Regulatory Evaluation

Docket No. PHMSA-2009-0192

Pipeline Damage Prevention Program

Final Rule

July 2015

Executive Summary

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is issuing a final rule to establish criteria and procedures for determining the adequacy of State pipeline excavation damage prevention law enforcement programs. The rule also establishes an administrative process for making adequacy determinations; establishes the Federal requirements PHMSA will enforce in States with inadequate excavation damage prevention law enforcement programs; and establishes the adjudication process for enforcement proceedings against third-party excavators where Federal authority is exercised.

Pursuant to the Pipeline Inspection, Protection, Enforcement, and Safety (PIPES) Act of 2006, establishment of review criteria for State excavation damage prevention law enforcement programs is a prerequisite should PHMSA find it necessary to conduct an enforcement proceeding against an excavator in the absence of an adequate enforcement program in the State where the violation occurs. The development of these criteria and the subsequent determination of the adequacy of State excavation damage prevention law enforcement programs is intended to encourage States to develop effective excavation damage prevention law enforcement programs to protect the public from the risk of pipeline ruptures caused by excavation damage, and allow for Federal administrative enforcement action should any State fail to take such action. Where States have adequate excavation damage enforcement programs, there will be no Federal excavation damage enforcement programs in those States.

On April 2, 2012, PHMSA published a notice of proposed rulemaking (NPRM) to revise the Pipeline Safety Regulations to establish criteria and procedures for determining the adequacy of State pipeline excavation damage prevention law enforcement programs; establish an administrative process for making adequacy determinations; establish the Federal requirements

PHMSA will enforce in States with inadequate excavation damage prevention law enforcement programs; and establish the adjudication process for administrative enforcement proceedings against excavators where Federal authority is exercised. A summary of the comments on the costs/benefits analysis and our responses to the comments are included in the final rule and attached at the end of this document (Attachment A).

Executive Orders 12866 and 13563 require agencies to regulate in the "most cost-effective manner," to make a "reasoned determination that the benefits of the intended regulation justify its costs," and to develop regulations that "impose the least burden on society." The expected benefit of this rulemaking action is an increased deterrent to violations of one-call (though requirements vary by State, a one-call system allows excavators to call one number in a given State in order to ascertain the presence of underground utilities) requirements and the attendant reduction in pipeline incidents and accidents caused by excavation damage. Based on incident reports submitted to PHMSA, failure to use an available one-call system is a known cause of pipeline accidents. PHMSA analyzed the costs and benefits of this proposed rule. To determine the benefits, PHMSA was able to obtain data for three States over the course of the establishment of their excavation damage prevention programs. Each of the three States had a decrease of at least 63 percent in the number of excavation damage incidents occurring after they initiated their enforcement programs. Note that there are other elements that contribute to the reduction of excavation incidents. However, the above results show that enforcement may be a major tool in decreasing underground pipeline excavation damages. PHMSA utilized three separate effectiveness rates to conservatively evaluate the benefits of this rulemaking. The rates are based on the reduction of incidents of the three States studied and more conservative

effective rates because State pipeline programs vary widely, which may lead to a lower effective rate than the three States analyzed.

This rulemaking has three separate potential cost impacts: (1) the costs to excavators to comply with the Federal excavation requirement; (2) the cost to States to have their enforcement programs reviewed, to appeal a determination of ineffectiveness, and to ask for reconsideration; and (3) the cost impact on the Federal Government to enforce the Federal excavation requirement. With regard to the potential cost impacts on excavators, PHMSA believes that excavators will not incur any additional costs because the Federal excavation standard, which is also a self-executing standard, is a minimum standard. Since it is a minimum standard, all States already have excavation standards that are more stringent than the Federal standard. Therefore, this minimum standard imposes no additional costs on excavators. The cost impacts on States are those costs associated with having their enforcement programs reviewed (estimated to be $20,000 per year), to appeal a determination of ineffectiveness (estimated to be a one-time cost of $125,000 (5 x $25,000)), and to ask for reconsideration (estimated to be a one-time cost of $350,000 (14 x $25,000)). Therefore, the total estimated first year costs impacts on States are (($20,000 (annually) + (14 x $25,000) + (5 x $25,000)) = $495,000. The annual costs impact on States in subsequent years is estimated to be $20,000. The annual cost impacts on the Federal government are estimated to be approximately $163,145. Therefore, the total first year costs of this rulemaking is estimated to be $658,145 ($495,000 + $163,145). In the following years the costs are estimated to be approximately $183,145 ($20,000 + $ 163,145) per year. The total cost of this alternative over ten years is $2,084,132 applying a 3% discount rate, and $1,720,214 applying a 7% discount rate. The average annual benefit of this alternative ranges from $4,642,829 to $14,739,141 depending on the assumption that PHMSA applies regarding the

effectiveness rate of this final rule in preventing excavation damage incidents. Evaluating the lower end of the range of benefits over ten years results in a total benefit of over $40,790,000 applying a 3% discount rate, and over $31,150,000 applying a 7% discount rate.

Background

On December 29, 2006, the PIPES Act was signed into law. The PIPES Act established prohibited practices applicable to excavators. Specifically, paragraph (d) of section 2 stated:

> (d) PROHIBITION APPLICABLE to EXCAVACATORS—A person who engages in demolition, excavation, tunneling, or construction—
>
> ‘‘(1) may not engage in a demolition, excavation, tunneling, or construction activity in a State that has adopted a one-call notification system without first using that system to establish the location of underground facilities in the demolition, excavation, tunneling, or construction area;
>
> ‘‘(2) may not engage in such demolition, excavation, tunneling, or construction activity in disregard of location information or markings established by a pipeline facility operator pursuant to subsection (b); and
>
> ‘‘(3) and who causes damage to a pipeline facility that may endanger life or cause serious bodily harm or damage to property—
>
> ‘‘(A) may not fail to promptly report the damage to the owner or operator of the facility; and
>
> ‘‘(B) if the damage results in the escape of any flammable, toxic, or corrosive gas or liquid, may not fail to promptly report to other appropriate authorities by calling the 911 emergency telephone number.

The PIPES Act provides PHMSA with limited authority to conduct civil enforcement against excavators that violate the prohibited practices identified in paragraph (d) of section 2 of the PIPES Act. Specifically, paragraph (f) of section 2 of the PIPES Act imposes the following limitation on PHMSA's authority to conduct Federal civil enforcement actions against excavators:

> ''(f) LIMITATION.—The Secretary may not conduct an enforcement proceeding under subsection (d) for a violation within the boundaries of a State that has the authority to impose penalties described in section 60134(b)(7) against persons who violate that State's damage prevention laws, unless the Secretary has determined that the State's enforcement is inadequate to protect safety, consistent with this chapter, and until the Secretary issues, through a rulemaking proceeding, the procedures for determining inadequate State enforcement of penalties.''

For violations occurring in States where a determination of inadequacy is made due to the absence of civil penalty authority or other reason, section 2 of the PIPES Act authorizes PHMSA to take civil enforcement action against anyone who violates the prohibited practices identified in paragraph (d). Pipeline operators remain subject to civil enforcement if they violate existing requirements to respond to a location request or to ensure accurate marking of a pipeline in response to a request. As a prerequisite to Federal enforcement, PHMSA must first establish procedures for evaluating the adequacy of a State's damage prevention enforcement program, and then find a given State's program to be inadequate based on those procedures, before resorting to Federal enforcement against an excavator that violates the Federal excavation damage enforcement requirements in that State. This rulemaking action establishes the required procedures.

Statement of Problem

Incident Data[1]

PHMSA's data show that excavation damage to underground pipelines caused by excavation activity remains a major cause of pipeline failures in the United States. For the period from 1988 to 2012, 188 fatalities, 723 injuries, 1,678 incidents, and $474,759,544 in estimated property damages were reported as being caused by excavation damage on all PHMSA regulated pipeline systems in the United States, including onshore and offshore hazardous liquid, gas transmission, and gas distribution lines, except gathering lines. This accounts for 24 percent of all significant incidents[2] 39 percent of all fatalities, 19 percent of all injuries, and 9 percent of all estimated property damages from incidents involving pipelines.[3]

Effective enforcement of State excavation damage prevention laws is a key to reducing pipeline excavation damage incidents. PHMSA understands the challenges States face in achieving positive statutory and/or regulatory change with regard to excavation damage prevention law enforcement. In accordance with the PIPES Act, PHMSA is issuing, through this rulemaking action, criteria and procedures for determining whether a State's enforcement of its excavation damage prevention laws is adequate to allow for Federal enforcement where necessary. This rulemaking action also establishes the Federal requirements PHMSA will enforce and establishes the administrative process for assessing a civil penalty against an excavator who violates these requirements in a State where Federal authority is being exercised.

[1] Data from the U.S. Department of Transportation, PHMSA Office of Pipeline Safety, Incident and Accident Reports of Gas Distribution, Gas Transmission & Gathering and Hazardous Liquid Pipeline Systems. Pipeline incident and accident summaries are available on PHMSA Stakeholders Communication website at: http://primis.phmsa.dot.gov/comm/Index.htm?nocache=3320

[2] Significant incidents are identified by PHMSA as incidents reported by pipeline operators when any of the following conditions are met: 1) Fatality or injury requiring in-patient hospitalization. 2) $50,000 or more in total costs, measured in 1984 dollars. 3) Highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more. 4) Liquid releases resulting in an unintentional fire or explosion.

[3] Other major causes of pipeline damage include corrosion, material failure, human error, and natural force damage.

State Excavation Damage Prevention Law Enforcement Authority[4]

The State authority for enforcing the damage prevention law varies depending on the State. For example, in twelve States enforcement authority resides with the State's Attorney General, in one State with the District or Prosecuting attorney, in one State with District or Prosecuting Attorney and Public Utilities Commission, in one State with the Public Utility Commission and Attorney General, in one State with the one-call center, in 20 States with the State's Public Utilities Commission or equivalent, in four States with local law enforcement, and in one State under a damage prevention authority board. Although PHMSA has information on where the States delegate their damage prevention enforcement, PHMSA does not have comprehensive information on whether or not the States exercise this authority since many States do not make this information public or share it with the Federal Government. Further, there are several States without any excavation damage prevention law enforcement program or a delegated agency or entity to enforce the authority.[5]

PIPES Act of 2006

Major portions of the PIPES Act were focused on damage prevention including additional resources and clear program guidelines as well as additional enforcement authorities to assist States in developing effective excavation damage prevention programs. With respect to resources, section 2 of the PIPES Act also added a new State Damage Prevention Grant program to the Federal Pipeline Safety Law at 49 USC § 60134. Any State authority that is or will be responsible for preventing damage to underground pipeline facilities designated by the State's governor is eligible for a grant as long as the State participates in the oversight of pipeline

[4] Data from PHMSA as of 2012 (https://primis.phmsa.dot.gov/comm/DamagePrevention.htm).
[5] As of March 2013, the nine States without any statutory excavation damage prevention law enforcement authority were: Alaska, Colorado, Michigan, Mississippi, Montana, North Carolina, Ohio, Oklahoma, and West Virginia.

transportation pursuant to an annual 49 U.S.C. § 60105 certification or 49 U.S.C. § 60106 agreement in effect with PHMSA. The purpose of these grants is to establish comprehensive State programs designed to prevent damage to underground pipelines in States that do not have such programs and to improve damage prevention programs in States that do. States are encouraged to implement the following nine elements of effective damage prevention programs:

1. Participation by operators, excavators, and other stakeholders in the development and implementation of methods for establishing and maintaining effective communications between stakeholders from receipt of an excavation notification until successful completion of the excavation, as appropriate.
2. A process for fostering and ensuring the support and partnership of stakeholders, including excavators, operators, locators, designers, and local government in all phases of the program.
3. A process for reviewing the adequacy of a pipeline operator's internal performance measures regarding persons performing locating services and quality assurance programs.
4. Participation by operators, excavators, and other stakeholders in the development and implementation of effective employee training programs to ensure that operators, the one-call center, the enforcing agency, and the excavators have partnered to design and implement training for the employees of operators, excavators, and locators.
5. A process for fostering and ensuring active participation by all stakeholders in public education for damage prevention activities.
6. A process for resolving disputes that defines the State authority's role as a partner and facilitator to resolve issues.

7. Enforcement of State damage prevention laws and regulations for all aspects of the damage prevention process, including public education, and the use of civil penalties for violations assessable by the appropriate State authority.
8. A process for fostering and promoting the use, by all appropriate stakeholders, of improving technologies that may enhance communications, underground pipeline locating capability, and gathering and analyzing information about the accuracy and effectiveness of locating programs.
9. A process for review and analysis of the effectiveness of each program element, including a means for implementing improvements identified by such program reviews.

From 2008-2012, PHMSA awarded 95 grants to support State damage prevention programs for a total of over $7.3 million and has received applications from 22 States for 2013, with requests totaling over $2 million. However, States are not required to specifically use the grant for enforcement of their programs. That is, some States may use a portion of their base grants for other damage prevention activities (see the nine elements listed above). Of the $7.3 million in grants awarded from 2008 to 2012, approximately $1,962,000 or 27 percent has been targeted by the States specifically to enforcement (element 7 of the nine elements of effective damage prevention programs described in the PIPES Act).

In addition, since 1995, PHMSA awarded over $16 million in State One Call Grants. PHMSA's One Call Grant Program is designed to provide funding to State agencies for advancement of excavation damage prevention programs, including changes to State underground damage prevention laws, related compliance activities, training, and public education. This discretionary grant program is only open to States that participate in the oversight of pipeline transportation pursuant to an annual 49 U.S.C. § 60105 certification or 49

U.S.C. § 60106 agreement in effect with PHMSA. Eligible State agencies may apply for one-call grant funding on an annual basis, with a maximum request amount of $45,000 per State. One Call Program grants may be used to support initiatives to further promote efforts specifically for damage prevention, including one-call legislation, related compliance activities, training and public education. These may include for example, areas such as:

- Compliance - compliance monitoring and enforcement, legal assistance with enforcement actions, development of compliance statistics, procurement of computers and other equipment to support ongoing enforcement programs
- Performance - development of one-call center statistics, one-call membership initiatives, procurement of one-call center computers and other equipment, and
- Communication and training - communication improvements, development and/or conduct of State-provided training programs, development and/or distribution of promotional items or materials, informational mailings, and advertisements, damage prevention awareness campaigns, and public service announcements

PHMSA, working with the National Association of Pipeline Safety Representatives (NAPSR), published a report on the One Call Grant Program in February 2010. The report is available at http://primis.phmsa.dot.gov/comm/publications/OneCall-Report-2009-Final-February2010.pdf

PHMSA is a strong supporter of expanded State damage prevention enforcement to protect pipelines. PHMSA strongly believes that individual States should retain the primary responsibility to effectively enforce damage prevention laws. In fact, PHMSA intentionally delayed the initiation of this rulemaking action with the anticipation that these additional grants would provide States the additional resources needed to improve their enforcement of their

damage prevention program. However, PHMSA must follow Congressional direction and assume that responsibility if PHMSA determines that a State is not doing so adequately. In order to assume responsibility for States and take enforcement action, PHMSA must have procedures in place to evaluate State programs to make such determinations.

Affected Entities

This rulemaking action affects States' excavation damage prevention enforcement programs, pipeline operators, and excavators. PHMSA will enforce the prohibited excavation practices identified in paragraph (d) of section 2 of the PIPES Act against third party excavators who damage a pipeline where a State has no or an inadequate excavation damage enforcement program. As of March 2013, PHMSA identified nine States without any State excavation damage enforcement program. However, PHMSA does not know which States, if any, have an inadequate damage prevention enforcement program because PHMSA does not currently have procedures and criteria for evaluating program adequacy.

Although about most States currently have some kind of excavation damage prevention enforcement authority or a delegated agency or entity to enforce the authority, PHMSA has not determined which of these State agencies exercise their authority and/or have an effective enforcement program. Initially, where PHMSA determines a State agency does not exercise its excavation damage prevention enforcement program authority, PHMSA will exercise its authority in that State against third party excavators that violate the Federal excavation damage prevention requirements. Therefore, this rulemaking action does not mandate States to have adequate excavation damage prevention enforcement programs.

PHMSA currently has authority, including excavation damage enforcement authority, over PHMSA regulated pipeline operators.[6] Therefore, PHMSA believes that there are no additional costs to pipeline operators due to this rulemaking action.

Under this rulemaking action, PHMSA will exercise its authority to enforce Congressionally mandated damage prevention regulations against third party excavators in States that PHMSA determines to have no or an inadequate excavation damage prevention enforcement program. Determining the number of excavators in those States is very difficult because excavators include any individual or legal entity, public or private, proposing to or engaging in excavation or demolition work for the excavator or another person. Professional excavators are represented by several trade associations such as the Associated General Contractors of America and the National Utility Contractors Association, but only a small subset of professional excavators are members of the trade associations. Excavators also include fence builders, landscapers, tree removal companies, realtors (installing signs), and many others. The PIPES Act requires excavators to comply with notification requirements through one-call systems before they start excavation work. In addition, each State, though it may not have an adequate damage prevention enforcement program, has an excavation damage prevention law that is equivalent if not more rigorous than the Federal requirements. Since the provisions of paragraph (b) of Section 2 of the PIPES Act were self-executing (i.e., immediately effective without further action, legislation or legal steps) and given the fact that each State already has an excavation requirement consistent with if not more rigorous than the Federal requirements, PHMSA does not believe that this rulemaking action imposes any new costs on excavators.

[6] 49 CFR §§ 192.614 and 195.442.

Alternatives Considered

The purpose of this rulemaking action is to establish criteria and procedures for determining the adequacy of State excavation damage prevention law enforcement programs; establish an administrative process for States to contest notices of inadequacy from PHMSA; establish the Federal requirements PHMSA will enforce in States with inadequate excavation damage prevention law enforcement programs; and establish the adjudication process for violators of the Federal requirements established through this rulemaking proceeding. In developing this rulemaking action, PHMSA considered three alternatives:

1. Do nothing
2. Enforce the excavation damage prevention requirement where a State has no or an inadequate excavation damage prevention enforcement program, and
3. Establish stringent Federal requirements for State excavation damage prevention enforcement programs and enforce those requirements against excavators where the States do not meet the stringent Federal excavation damage prevention requirements

1. Do nothing. Regulatory analyses typically consider an alternative in which PHMSA would not take any action because it would maintain the status quo. As a result, no new requirements would be levied, no costs would be incurred to implement new requirements, and no new benefits would result.

In this case, the PIPES Act of 2006 provides PHMSA with authority to reduce and prevent third party damage to pipelines by improving State and Federal damage prevention enforcement programs. When excavators use a State mandated one-call system and wait for pipeline operators to mark their pipelines before excavation work starts, the excavation is less likely to result in an incident causing injury, death, property damage, or disruption of services.

Based on data from States that have begun enforcement programs (outlined below), PHMSA believes that taking enforcement action against third party excavators that fail to follow the required one-call system will lead to fewer incidents. However, without the regulatory framework in place, PHMSA cannot take any action against third party excavators that do not follow the one-call system and, therefore, no benefits would be realized under this alternative. This alternative is not considered for further development in this analysis.

2. Enforce minimum Federal excavation damage prevention program where a State has no, or an inadequate, excavation damage prevention program.

PHMSA is a strong supporter of effective State excavation damage prevention law enforcement to protect underground pipelines. PHMSA believes that individual States should retain the primary responsibility to effectively enforce their excavation damage prevention laws. PHMSA's goal is to minimize the need for Federal enforcement by encouraging States to strengthen their excavation damage prevention laws by including the authority to impose and effectively apply civil penalties against persons who violate those laws.

The Federal damage prevention enforcement program includes requirements for excavators to use an available one-call system before digging, to excavate with proper regard for location information or markings established by a pipeline operator, to promptly report any damage to the pipeline operator, and to report any emergency release of hazardous products to appropriate authorities by calling 911.

The PIPES Act requires PHMSA to determine the adequacy of a State's excavation damage prevention law enforcement program before PHMSA takes enforcement action against excavators in that State. Therefore, PHMSA cannot take enforcement actions against excavators in States where PHMSA has not determined the adequacy of the State program nor can PHMSA

take enforcement action against excavators in States that PHMSA has determined to have adequate excavation damage enforcement programs. PHMSA's goal is to encourage States to implement adequate enforcement programs. Federal enforcement is not intended to be permanent and is instead intended to provide incentive for States to develop and implement adequate programs. PHMSA will cease new enforcement action as soon as a State is determined to have an adequate enforcement program.

Costs and Benefits of Alternative 2

Overview

The costs impacts associated with this alternative involve the potential costs to excavators for complying with the federally mandated excavation requirement, the costs to the Federal Government for enforcing the Federal requirement, and the costs to States for responding to a Federal decision of inadequacy of a State's enforcement of its damage prevention program.

The benefits of this alternative are potential decrease in pipeline incidents due to excavation damage from having an adequate enforcement of damage prevention laws in all 50 States. As will be shown below, enforcement is a fundamental element to an effective overall damage prevention program.

Costs of Alternative 2

Cost Impacts on Excavators

In those States that have inadequate enforcement of their damage prevention program, PHMSA will enforce the following one-call damage prevention requirement:

Prior to commencing excavation activity where an underground gas or hazardous liquid pipeline may be present, the person intending to conduct the excavation must:

(a) use an available one-call system before digging to notify operators of

underground pipeline facilities of the timing and location of the intended excavation;

(b) if underground pipelines exist in the area, wait for the pipeline operator to arrive at the excavation site and establish and mark the location of its underground pipeline facilities before excavating;

(c) excavate with proper regard for the marked location of pipelines an operator has established by respecting the markings and taking all practicable steps to prevent excavation damage to the pipeline; and

(d) make additional use of one-call as necessary to obtain locating and marking before digging if additional excavations will be conducted at other locations.

This excavation damage prevention requirement mirrors the requirement that all 50 States have adopted. In addition, this requirement was adopted in the PIPES Act of 2006 as a self-executing requirement (i.e., a requirement that is immediately effective without further action, legislation or legal steps). Therefore, since the prohibited excavation practices in this rulemaking action mirror those requirements already required in every State and because of the fact that this requirement was self-executing under paragraph (d) of Section 2 of the PIPES Act, PHMSA does not believe that this rulemaking action imposes any new costs on excavators.

Cost Impacts to Federal Government

The costs to the Federal Government are related to the enforcement of the excavation requirement in States without effective enforcement of its excavation damage prevention program. As of March 2013, PHMSA identified nine States without any enforcement of their excavation damage prevention programs. As reported to PHMSA, from 1988 to 2012, these nine States had the following significant incidents related to excavation damage:

- 301 incidents,
- 26 fatalities,
- 122 injuries, and
- $64,959,985 in property damage.

If PHMSA investigates all such incidents per year, the agency would be investigating about 13 incidents (301/24) per year.

Nationwide, PHMSA's Office of Pipeline Safety initiated 320 failure investigations from 2008 through 2012. The average effort expended on the investigations is about 8 (8.4) days per investigation.

From PHMSA's Human Resources Office data for 118 inspectors, PHMSA calculated the average hourly rate (annual salary $/2087 hours) to be about $53. Average travel costs are about $270 ($1,200 to $1,500 per five days) per day for each inspector, PHMSA assumed 9 hours per work day, and it takes one inspector per inspection. Therefore, the total costs for the Federal Government to enforce its excavation requirement would be about $81,572.40 (13x8.4[9x53 + 270]) per year for the 13 incident investigations. If PHMSA has underestimated these yearly costs by 50%, the total costs to the Federal Government are still less than $163,145 per year.

Cost Impacts to States

There are two types of costs that could be imposed on States under this alternative. The first is a yearly cost that is related to the evaluation of the State's damage prevention enforcement program. The second cost element is a function of the number of States that are deemed to have inadequate enforcement of their damage prevention program and the costs associated with changing the Federal determination of inadequacy. States are not required to

comply with the criteria PHMSA establishes for an adequate excavation damage prevention enforcement program. Therefore, this alternative does not mandate States to establish an adequate excavation damage prevention enforcement program. However, a State may appeal or ask the Federal Government to reconsider its decision of inadequacy. States may elect to do nothing at all and allow the Federal Government to enforce the Federal damage prevention requirement within their boundaries.

Even though this rulemaking action does not require States to take any actions, the States have several incentives for enforcing their own excavation damage prevention laws. First, PHMSA's data suggest that States with effective enforcement programs have lower rates of excavation damages to underground utilities, including pipelines. Lower damage rates potentially translate to increased public and worker safety and decreased repair and outage costs for pipeline operators.

This rulemaking action provides several additional incentives for States to enforce their own excavation damage prevention laws. First, in the comments to the ANPRM on this subject, stakeholders expressed their desire to maintain control over their own excavation damage prevention programs, including the enforcement of damage prevention laws. Stakeholders agree that damage prevention is a local and State issue and would prefer to avoid Federal involvement in enforcement. Second, this rulemaking action will reduce PHMSA's base grant funding for State pipeline safety programs if a State does not implement an effective enforcement program within five years of the effective date of the final rule. The potential reduction in grant funding will provide incentive to the State to address enforcement gaps in the excavation damage prevention laws and programs.

Currently, States are reevaluating their pipeline safety laws. Several States, including Washington and Maryland, made significant changes to their damage prevention laws subsequent to the ANPRM on this subject. In addition, many States are in the various stages of legislative efforts to incorporate effective enforcement into their laws, these efforts range from stakeholder meetings to build support for drafting legislation to actually having a bill before the State legislatures.

Chapter 601, Title 49, United States Code (49 USC) authorizes the U.S. Department of Transportation (DOT) to regulate pipeline transportation. While DOT is primarily responsible for developing, issuing, and enforcing minimum pipeline safety regulations, Chapter 601, 49 USC, provides for State assumption of all or part of the regulatory and enforcement responsibility for intrastate pipelines.

Section 60105 of 49 USC sets forth specific requirements a State must meet to qualify for certification status to assume regulatory and enforcement responsibility for intrastate pipelines (i.e., State adoption of minimum Federal safety requirements, State inspection of pipeline operators to determine compliance with the requirements, and State provision for enforcement sanctions substantially the same as those authorized by Chapter 601, 49 USC). Currently, a participating State must annually submit a Section 60105(a) Gas Pipeline Safety Program Certification and/or a Hazardous Liquid Pipeline Safety Program Certification to the PHMSA's Office of Pipeline Safety (OPS) signifying compliance with the terms of the certification. The information provided by a State annually on the certification/agreement instruments is used by OPS for the following purposes:

- As confirmation that the State wishes to continue to participate in the pipeline safety program for another year.

- As a source of information for preparation and submission of the Annual Report on Pipeline Safety due to Congress by August 15 each year as mandated in Chapter 601, 49 USC. These sections require that the annual report include a compilation of the certifications/agreements in effect during the year, along with information on the number and qualifications of State pipeline safety inspectors, pipeline accidents, research activities, judicial actions, and information dissemination efforts.
- As a measure of State program performance that can be used to calculate the State grant allocation each year. (The certification/agreement attachments are used primarily to determine the State agency's compliance with program requirements (e.g., extent of jurisdiction, inspector qualifications, number of inspectors, number of inspection person-days, adoption of applicable Federal regulations and attendance at Federal/State meetings). A State agency's performance is the major factor considered in allocating grant-in-aid funds each year.
- As a means of demonstrating to Congress the value of the cooperative Federal/State pipeline safety program and of justifying the appropriation of funds for pipeline safety grants.

If this information were not collected on the certification/agreement instruments, there would be no way of systematically knowing if a State intends to continue its participation in the pipeline safety program. Additionally, a major source of information for preparation of the annual report to Congress would not be available. Information indicating State program performance for calculating State grant allocations would be limited. And finally, there would be no readily available basis for estimating appropriation levels for grant funding. PHMSA

intends to modify this annual certification process to review the adequacy of each State's damage prevention enforcement program. It is currently estimated that the complete annual certification process costs each State about 60 labor hours per year to complete. PHMSA estimates that this requirement will add an additional 12 hours of labor time (20% reporting time increase over the current requirement) at a rate of $30 per hour. Therefore, it is estimated that this annual review process will cost the States (51) approximately $20,000 per year to comply (51 x 12 x $30).

As previously stated, PHMSA is not sure how many States will not meet the requirement for having an adequate damage prevention enforcement program. PHMSA has identified several States that have no enforcement program. PHMSA believes that it is reasonable to estimate that additional States will be determined to have an inadequate damage prevention enforcement program. For the purposes of this analysis, PHMSA is estimating that 14 States will be deemed by PHMSA to have an inadequate damage prevention enforcement program. PHMSA is further estimating that all 14 States will ask for reconsideration but only 5 States will ask for an appeal.

The costs associated with appealing or asking for reconsideration is simply an administrative function requiring the submission to the Federal Government of documentation proving that a State has an adequate damage prevention enforcement program. However, no State is required to appeal or to ask for reconsideration. PHMSA is estimating that it will cost each State $25,000 to appeal and $25,000 to ask for reconsideration.

PHMSA also does not anticipate that those States that have been initially determined to have an adequate enforcement program will somehow change their policies to a point where their program is deemed to be inadequate. Thus, the costs to the 14 States are one-time costs and not recurring costs. The total estimated first year cost impacts on States are (($20,000 (annually) +

(14 x $25,000) + (5 x $25,000)) = $495,000. The annual estimated cost impacts on States thereafter are estimated to be $20,000.

Summary of Costs of Alternative 2

	Annual Recurring Costs	One-Time Costs	Total costs over ten years (3% discount rate)	Total costs over ten years (7% discount rate)
Cost Impacts on Excavators	$0	$0	$0	
Cost Impacts on Federal Government	$163,145	$0	$1,433,410	$1,226,073
Cost Impacts on States	$20,000	$475,000	$650,772	$625,305
Total Costs			**$2,084,132**	**$1,720,214**

Benefits of Alternative 2

The benefits associated with this alternative will be measured by a decrease in incidents from excavation damage and the societal costs associate with those incidents. If this alternative is effective, it will be because enforcement has led to higher compliance with common excavation requirements thus decreasing the number of pipeline incidents caused by excavation damage. However, comparing damage rates between States is difficult because of the variability in State laws, population densities, rates of excavation, and density of pipeline infrastructure. Some States measure damages per 1,000 excavation tickets, while others track damages per 1,000 miles of utilities. In addition, damage rates are not affected by enforcement alone; educational and training campaigns, the economy (construction and excavation rates), pipeline density, population density, and other factors also have an effect on pipeline excavation damage rates. The PIPES Act of 2006 lists nine elements of effective damage prevention programs;

enforcement is only one of these elements.[7] Therefore, the best way to determine the effectiveness of excavation damage enforcement is to compare a State's program before and after the State establishes its enforcement program.

PHMSA was able to obtain incident data for three States for both before and after they established an enforcement program of their damage prevention programs. The findings are as follows:

State of Virginia

Virginia provided to PHMSA a report of damages to natural gas pipelines per 1,000 gas-related excavation tickets (excavation tickets that require natural gas pipeline operators to mark their underground pipelines prior to start of excavation activity). The table below shows a 67 percent [{(4.49-1.50)/4.49}*100] decrease in gas pipeline damage since Virginia's enforcement activity began in 1996. However, it is not known how much this decrease in gas pipeline damage can be attributed to the establishment of the enforcement program.

[7] The other elements of effective damage prevention program are: enhanced communication between operators and excavators, fostering support and partnership of all stakeholders, operator's use of performance measures for locators, partnership in employee training, partnership in public education, enforcement agencies' role to help resolve issues, use of technology to improve the locating process, and data analysis to continually improve program effectiveness.

Year	Damages involving Gas Pipelines per 1,000 Gas Excavation Tickets
1996	4.49
1997	3.45
1998	3.36
1999	2.65
2000	2.55
2001	2.83
2002	2.30
2003	2.10
2004	2.25
2005	2.28
2006	2.04
2007	2.40
2008	1.96
2009	1.65
2010	1.65
2011	1.49
2012	1.50

State of Oregon

The table below shows Oregon's enforcement program that demonstrate about a 71 percent [{(11.1-3.2)/11.1}*100] decline in damage rates. Oregon started the enforcement in 1999, but did not begin tracking data until 2005. The data in the table below show a correlation between enforcement activity and a decline in excavation damage rates. Oregon and PHMSA believe that the decline in the damage rate is at least partially attributable to Oregon's implementation of an enforcement program.

Year	2005	2006	2007	2008	2009	2010	2011	2012
Damages per 1000 Locates	11.1	11.4	8.4	8.1	6.0	4.0	4.5	3.2
Citations Issued	67	53	74	54	21	19	23	10
Total Number of Damages	2040	2176	1973	1308	847	827	753	647

State of Massachusetts and Mechanical Damage Report

A report prepared on behalf of PHMSA[8] concluded that excavation damage continues to be a leading cause of serious pipeline failures and that better one-call enforcement is a key gap in damage prevention. In that regard, the report, "Mechanical Damage Report," noted that most jurisdictions nationwide have established laws to enforce one-call notification compliance; however, it noted that many pipeline operators consider lack of enforcement to be degrading the effectiveness of one-call programs. The report also noted that administrative enforcement measures managed through government departments are relatively easy to implement and have proven to be effective. It cited that in Massachusetts, after implementation of an enforcement program in 1986, 3,000 violation notices were issued from 1986 to the mid-1990s, contributing to a decrease of third-party damage incidents on all types of facilities from 1,138 in 1986 to 421 in 1993, a decline of approximately 63%. The report also cited findings from another study that enforcement of the one-call notification requirement was the most influential factor in reducing the probability of pipeline strikes and that the number of pipeline strikes is proportional to the degree of enforcement.

The data from the States of Virginia, Oregon and Massachusetts suggest that excavation damage enforcement programs might decrease pipeline excavation damages overtime and, therefore, decrease fatalities, injuries, and property damages. The three States highlighted above all had a decrease of at least 63% in the number of excavation damage incidents occurring after they initiated their enforcement program; however, there are other elements that likely

[8] Mechanical Damage Final Report, Michael Baker Jr., Inc., April 2009, (note this report was not peer reviewed) http://primis.phmsa.dot.gov/gasimp/docs/MECHANICAL_DAMAGE_FINAL_REPORT.pdf

contributed to the decrease of excavation damage incidents. The Table below summarizes the number of significant[9] excavation damage incidents to gas and hazardous liquids pipelines in the nine States that as of March 2013 had no enforcement program in the last 24 years (1988 to 2012).

Significant Excavation Damage (gas & liquids) for States (1988 – 2012) Without an Enforcement Program				
State	**Total Incidents**	**Total Property Damage ($)**	**Total Fatalities**	**Total Injuries**
Alaska	4	$2,125,000	0	3
Colorado	39	$11,613,597	1	33
Michigan	44	$9,908,562	11	18
Mississippi	13	$1,677,450	0	4
Montana	19	$2,359,057	1	5
North Carolina	26	$5,687,302	1	11
Ohio	50	$14,941,808	6	31
Oklahoma	92	$9,946,782	5	6
West Virginia	14	$683,489	1	11
Total	**301**	**$58,943,047**	**26**	**122**

The table below shows average annual societal costs of the significant excavation damage incidents for the nine States, as of March 2013, had no enforcement of their damage prevention program. The average annual property damages were calculated by dividing the total costs, in the above table, by the 24 years (1988-2012). The fatalities and injuries were calculated using the Department's value of a statistical life of $9.1 million, and moderate maximum abbreviated injury scale (MAIS 2) value of 0.047 for value of $427,700 (0.047*9,100,000).[10]

[9] Significant incidents are identified by PHMSA as incidents reported by pipeline operators when any of the following conditions are met: 1) Fatality or injury requiring in-patient hospitalization. 2) $50,000 or more in total costs, measured in 1984 dollars. 3) Highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more. 4) Liquid releases resulting in an unintentional fire or explosion.

[10] Guidance on Treatment of the Economic Value of a Statistical Life in U.S. Department of Transportation Analyses – February 28, 2013 http://www.dot.gov/regulations/economic-values-used-in-analysis

Average Annual Societal Costs for Significant Excavation Damage (gas & liquids) for States without an Enforcement Program (as of March 2013)				
State	**Property Damage**	**Fatalities**	**Injuries**	**Total Societal**
Alaska	$88,542	$0	$53,463	**$142,004**
Colorado	$521,736	$379,167	$588,088	**$1,488,990**
Michigan	$417,221	$4,170,833	$320,775	**$4,908,830**
Mississippi	$69,894	$0	$71,283	**$141,177**
Montana	$98,294	$379,167	$89,104	**$566,565**
North Carolina	$233,638	$379,167	$196,029	**$808,833**
Ohio	$790,857	$2,275,000	$552,446	**$3,618,303**
Oklahoma	$458,006	$1,895,833	$106,925	**$2,460,765**
West Virginia	$28,479	$379,167	$196,029	**$603,675**
Total	**$2,706,666**	**$9,858,333**	**$2,174,142**	**$14,739,141**

PHMSA has qualified inspectors to investigate pipeline excavation incidents because it already enforces excavation damage regulations for pipeline operators and their contractors, and the agency intends to investigate all incidents in States without pipeline excavation damage enforcement programs. Therefore, PHMSA believes that its third party excavation damage enforcement program would be at least as effective (63%) as the three States identified above that instituted enforcement programs. However, PHMSA acknowledges that there is variability across States in State laws, population densities, rates of excavation, and density of pipeline infrastructure, which may lead to a lower effective rate than the three States analyzed above. In addition, other factors could have contributed to at least some of the decrease in incidents. Accordingly, PHMSA has also analyzed more conservative effective rates of 47.25% (75% of the States' rate of 63%) and 31.5% (50 % of the States' rate of 63%). The table below shows that the rulemaking would be beneficial to society and cost effective when compared to all three effectiveness rates.

State	Reduction in Annual Societal Costs	Reduction in Annual Societal Costs at Selected Effectiveness Rates		
		63%	47.25%	31.5%
Alaska	$142,004	$89,463	$67,097	$44,731
Colorado	$1,488,990	$938,064	$703,548	$469,032
Michigan	$4,908,830	$3,092,563	$2,319,422	$1,546,281
Mississippi	$141,177	$88,942	$66,706	$44,471
Montana	$566,565	$356,936	$267,702	$178,468
North Carolina	$808,833	$509,565	$382,174	$254,783
Ohio	$3,618,303	$2,279,531	$1,709,648	$1,139,765
Oklahoma	$2,460,765	$1,550,282	$1,162,711	$775,141
West Virginia	$603,675	$380,315	$285,236	$190,157
Total	**$14,739,141**	**$9,285,659**	**$6,964,244**	**$4,642,829**

Comparison of Costs and Benefits of Alternative 2

The total first year costs of this rulemaking action is estimated to be $658,145 ($495,000 + $163,145). The following years the costs are estimated to be approximately $183,145 ($20,000 + $ 163,145) per year. The total cost of this alternative over ten years, with a 3% discount rate is $2,084,132 and at a 7% percent discount rate is $1,720214. The average annual benefits of this alternative range from $4,642,829 to $14,739,141. Evaluating just the lower range of benefits over 10 years results in a total benefit of over $40,790,000, with a 3% discount rate, and over $31,150,000, with a 7% discount rate.

As can be seen from the above analysis, the estimated benefits of this alternative far outweigh the relatively minor costs. Another way to examine the potential benefits of this rule is to examine all excavation damage incidents that have been reported to PHMSA. As previously stated, from 1988 to 2012, 1,678 excavation damage incidents occurred killing 188 people and causing 723 people to receive injuries that required hospitalization on all PHMSA regulated pipelines. These incidents also caused an estimated $474,759,544 in property damage. From 1988-2012, the average reportable incident caused $282,930 in property damage alone.

Therefore, if this rulemaking action prevents just one average reportable incident from occurring per year, this alternative is cost beneficial.

3. **Establish stringent Federal requirements for State excavation damage prevention enforcement programs and enforce those requirements against excavators where the States do not meet the stringent Federal excavation damage prevention requirements.**

Under this alternative, PHMSA would develop criteria and procedures more stringent and detailed than those described in alternative 2. In addition to the requirements in alternative 2, PHMSA would establish evaluation criteria that dictate pipeline location marking requirements, excavation ticket content and life, excavation tolerance zones, positive response requirements, one-call center operation, etc. States with lesser requirements than the Federal requirements could be found inadequate, which would require PHMSA to monitor for and enforce the Federal excavation damage prevention requirements in those States.

Congress authorized PHMSA to undertake this rulemaking action in Section 2 of the PIPES Act of 2006. PHMSA's objective is to initially accept a State's excavation damage enforcement program and to work with the State over time to make that State's excavation damage prevention enforcement program more effective. Federal enforcement is not intended to be permanent and is instead intended to provide incentive for States to develop and implement adequate programs.

While this alternative would provide the most oversight and might decrease the risk of excavation damage to pipelines, it would also diminish States' ability to implement damage prevention programs that suit each State's geographic, demographic, natural, and political environments. This alternative would require that PHMSA allocate more resources for excavation damage prevention enforcement than would be required in alternative 2. Because

Congress only provided the authority to PHMSA to enforce excavation damage programs where a State has no such effective program, under this alternative many, if not all, States would be deemed inadequate. PHMSA's intention is not to take over State enforcement programs because the agency believes States are best suited to oversee excavation damage prevention enforcement programs. Their excavation damage prevention enforcement programs include many types of underground facilities, beyond pipelines PHMSA regulates, such as water and wastewater pipelines, underground power, telecommunication, cable, and other lines. Therefore, PHMSA believes that initially establishing stringent Federal requirements would not be in the best interest of the public safety or accomplish the intent of this rulemaking action in States that already have some kind of excavation damage enforcement program. For the above reasons, this alternative is not considered for further development in this analysis.

Decision

For the reasons discussed above, PHMSA is not considering alternatives 1 and 3. Under alternative 2, PHMSA will enforce a minimum Federal safety requirement against any excavator who violates applicable damage prevention requirements in a State with an excavation damage prevention enforcement program determined to be inadequate. When excavators notify the one-call centers of their intent for excavation, the one-call centers notify underground facilities operators. Then, the underground facilities operators provide the locating service at no cost to excavators. Therefore, at a minimum, third party excavators must utilize the one-call notification system before they start excavation work. Requiring all excavators to use established one-call notification systems before excavation work is performed helps to decrease one of the major causes of serious pipeline failures. By decreasing this form of pipeline failure, PHMSA is also able to reduce the directly associated deaths and injuries as well as the costs and inconvenience a

pipeline failure creates in terms of personnel resources to repair the pipe, environmental damage from leakage, cost to repair the pipe, and property damage in the area of the failure.

Attachment A

Comments on the Regulatory Analysis and Notices

Association of American Railroads (AAR) stated that the Preliminary Regulatory Evaluation errs in stating that the NPRM would not impose any new costs on excavators because AAR believes that railroads do not routinely contact one-call centers for the constant maintenance-of-way work undertaken along their 140,000 miles of right-of-way; therefore, there would be a significant cost to the railroads, the call centers, and utilities if such calls were required. AAR stated that PHMSA has not shown a safety benefit from requiring railroads to participate in one-call systems for activities that pose no threat to underground pipelines. AAR stated that from a cost-benefit perspective, it makes no sense to require railroads to notify one-call centers for routine maintenance-of-way activities.

Response

PHMSA will be considerate of existing exemptions in State damage prevention laws. This includes exemptions for railroads. PHMSA's position is further clarified in the policy in the preamble of this final rule.

CenterPoint stated that one cost that PHMSA has not adequately addressed is the cost to administer a damage prevention program. Whether the State incurs the expense to meet the proposed criteria, or PHMSA takes over the enforcement, these costs are significant and would vary depending on the reporting system adopted. Therefore, CenterPoint requested that PHMSA predict the number of States expected to be held inadequate to determine the cost of this rulemaking action.

Response

For the purposes of this analysis, PHMSA estimated that 14 states will be deemed as having an inadequate enforcement program. PHMSA's preliminary cost/benefit estimates were based on assumptions that PHMSA would be enforcing its rules in States without excavation enforcement programs. With regard to the States already enforcing their excavation damage enforcement programs, this rulemaking action has no effect.

Iowa Utilities Board (IUB) stated that the evaluation for cost analysis states the proposed Federal excavation requirement mimics the excavation requirement in each State and does not impose any additional costs on regulators, but the proposed definitions of "excavation" and "excavator" in the NPRM would not mimic State law and would set different standards for when a notice of excavation is required than a State may require. IUB stated that the costs to excavators of contending with two sets of notice requirements are not reflected in this evaluation. IUB stated that the cost evaluation asserts that the NPRM does not mandate States to have adequate excavation damage prevention enforcement programs. IUB stated that perhaps it does not do so explicitly, but it certainly attempts to do so implicitly, as grant penalties are proposed for States without adequate enforcement in § 198.53. In addition, IUB stated that PHMSA's data stated that an effective rate for Federal enforcement of even 50 percent of the State success rate is over-optimistic; that the 63 percent excavation damage incident reduction rate the evaluation attributes solely to State enforcement, with no consideration of other factors, is exaggerated; and that certain costs were omitted. IUB believes that whether proper consideration of these issues would cause the benefit/cost ratio to become unfavorable is unclear, but the 19-to-1 ratio stated in the rulemaking preamble is certainly highly inflated.

Response

In the preamble of this rule and the policy pertaining to how Federal enforcement will be applied, PHMSA clearly states that PHMSA does not intend to create conflicting Federal and State standards applicable to excavators. PHMSA intends to consider a State's definitions of "excavation" and "excavator" when conducting Federal enforcement so as not to create conflicting standards. Also, as stated in the regulatory analysis document (same docket number), PHMSA agrees and has noted that all nine elements do contribute to the reduction of excavation incidents. As to the grant penalty, States that fail to establish an adequate enforcement program within five years of effective date of final rule may be subject to 4 percent reduction in base grant funding instead of the proposed 10 percent. With regard to the IUB's assertion that the impact on damage rates of enforcement is inflated, PHMSA has used the best available data that shows correlation between enforcement and reduced damages. While it is impossible to say with complete certainty that all reductions in damages are the result of enforcement alone, there still remains a clear 63% reduction in damages in Massachusetts after implementation of State enforcement. The reduction is strongly correlated with implementation of an enforcement program. In their comments, the IUB did not present specific information that contradicts PHMSA's assertion regarding this correlation.

The Kansas Corporation Commission (KCC) questions the accuracy of PHMSA's cost estimates as unrealistic and that they are based upon flawed assumptions. KCC stated that the NPRM states, "PHMSA believes that excavators will not incur any additional costs because the Federal excavation standard, which is also a self-executing standard, mirrors the excavation standard in each State and does not impose any additional costs on excavators." KCC stated that this assumption is demonstrably not true and may even conceal the full scope of PHMSA's NPRM. KCC stated that the cost-benefit analysis makes it sound like PHMSA is proposing only

to enforce State standards when the State's enforcement efforts are deemed inadequate. KCC stated that if the rulemaking were confined in that manner, then the KCC's views might be different.

Response

It appears to PHMSA that KCC has misunderstood the NPRM because PHMSA has no intention of enforcing the Federal excavation standard in States where the States exercise their enforcement authorities and their excavation damage enforcement programs have not been determined to be inadequate.

The National Association of Pipeline Safety Representatives (NAPSR) stated that PHMSA conducted a study that reviewed three States before and after they had enforcement programs and concluded that excavation enforcement programs might decrease pipeline excavation damages over time, and therefore, decrease fatalities, injuries, and property damage. NAPSR stated that for the States without enforcement programs, the NPRM does not indicate that PHMSA reviewed whether these States have experienced damage reduction on a year-to-year basis as the result of non-enforcement damage prevention initiatives—PHMSA only documents total damages and incidents over a 22-year period. In order to show the true advantages of a damage prevention enforcement program versus non-enforcement initiatives, NAPSR stated that it would be beneficial to show the damage trending rates of the States without enforcement programs. Also, NAPSR stated that PHMSA states that they intend to investigate all incidents in States without pipeline excavation damage enforcement programs. In the NPRM, PHMSA suggests that the 63 percent reduction is a helpful starting point on which to estimate the benefits of this final rule. NAPSR stated that PHMSA utilized three separate rates to conservatively evaluate the benefits of this final rule, but any significant reduction in pipeline

damages would depend upon implementation of not just occasional incident enforcement, but all nine elements.

Response

PHMSA agrees with NAPSR's assessment that all nine elements are very important in reducing pipeline excavation damage. However, this action is limited to enforcement. Therefore, available enforcement data was used to determine the effects of excavation damage enforcement prevention programs, and the results show that enforcement may be a major tool in decreasing underground pipeline excavation damages. Typically, States without enforcement programs do not collect information pertaining to damage rates. Therefore, it is impossible for PHMSA to analyze damage rates over time in States without enforcement programs and make a comparison to States with enforcement programs. PHMSA agrees with NAPSR's suggestion that this kind of analysis would be beneficial, but PHMSA asserts that this type of analysis is generally not feasible because of a general lack of consistent data for all States.