 - **Questions to gauge understandability of messages and knowledge of survey respondent**
 - **Retention of messages**
 - **Comparison of most effective means of delivery**





PAP Program Evaluation: *Measuring Program Effectiveness*

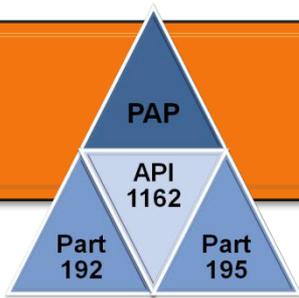
Measure 3 – Desired behavior of the stakeholder audience:

- **Measure of whether appropriate prevention behaviors have been learned and whether appropriate response or mitigation measures would or have taken place.**

Baseline Evaluation:

- **The survey conducted to assess Measure 2 (understandability of the content of the message) should be designed to include questions that ask respondents to report on actual behaviors following incidents**





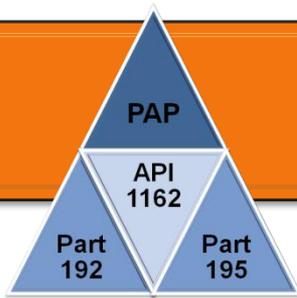
PAP Program Evaluation: *Measuring Program Effectiveness*

Measure 3 – Desired behavior of the stakeholder audience:

Supplemental evaluation:

- **Assessments of actual incidents should recognize that each response would require unique on –scene planning and response to specifics of each emergency**
- **Measuring the appropriateness of public stakeholder responses could include tracking whether an actual incident that affected residents was correctly identified and whether reported and personal safety actions undertaken were consistent with public awareness communications**





PAP Program Evaluation: *Measuring Program Effectiveness*

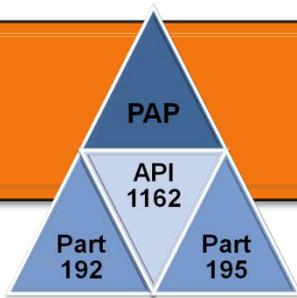
Measure 3 – Desired behavior of the stakeholder audience:

Supplemental evaluation:

- **Operators may also want to assess whether their public awareness program has successfully driven other behaviors**
 - **Whether excavators are following through on all safe excavation practices , in addition to calling One Call**
 - **The number of notifications received from the One Call Center (was there an increase after distribution of public awareness materials)**
 - **An assessment of first responder behaviors, response to pipeline related calls and post incident assessments, were their actions consistent with the key messages in the public awareness communications**



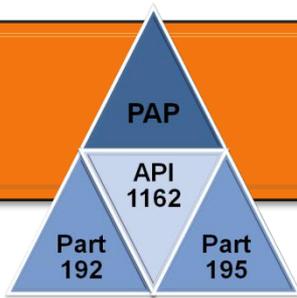
PAP Program Evaluation: *Measuring Program Effectiveness*



Measure 4 – Achieving bottom line results:

- The change in the number and consequences of third party incidents is one measure of bottom line results.
- As a baseline an operator should track the number of incidents and consequences caused by third party excavators
- The tracking of leaks caused by third party excavation should be compared to statistics of pipelines in the same sector
- Data regarding third party excavation damages should be evaluated over a relatively long period of time to determine any trends applicable to the operators public awareness program
- One other measure an operator may consider is the affected public's perception of the safety of pipelines

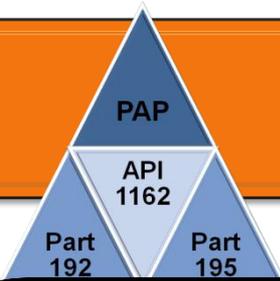




PAP Program Evaluation: *Summary of Evaluation Process*

Evaluation Approaches	Evaluation Techniques	Recommended Frequency
Self Assessment of Implementation	Internal review	Annually
Evaluation of effectiveness of program implementation: Outreach Level of knowledge Changes in behavior Bottom-line results	Survey operator-designed and conducted survey	No more than four years apart.
Implement changes to the PAP	Responsible person as designated in written PAP	As required by findings within 12 months of evaluation

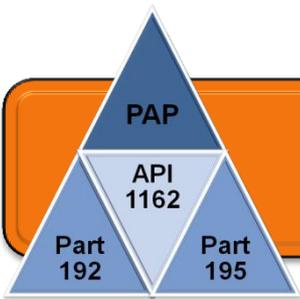




Public Awareness Program (PAP): *Documentation and Recordkeeping*

Put it in Writing!
Document, Document,
and
Document some more!

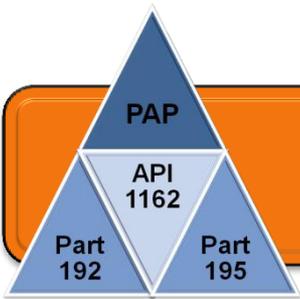




Public Awareness Program (PAP): *Supplemental Enhancements*

- **Consider following factors:**
 - Potential hazards
 - High Consequence areas
 - Population density
 - Land development activity
 - Land farming activity
 - Third-party damage incidents
 - Environmental considerations
 - Pipeline history in an area
 - Specific local situations
 - Regulatory requirements
 - Previous PAP evaluations
 - Other relevant needs

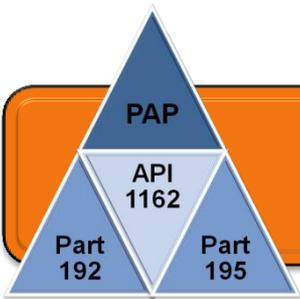




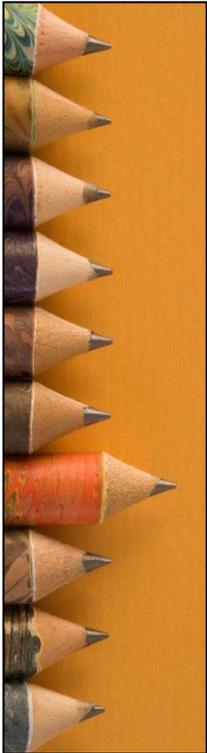
Public Awareness Program (PAP): *Compliance*

- Compliance means meeting all the regulations in **§192.616** not just following API RP-1162
- Despite preliminary review - PAP can be, and will be, inspected
- Program Evaluations will be inspected
- PHMSA/State Agencies pay close attention to
 - Message content, delivery methods, frequency, buffer zones, metrics and other PAP elements as they relate to the specific pipeline and facilities
 - Supplemental Enhancements when conditions along the pipeline suggest a more intensive effort is needed:
 - High Consequence Areas
 - Land Development Activity
 - Third-party Damage Incidents
 - Pipeline History



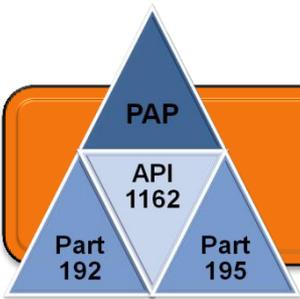


Public Awareness Program (PAP): *Points to Remember*



- Plans were reviewed for deviations from API RP-1162 - they were not *"approved"*
- Operators no longer submit Public Awareness Plans for Review
- PHMSA/PSC will review PAPs as stand alone or combined with inspection activities





Public Awareness Program (PAP): *Inspection Issues*

- **Generic off the shelf brochures – does not address unique attributes of pipeline**
- **API 1162 requires a pretest of public awareness materials upon design or major redesign of materials – many operators can't demonstrate this was done**
- **API 1162 requires annual implementation audit/inspection – no documentation to show this was done**
- **Effectiveness evaluations poorly done and lack detail – survey is data collection tool, not an evaluation**



STAKEHOLDER COMMUNICATIONS - PAPs

PHMSA Stakeholder Communications: Land Use ...



Stakeholder Communications

Home General Public Local Officials State Regulators Federal Agencies Emergency Officials Advocates Industry Excavators

Print

Public Awareness
Regulatory Requirements

API Recommended
Practice

API RP 1162
API RP 1162 Summary
Tables

Briefing Sheet

Workshops

Inspection
Observations

FAQs

Downloads

API RP 1162
Inspection Form
Enforcement Guidance
(Gas, 49 CFR 192)
Enforcement Guidance
(Liquid, 49 CFR 195)

Site Pages

Pipeline Basics
Safety Standards
Inspection
Enforcement
(PHMSA)
Enforcement
(States)

Public Awareness Programs

PHMSA, the pipeline industry and other stakeholders continue working to improve the outreach and effectiveness of public awareness programs.

Federal pipeline safety regulations require pipeline operators to conduct continuing public awareness programs to provide pipeline safety information to four stakeholder audiences, including:

- affected public,
- emergency officials,
- local public officials, and
- excavators.

Regulatory Requirements

Federal pipeline safety regulations (49 CFR 192.616 and 49 CFR 195.440) require pipeline operators to develop and implement public awareness programs that follow the guidance provided by the American Petroleum Institute (API) "Public Awareness Programs for Pipeline Operators" (incorporated by reference in federal regulations). [More...](#)

API Recommended Practice 1162

API RP 1162 is an industry consensus standard that provides guidance and recommendations to pipeline operators for enhanced public awareness programs. It addresses various elements of such programs, including the intended audience, communication frequencies and methodologies for communicating the information, and evaluation of the programs for effectiveness.

Public Awareness Program Workshops

PHMSA sponsored a public workshop on effectiveness evaluations of pipeline operator public awareness programs in 2008; a public workshop in February 2008 and co-sponsored workshops in 2005 and in 2003 to help pipeline operators develop effective public awareness programs. [More...](#)

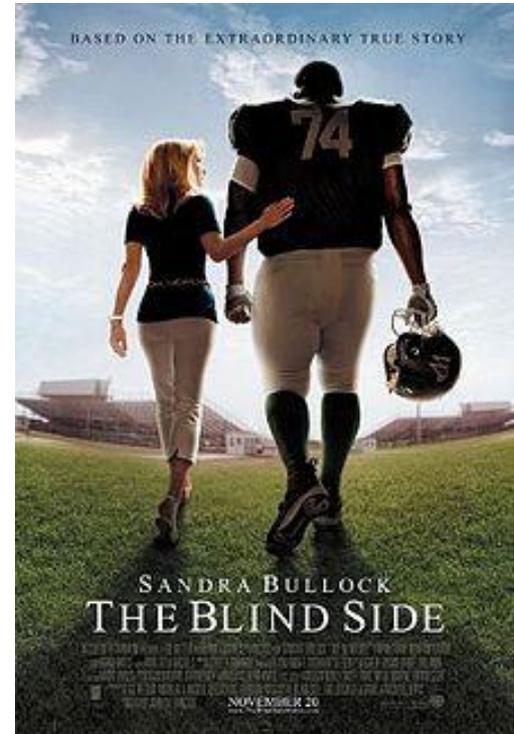
Inspection and Enforcement Documents

As part of our continuous improvement approach for inspecting pipeline operator public awareness program effectiveness, PHMSA has issued several documents to provide guidance to pipeline operators on how to develop and implement effective public awareness programs. [More...](#)



Know Your Stakeholder

"You should get to know your players, Burt. He tested 98% in protective instincts. I said you could thank me later -- it's later, Burt."





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