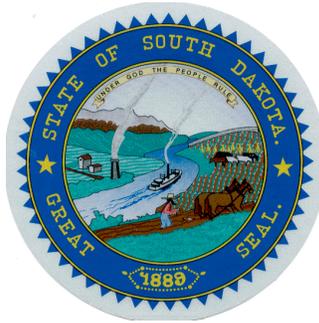


# South Dakota Public Utilities Commission



## Damage Prevention Program Review

**Prepared by:**



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Kendrick Consulting, LLC (KCLLC) was tasked to provide Damage Prevention consulting to the South Dakota Public Utilities Commission (PUC). The PUC proposal was originally dated June 25, 2010, and updated in July, 2010. The updated request for proposal reduced the scope of services to specifically address the initial PUC docket filing, PS10-002 (Pipeline Safety), dated June 3, 2010.

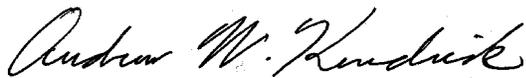
The overall goal of this important project was to insure the PUC meets the expectations of the Pipeline and Hazardous Materials Safety Administration (PHMSA) regarding pipeline and utility damage prevention effectiveness. According to the recent PHMSA Damage Prevention survey, South Dakota was deficient in the following three areas: 1) Employee training; 2) Public education; and 3) Data analysis. Therefore, the PUC solicited proposals from damage prevention experts to assist in the analysis of the three deficient areas, and to propose potential mitigative measures to be taken.

KCLLC was therefore selected to develop three alternate best-practice approaches for mitigating each of the three areas of deficiency from the PHMSA survey. The three best-practice approaches provided in this report were culled from a broad spectrum of options, including industry data (e.g., Pipeline Performance Tracking System), industry best practices (e.g., Common Ground Alliance and API RP-1162), best practices from other states, and our 10-years of experience in the pipeline industry.

Attachment 1 to this report includes the summary table with the three alternate best-practice approaches. Attachment 2 includes the Statewide Damage Prevention and One-call contact list utilized during the project.

KCLLC appreciates the opportunity to support the South Dakota PUC on this important project. Please do not hesitate to contact us if you should have any additional comments or questions regarding this report.

Thank you,



Andrew Kendrick  
- Principal, Kendrick Consulting LLC

## Project Background

The Pipeline Inspection, Protection, Enforcement and Safety (PIPES) Act of 2006 placed strong emphasis on addressing and improving state damage prevention programs. PHMSA’s position is that effective damage prevention programs should be developed and implemented at the state level, but understands that there is considerable variability among state damage prevention laws and related damage prevention programs. As such, PHMSA’s state Damage Prevention Program Characterizations (SDPPC) initiative evaluated state programs against the nine elements of effective damage prevention practices cited by PIPES. PHMSA’s goal was to gain a better understanding of the successes and challenges existing in state damage prevention programs, to identify where these programs might need improvement, and determine where PHMSA might focus their further assistance efforts.

The SDPPC initiative evaluated state damage prevention programs against the following nine elements:

- Element 1 - Enhanced Communication between Operators and Excavators
- Element 2 – Fostering Support and Partnership of all Stakeholders
- Element 3 – Operator’s Use of Performance Measures for Locators
- Element 4 – Partnership in Employee Training
- Element 5 – Partnership in Public Education
- Element 6 – Enforcement Agency’s Role to Help Resolve Issues
- Element 7 – Fair and Consistent Enforcement of the Law
- Element 8 – Use of Technology to Improve the Locating Process
- Element 9 – Data Analysis to Continually Improve Program Effectiveness

For each of the nine elements, PHMSA used the following five subjective criteria (derived from NAPS, CGA, EDPI, and others) to evaluate state implementation:

	4 - Largely implemented program element
	3 - Partially implemented or not fully developed program element; actions are underway or planned for improvements
	2 - Element partially implemented/marginally effective program element needs improvement; no actions underway/planned for improvement
	1 - Program element is not implemented and needs to be addressed
	0 - No information available or not applicable

## South Dakota Program Performance

According to the SDPPC initiative, South Dakota received a perfect score (“Largely Implemented”) for all but three of the nine program elements. South Dakota was, however, determined to be deficient on the following three elements:

Element No.	Element Description	Element Score
Element 4	Partnership in Employee Training	3 - 
Element 5	Partnership in Public Education	2 - 
Element 9	Data Analysis to Continually Improve Program Effectiveness	3 - 

For each of the nine overall elements, there were multiple questions used to determine the resulting element score. Table 1, on the following page, includes the specific questions that adversely impacted the three deficient South Dakota element scores.

As a result of the SDPPC findings, Docket PS10-002 was filed on June 3, 2010, granting the Pipeline Safety staff authority to hire an expert to determine if damage prevention efforts in South Dakota could be improved, with the specific focus being the three identified areas of deficiency.

Based on data from the Pipeline Performance Tracking System (PPTS), state One-Call agencies and One-Call Partners (e.g., pipeline companies and utilities) play the most important role in preventing excavation damage. Because of the significant costs and liabilities associated with mechanical damage, these entities work closely with the Common Ground Alliance (CGA) to develop damage prevention best practices. Ironically, the vast majority of pipeline and utility incidents result from a failure to follow one or more of the CGA Best Practices. Furthermore, because state One-Call agencies are in the best position to prevent the occurrence of damage to underground facilities, PHMSA has placed a significant amount of the responsibility upon them. It is important to note that the South Dakota PUC ranks in the top third of all state damage prevention agencies, and Docket PS10-002 is a testament to their desire for continuous improvement.

## Damage Prevention Program Analysis

Based on the request for proposal, KCLLC developed three alternate best-practice approaches for mitigating each of the three areas of deficiency from the PHMSA survey, as detailed on Attachment 1. The three alternative approaches were developed from the spectrum of options, primarily the best practices from other states. Additional consideration was given to industry data, industry best practices, and KCLLC’s experience in the damage prevention industry.

### Industry Data

There was a significant amount of industry data available utilized during the project evaluation. Examples include NAPSRS, CATS/PHMSA, and API/PPTS. As the PUC knows, NAPSRS is an organization of state pipeline safety personnel that serves to promote pipeline safety by working closely



with PHMSA, the industry and other stakeholder organizations. The Community Assistance and Technical Services (CATS) Program of PHMSA was established to help initiate and facilitate discussions between state damage prevention stakeholders who may be exploring opportunities to strengthen their state programs. A critical aspect of safety is collecting and analyzing data on pipeline incidents. As such, the API collects and analyzes detailed spill data through the voluntary Pipeline Performance Tracking System (PPTS), which has collected spill data since 1999 and includes operators representing 85% of regulated pipeline miles. Since 2008, PPTS has issued four Advisories related to damage prevention.

### State Best Practices

We feel that state best practices are one of the best sources of data that for this project. The States of Arizona, Georgia, Louisiana, Maine, Minnesota, New Hampshire, Vermont, and Virginia had no areas of deficiency on their SDPPC questionnaire. Best practices from these and other states were evaluated during the project. As an example, the State of Maine's MUST group is largely focused on damage prevention training, being similar to a regional CGA partner by involving a wide range of damage prevention stakeholders. For this and other reasons, Maine scored high on elements related to Employee Training. Such lessons learned by these and other states were therefore evaluated during this project, understanding however, that the unique characteristics of South Dakota may make implementation of other state activities inappropriate.

### Industry Best Practices

Industry best practices are an additional source of valuable data that was researched for this project. Example sources include the Common Ground Alliance, NUCA, NULCA, and API RP 1162. The Common Ground Alliance (CGA) is arguably the leading industry organization in the fight to reduce damages to underground facilities. In March 2010, the CGA published Best Practices Version 7.0, containing an updated set of Practice statements and supporting information. These Best Practices, as well as other CGA data, were valuable information during the analysis of the deficient program elements. NUCA's goal is to improve the operational proficiency and financial performance of its member companies by providing support services focused on industry-wide issues related to underground activities. Similarly, NULCA is an organization of contract locators, facility owners, one-call centers, excavators, and industry suppliers that share a common interest in safety and damage prevention. The guidelines in API RP 1162, Public Awareness Programs for Pipeline Operators, 1st Edition, establish the minimum criteria for Operator's Public Awareness programs, and were incorporated by reference into 49 CFR 192.616 for natural gas pipelines and 149 CFR 195.440 for hazardous liquids pipelines. The 2nd Edition, due out this year, can be optionally adopted by operators, but will not supersede the 1st Edition in the regulatory citations.

### Consultant Experience

KCLLC's 10-years of experience in the pipeline industry has provided us with a wealth of cross-industry experience as it relates to damage prevention and public awareness. Working closely with pipeline and utility operators, locators, subject matter experts, state and Federal regulators, and one-call support contractors, KCLLC has developed API 1162-compliant Public Awareness programs, supported numerous stakeholder mail-out programs, and analyzed damage prevention and public awareness program effectiveness for liquid and gas pipeline operators. KCLLC has a broad range of experience with the design and implementation of comprehensive damage prevention risk models involving multiple, interactive data sets and spatial data analysis using GIS and mapping systems. Example data sets include depth of cover, wall thickness, diameter, encroachment activity, excavation activity level, land use, soil

type, one-call effectiveness, operator qualifications, line locating methodologies, line crossing data, failure history, etc.). Furthermore, KCLLC has evaluated numerous client implementations by third-party contractors/software providers such as The Pipeline Group, IRTH Solutions, Celeritas Technologies, and Petris Technology, Inc.

KCLLC understands that South Dakota is unique in many ways, not the least being sparse population, variable terrain, and utility density. For example, it is relevant to this project that South Dakota is ranked fifth-lowest in the nation in both population and population density, and that approximately 20% of the population is over the age of 65. Furthermore, according to the 2008 South Dakota Underground Pipeline Task Force, there were approximately 14 covered pipeline companies operating in South Dakota, as well as approximately 1,458 miles of natural gas transmission pipelines, 2,800 miles of gas distribution pipelines, 760 public water pipeline systems, 22 miles of crude oil pipelines, and 593 miles of refined product transmission pipelines. These unique characteristics may make implementation of all nine PHMSA elements impractical, inappropriate, and/or not cost effective. We understand, however, that the PUC's partnership with PHMSA requires they fully evaluate and document the analysis of each issue.

## **Discussion**

### **Element 4 - Partnership in Employee Training**

Best-practice states such as Arizona, Maine, Georgia, Michigan, Virginia and several others have all scored well on Element 4. Upon review of the various state employee training programs, it is evident that, in addition to the one call center, an active and visible training program must be in place to assist the facility owners/operators, excavators, locators, and other interested stakeholders. The one-call centers participate in promoting and providing training to locators, excavators and other stakeholders in the one-call process. They are not, however, the only mechanism to provide employee training. To assist with employee training, the PUC could choose to designate a "Training Coordinator", establish a non-profit Coordinating Council or Damage Prevention Consortium, and/or contract with a third-party training company, all of who would be accessible to stakeholders, work with stakeholder representatives to develop training materials, and would schedule training courses across the state. This is a significant component of the employee training process that other best-practice states have established, and where South Dakota could benefit greatly.

For example, Georgia has developed the Georgia Coordinating Council (GUCC) to bring all parties together with many chapters around the state. These local groups come together in the spring and fall for statewide meetings to discuss topics of interest to the group. Stakeholder training is accomplished through the Public Service Commission (PSC) as well as liaisons from the one-call center. In Maine, in addition to state investigators, a group called, Managing Underground Systems Training (MUST), facilitates employee training. The training is supported with financing generated from penalty money. Again, these sessions are offered to operators at a convenient time of the year and at locations statewide. Often, the training is tied in to a breakfast or lunch invitation to attract a larger attendance. This approach has been most popular. Nevada has improved the effectiveness of their statewide stakeholder forum through the Nevada Regional Common Ground Alliance (NRCGA) partnership. The PUCN Regulatory Operations Staff, in conjunction with the stakeholder-training program, developed by the NRCGA Education and Training Subcommittee, to oversee and maintain compliance with coursework covering hundreds of employees and the feedback has been most positive. The Iowa Pipeline Association programs for first responders, in cooperation with the one-call center, and the Common Ground Iowa field workshop event hosts meetings and annual employee training. Alabama does not have a specific training program, but the Public Service Commission does have a "Training Coordinator" who is accessible to operators to present training sessions.

Once a training program option has been selected and designed, the state must make it visible and easily accessible to its' stakeholders. The states with the "highly effective" ratings all have exceptional website and on-line visibility. Arizona Blue Stake, Inc. (ABS), for example, is a non-profit communication center which performs excavation notification services and stakeholder education. Blue Stake (ABS) has class-training packets on-line thru E-stake and Blue Stake News Events and Video References are available to all stakeholders. In Virginia, "Miss Utility-What's New" provides a similar service through radio broadcasts and an employee newsletter, the Virginia Utility Protection Service (VUPS). These can be found on their website, as well as on Twitter and Facebook.

In conclusion, South Dakota may choose to improve their employee training program for operators, excavators and locators by considering one or more of the recommended options for program enhancement, as delineated in Attachment 1. It should be noted that for some subject areas, the options provided are mutually exclusive alternatives, and thus the PUC may choose the best option to meet their needs. Others are additive alternatives, whereby PUC can select more than one options to achieve their desired goal.

Input from any or all of the recommended options under Element 4 would improve the present PHMSA rating. Training curricula are currently prepared, available and periodically reviewed, but are only partially implemented or not fully developed. The idea of a Training Coordinator or third-party support agent would remove sole responsibility from the South Dakota PUC by engaging outside assistance. This would improve performance, reduce training time and effort, and support the evaluation process of the training programs. Using models already in place by other best-practice states, as outlined in the above discussion, would be a cost-effective approach to meet the South Dakota's objectives.

#### **Element 5 - Partnership in Public Education**

"Research shows that a message must be heard multiple times for it to effectively register with an audience. It is therefore important to coordinate efforts to effectively and efficiently communicate repetitive and consistent messages to target audiences, especially during excavation sessions" (PHMSA Damage Prevention Assistance Program (DPAP): Strengthening State Damage Prevention).

KCLLC understands that a successful employee training and public awareness program must be integrated with on-line technology, printed materials and word of mouth advertising. It is critical when marketing a product to utilize a variety of sources. For example, other best-practice states turn to Twitter, Blogger, Facebook, community organizations, local businesses, and other local venues such as "Farmfest" and "AgExpo". Teaming up with local businesses such as Wal-Mart and Target during high volume turnout days or special events, to distribute printed materials and educate the public, has been highly successful with other state damage prevention programs. Both Michigan (MISS DIG) and Minnesota (GOPHER State) post on-line industry events and calendars, solicit opportunities for advertising, and provide a library where the public can purchase or borrow materials. Acronyms, initialisms and mascots can be very influential, and are a catchy method to trigger recall and public awareness. Promoting damage prevention awareness through flyer handouts and promotional materials at community events and distributing printed materials (coloring books, magnets) at schools are all ways in which best-practice states increase and educate the public in pipeline damage prevention.

Effective public education is primarily about boosting public/community awareness. Public Service Announcements (PSAs) through radio, television and print media are a common approach in other states. Fun, cool, creative ad campaigns don't have to be costly or labor intensive. Best-practice states frequently utilize trade shows, expos, town fairs, and special events to distribute promotional materials, and other give-away items as a proven way to promote your product. Equipment rental companies, heavy equipment dealers, fencing companies, agricultural supply stores, etc. are other targeted opportunities to inform the public. Damage prevention, if packaged and marketed appropriately, has an excellent

potential to appeal to a broader community and heighten public awareness. Such Public Education methods are generally consistent with the CGA Best Practices, and are considered very effective.

In summary, public education programs are critical to promote compliance with damage prevention policy. Implementation options could include a non-profit Coordinating Council or Damage Prevention Consortium acting as a single entity, or a private Public Relations firm tasked with promoting comprehensive and appropriate programs to educate stakeholders. Another option would be to designate a Marketing Coordinator at the PUC, responsible for promoting comprehensive and appropriate education programs. Furthermore, South Dakota PUC could establish strategic relationships in an effort to leverage common resources and/or partner with local and/or statewide associations, organizations, and agencies. Examples include the South Dakota Agra-Business (AgExpo), the Local Emergency Planning Committee (LEPC), the Oil Spill Response Organizations (OSRO), and the South Dakota Pipeline Association. South Dakota PUC could also establish a partnership with neighboring states to further damage prevention education efforts. An example would be DigSafe New England, encompassing Maine, Massachusetts, New Hampshire, Vermont, and Rhode Island.

### **Element 9 - Data Analysis to Continually Improve Program Effectiveness**

Our research suggests that for all states, data analysis and program evaluation is the most challenging area of the 9 Elements. Programmatic reviews are most often performed by the One Call Centers, and/or utilize the Damage Information Reporting Tool (DIRT) data. In use since 2003, the CGA's objective DIRT process provides a standardized approach and data set to perform data analysis and program evaluation. South Dakota has only partially implemented this program element. We feel that full implementation and enforcement of DIRT reporting would provide significant value during program review. Another alternative would be to develop a South Dakota-specific damage reporting form similar to the PHMSA 7000-series reports. The form would be required to be submitted annually by the major utility owner/operators. In addition, South Dakota could collect and analyze less objective program performance data such as areas with high violation rates, penalties collected, etc.

Many best-practice states have a tight link and feedback loop between their program review/improvement process and their public awareness/employee training activities. Thus program performance information is a substantial component of their public awareness/employee education programs, and those programs provide immediate feedback to the program improvement activities.

Several states (e.g., Alabama, Connecticut and Georgia), monitor repeat violators through a database that is queried and then graphed to show trends in areas of reported violations, penalties collected, and numbers attending education classes/seminars. Some states monitor damage statistics on a monthly basis, with others on a quarterly basis, reviewing trends and identifying areas of improvement. For the Georgia PSC, enforcement is a significant component of their damage prevention program function. As such, metrics related to enforcement actions are used to measure performance. In Maine, training/education sessions and seminars are an opportunity to ask questions regarding program performance and to collect relevant data. Nevada measures program performance through a review of damage reports provided by major utility operators, and reviews the compliance data collected by the Nevada PUC. Nevada's Regional CGA stakeholder meetings, and other similar forums, are additional opportunities they utilize to accumulate data.

South Dakota PUC could also partner with a specific group of states that have a similar geographic, topographic, and socio-economic profile, such that relative performance could be established for the group, and mitigative actions tailored to the specific needs of these states.

## Conclusions

The overall goal of this project was to assist the PUC in meeting PHMSA expectations regarding damage prevention effectiveness in the areas of employee training, public education, and data analysis. In order to gain a better understanding of the successes and challenges existing in South Dakota's damage prevention programs, KCLLC reviewed South Dakota rules, damage prevention requirements, and one-call laws. KCLLC then researched other best-practice states to evaluate their damage prevention programs in order to select candidate measures appropriate for South Dakota. The resulting alternate best-practice approaches for each of the three areas of deficiency are detailed on Attachment 1. It should be noted that for some subject areas, the options provided are mutually exclusive alternatives, and thus the PUC may choose the best option to meet their needs. Others are additive alternatives, whereby PUC can select more than one options to achieve their desired goal.

Regarding Element 4, training curricula are currently prepared, available and periodically reviewed, but are only partially implemented or not fully developed. Establishing a Training Coordinator or utilizing a third-party support agent would remove sole responsibility from the South Dakota PUC by engaging outside assistance. Using this best-practice approach would be a cost-effective method for South Dakota to meet PHMSA expectations. For Element 5, designating a Marketing Coordinator, establishing a non-profit Damage Prevention Consortium, or contracting with a Public Relations/Damage Prevention Organization would significantly enhance existing public education efforts. South Dakota's public awareness program should integrate on-line technology with printed materials and word of mouth advertising. It is critical when marketing a product to utilize a variety of venues. Finally, KCLLC feels that full implementation and enforcement of DIRT reporting would provide significant value to South Dakota's program review and improvement initiatives.

## **Attachment 1**

### **South Dakota PUC and the Nine Elements**

The PIPES Act of 2006 placed strong emphasis on addressing and improving state damage prevention programs. PHMSA's position was that effective damage prevention programs should be developed and implemented at the state level. However, there is considerable variability among state damage prevention laws and related damage prevention programs.

PHMSA sought to characterize and document the states' damage prevention programs relative to the nine elements of effective damage prevention programs defined in the PIPES Act. PHMSA's goal in this effort was to gain a better understanding of the variability in state damage prevention programs across the United States at a level of detail that will assist PHMSA with making decisions regarding where and how to apply resources. PHMSA created the following relative ranking system as the foundation of the state damage prevention program characterizations.

The purpose of this effort was not to assign scores to states' damage prevention programs or to compare state programs against each other. Rather, this effort was designed to illustrate damage prevention program strengths and areas that could use improvement relative to the nine elements. Thus, the characterization for each criterion was indicated by the following symbols:

-  = Largely developed program element
-  = Partially implemented or not fully developed program element; actions are underway or planned for improvements
-  = Partially implemented or marginally effective program element that needs improvement; no actions are currently underway or planned for improvements
-  = Program element is not implemented and needs to be addressed
-  = No information available or not applicable

Kendrick Consulting LLC developed three alternate best-practice approaches for mitigating each of the three areas of deficiency from the PHMSA survey. Consideration was given to industry data, industry best practices, best practices from other states, and our experience in the damage prevention industry.

- Element 4 - Effective Employee Training
- Element 5 - Public Education
- Element 9 - Program Review

## Element 4 – Effective Employee Training

**Overall PHMSA Characterization:**     

*"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."*

	<b>Characterization Criteria</b>						<b>SD-PUC Notes</b>
<b>4.a</b>	A multi-stakeholder training committee or equivalent has been established, with participation by the one call center, facility owners/operators, the state enforcement agency, excavators, locators, and other interested stakeholders. Input from the committee is factored into the identification of training needs and the development and implementation of employee training programs for operators, excavators and locators. Damage prevention program training needs are systematically and periodically identified. (NAPSR; PHMSA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No plans to do this – SD feels this is a company responsibility and would require legislative change. Locate companies have very detailed training programs.
	<b>Option A</b> – Bring all stakeholders together to develop a training program through a non-profit Coordinating Council or Damage Prevention Consortium. The consortium frequently has local chapters around the state that are open to participation by utility owner/operators, utility contractors, contract locators and enforcement. Local projects, damage problems, and training are discussed at these meetings as well as programs that discuss the damage prevention law and any updates to the law. The consortium polls its' members for input, and has statewide meetings once or twice a year to discuss topics of interest to the group. Damage prevention professionals representing the federal and state level are involved in these statewide meetings.						
	<b>Option B</b> – Hire a third-party training company to identify stakeholders, schedule stakeholder-training meetings, and gather input to identify current and future training needs. The company would report the training metrics and feedback to the PUC.						
	<b>Option C</b> – Identify a "Training Coordinator" who is accessible to all stakeholders, works with stakeholder representatives to develop training materials, and would schedule training courses across the state, usually in the Spring before construction season.						

<b>4.b</b>	Training curricula are prepared, readily available, and periodically reviewed for needed changes. (PHMSA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Briefly reviewed this year during the inspections. Based on what the companies are doing for OQ. Call Center is responsible for excavator training.
<p><b>Option A</b> – The consortium would develop the training curricula and materials, make the materials readily available, and work with the PUC and stakeholders to periodically review and update the materials.</p>							
<p><b>Option B</b> – As with the consortium, the third-party training company would develop the training curricula and materials, make the materials readily available, and work with the PUC and stakeholders to periodically review and update the materials.</p>							
<p><b>Option C</b> - The Training Coordinator would be responsible for developing the training curricula and materials, make the materials readily available, and work with stakeholders to periodically review and update the materials. Materials could be developed as self-paced, on-line content and/or Webinars to reduce training time and effort.</p>							
<b>4.c</b>	Employee training programs and the development process for these programs are periodically evaluated for effectiveness and needed changes. (PHMSA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same as 4b
<p><b>Option A</b> – The consortium would periodically evaluate the effectiveness of the training programs and refine the program as needed. For example, trainees could be asked to complete a survey at the conclusion of training in order to solicit feedback used to improve the training programs.</p>							
<p><b>Option B</b> – The third-party training company would periodically evaluate the effectiveness of the training programs and refine the program as needed. For example, trainees could be asked to complete a survey at the conclusion of training in order to solicit feedback used to improve the training programs.</p>							
<p><b>Option C</b> - The Training Coordinator would periodically evaluate the effectiveness of the training programs and refine the program as needed. For example, trainees could be asked to complete a survey at the conclusion of training in order to solicit feedback used to improve the training programs.</p>							

<b>4.d</b>	For all stakeholders, Employee training programs and needs are tailored to available data trends relative to performance, complaints, near misses or damage incidents and, if necessary, in response to specific incidents. (PHMSA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<p><b>Option A</b> – The consortium would identify where the performance gaps are, and tailor the training program and materials to account for these data trends. For example, additional training might be necessary for particular geographic areas or specific types of incidents. Violators would be required to attend training, including potentially paying for the training.</p>							
<p><b>Option B</b> – The training company, working with data collected by the PUC, would identify where the performance gaps are, and tailor the training program and materials to account for these data trends. For example, additional training might be necessary for particular geographic areas or specific types of incidents. Violators would be required to attend training, including potentially paying for the training. Money collected on penalties could be used to help fund the training company.</p>							
<p><b>Option C</b> – The Training Coordinator, would identify where the performance gaps are based on state-collected data, and tailor the training program and materials to account for these data trends. For example, additional training might be necessary for particular geographic areas or specific types of incidents. First-time violators would be offered the opportunity of attending training instead of paying funds.</p>							
<b>4.e</b>	A training calendar is maintained and training is scheduled in support of the needs of stakeholders. (NAPSR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<p><b>Option A</b> – The consortium, working with the various stakeholders, would develop the training calendar based on stakeholder needs and schedule training.</p>							
<p><b>Option B</b> – The PUC will work with the training company to develop the training calendar based on stakeholder needs and schedule training.</p>							
<p><b>Option C</b> – The PUC-developed, self-paced training would be available year round, with Webinars scheduled monthly or as appropriate for the stakeholder needs. The coordinator will develop specific dates based on geographic area and/or stakeholder type. In addition, the training coordinator could provide site-specific training as a service. The coordinator would post the training schedule for the Webinars on the PUC web site.</p>							
<b>4.f</b>	Training records for individuals are maintained. (PHMSA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	OQ plan for operators; other stakeholders not known
<p><b>Option A</b> – The consortium, working with the various stakeholders, would develop a records management system and will maintain records of all training.</p>							
<p><b>Option B</b> – The training company would be paid to develop a records management system. At the end of the year, the company will provide all training records to the PUC.</p>							
<p><b>Option C</b> – The PUC training coordinator would develop a records management system and will maintain records of all training.</p>							

## Element 5 – Public Education

**Overall PHMSA Characterization:**     

*"A process for fostering and ensuring active participation by all stakeholders in public education for damage prevention activities."*

	<b>Characterization Criteria</b>						<b>SD-PUC Notes</b>
<b>5.a</b>	Public education programs are used to promote compliance. A single entity is charged to promote comprehensive and appropriate programs to educate all stakeholders about the existence and content of the damage prevention laws and regulations. This is not meant to discourage individual stakeholders from providing educational programs. (CGA Best Practices v. 6.0, Best Practice 7-1 A)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Annual meetings – open to the public. No single entity. Individual groups or partnerships with PUC.
	<b>Option A</b> – A non-profit Coordinating Council or Damage Prevention Consortium would act as the single entity charged with promoting comprehensive and appropriate programs to educate stakeholders about the existence and content of the damage prevention laws and regulations.						
	<b>Option B</b> – A private Public Relations firm would be tasked with promoting comprehensive and appropriate programs to educate stakeholders about the existence and content of the damage prevention laws and regulations.						
	<b>Option C</b> – The One-Call Center would be tasked with promoting comprehensive and appropriate programs to educate stakeholders about the existence and content of the damage prevention laws and regulations.						
	<b>Option D</b> – A Public Education coordinator at the PUC would be tasked with promoting comprehensive and appropriate programs to educate stakeholders about the existence and content of the damage prevention laws and regulations.						

<b>5.b</b>	The state damage prevention education program establishes strategic relationships in an effort to leverage common resources. These relationships are established between governmental agencies, emergency responders, and associations of all types, media outlets, grass roots organizations, and others and involve partnering to further damage prevention education efforts. (CGA Best Practices v. 6.0, Best Practice 8-8)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No formal structure. Ongoing relations, nothing formalized.
<b>Option A</b> – South Dakota PUC could partner with local and/or state-wide associations, organizations, and agencies such as the South Dakota Agra-Business (AgExpo), the Local Emergency Planning Committee (LEPC), and Oil Spill Response Organizations (OSRO), South Dakota Pipeline Association.							
<b>Option B</b> – South Dakota PUC could partner with local vendors and suppliers to promote Damage Prevention awareness and hand out flyers and promotional materials. Examples would be equipment rental companies, heavy equipment dealers, fencing companies, agricultural supply stores, etc. DigSafe New England.							
<b>Option C</b> – South Dakota PUC could partner with neighboring states to further damage prevention education efforts. An example would be DigSafe New England, encompassing Maine, Massachusetts, New Hampshire, Vermont, and Rhode Island.							
<b>5.c</b>	The state damage prevention education program includes a comprehensive, strategic marketing/advertising plan that focuses on setting realistic goals and allocating sufficient resources required to achieve these goals within specified timeframes. (CGA Best Practices v. 6.0, Best Practice 8-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Option A</b> – Hire a third-party company to develop most appropriate marketing campaign within a set budget							
<b>Option B</b> – Develop an in-house marketing plan that includes combination of options, such as public announcements on radio/TV, educational and promotional stands at community events such as county fairs, agricultural expositions, etc., distribute printed materials (coloring books, magnets) at schools, enhance website appearance, create a “mascot” to facilitate public recognition, especially within younger audiences (State animal coyote could be used for that purpose)							
<b>Option C</b> – Partner with One Call Center and South Dakota Pipeline Association to join/support their existing marketing efforts							

<b>5.d</b>	Damage prevention stakeholders, including facility owners/operators, locators, excavators, government representatives, and others use field representatives to provide education anytime and anywhere it is needed. (NAPSR)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	People do this, but they do not have information on this data point.
<b>Option A</b> – Establish communications with facility owners/operators, locators, excavators, government representatives to identify to what extent they are using field representatives in their public education efforts. This could be accomplished during annual meeting.							
<b>Option B</b> – Mandate through legislature that all utility operators have field representative available to conduct education anytime and anywhere it is needed							
<b>Option C</b> – Provide incentives (e.g. reduced membership fees to Damage Prevention Consortium) to facility operators or reduce/eliminate penalties for violators who have a designated field representative and conduct routine public education activities.							
<b>5.e</b>	The state damage prevention education program includes identification of target audiences and their individual needs. (CGA Best Practices v. 6.0, Best Practice 8-2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Option A</b> – Hire a third-party company to identify target audiences as part of marketing campaign (see 5c above)							
<b>Option B</b> – Establish an in-house Committee tasked to identify target audiences and their individual needs. This will be used in development of marketing campaign (see 5c above)							
<b>Option C</b> – Use the experience and insights gained from developing and implementing the training program (Element 4) to identify target audiences and their individual needs.							
<b>5.f</b>	The one call center has a documented, proactive public awareness, education and damage prevention program. (CGA Best Practices v. 6.0, Best Practice 3-1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	This is not documented. Board assumes this role. Center in Pittsburg and Cedar Rapids.
<b>Option A</b> – Work with the One-Call center to assist them in documenting their damage prevention program. It should be noted that this is somewhat redundant, as One Call Center is a part of PUC, therefore marketing campaign and damage prevention program in items 5a through 5c will address 5f as well.							
<b>Option B</b> – Hire a third-party company to evaluate and document the One Call center’s damage prevention program							
<b>Option C</b> – Task the Board to document their program							

## Element 9 – Damage Prevention Program Review

Overall PHMSA Characterization:     

*"A process for review and analysis of the effectiveness of each program element, including a means for implementing improvements identified by such program reviews."*

	Characterization Criteria						SD-PUC Notes
<b>9.a</b>	Data analysis and program evaluation are used to support the effectiveness of the program and the One Call law, identification and implementation of program improvements, such as process changes, enforcement actions, legislative actions, rulemaking/regulatory actions, and decisions regarding resource allocation. (PHMSA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Call Center data is used – track several data points through Call Center. Only missing piece is comprehensive damage data. No increase in complaints. DIRT is available and reporting encouraged.
	<b>Option A</b> – Utilize the CGA’s objective Damage Information Reporting Tool (DIRT), in use since 2003, to provide a standardized approach and data set to perform data analysis and program evaluation. DIRT reporting should be required by all owner/operators, locators, and excavators.						
	<b>Option B</b> – Collect and analyze less objective program performance data such as areas with high violation rates, penalties collected, number of stakeholders attending education programs, frequency of repeat violators, timeliness of marking, and after-hours contact availability.						
	<b>Option C</b> – Collect and review subjective program performance data utilizing new or existing public affairs/public awareness opportunities. The intent is to establish a consistent and structured dialog with Stakeholder subject matter experts (SMEs) at forums such as annual meetings, public awareness sessions, employee training courses, etc.						
	<b>Option D</b> – Develop a South Dakota-specific damage reporting form similar to the PHMSA 7000-series reports. The form would be required to be submitted annually by the major utility owner/operators. The form would be used to establish root-cause analysis of all damage incidents, including unauthorized digs and close calls.						
	<b>Option E</b> – Collect and analyze spatial program performance data utilizing a geographic information system (GIS), or similar mapping tool.						

<b>9.b</b>	The one call center establishes and monitors performance standards for the operation of the center, including average speed of answer, abandoned call rate, busy signal rate, customer satisfaction, locate request quality, and notification delivery. (CGA Best Practices v. 6.0, Best Practice 3-23)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>No response necessary. SD-PUC complies fully with this element.</b>
<b>9.c</b>	Facility owners/operators, locators, excavators, or stakeholders with an interest in underground damage prevention report damages to the CGA Damage Information Reporting Tool (DIRT) or equivalent. (CGA Best Practices v. 6.0, Best Practice 9-1; PHMSA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Not required it is voluntary.
<b>Option A</b> – Develop a South Dakota reporting standard such that DIRT reporting is not only encouraged, but rather that DIRT reporting is required by all owner/operators, locators, and excavators.							
<b>Option B</b> - Develop a reporting standard such that failure to report to DIRT is punitively addressed, including such follow-up actions as required training, fines, escalation for repeat offenders, etc.							
<b>Option C</b> – Require stakeholders to submit a report using an alternative reporting tool, as detailed in Options B-D on question 9.a (subjective data collection, required owner/operator reporting, etc.).							
<b>9.d</b>	Training and education on how and when to complete the damage reporting form (via DIRT or equivalent) is made available. (CGA Best Practices v. 6.0, Best Practice 9-8)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>No response necessary. SD-PUC complies fully with this element.</b>
<b>9.e</b>	The reported damages data is used to assess and improve underground damage prevention efforts. (CGA Best Practices v. 6.0, Best Practice 9-16)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Option A</b> – Only through full implementation of DIRT can accurate data analysis and program improvement be achieved. South Dakota would develop a what-if type of matrix linking certain DIRT metrics to pre-determined program improvement activities. This would standardize the approach to program improvement and provide justification for mitigative actions.							
<b>Option B</b> – Adopt an approach similar to the annual Performance Review required by pipeline operators in their Integrity Management Programs (Plan-Perform-Measure-Modify), utilizing either objective data such as DIRT metrics or more subjective data from stakeholders.							
<b>Option C</b> – Develop a tight link and feed-back loop between South Dakota’s program review/improvement process and new or existing public awareness and employee training activities. Program improvement information would be a substantial component of the public awareness/employee education programs, and those programs would provide immediate feedback to the program improvement activities.							

<p><b>9.f</b></p>	<p>Results of damage reports are quantified against a standardized risk factor. The risk factor considers a stakeholder’s exposure to potential damage. This risk factor may be based on factors such as the number of miles of line installed or the number of one call center notification tickets. For example, a risk factor may compare how many underground damages occurred in a certain time period versus the total number of notification tickets issued. (CGA Best Practices v. 6.0, Best Practice 9-20)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<p><b>Option A</b> – Develop very specific damage reporting metrics (lagging indicators) such as incidents per line mile, incidents per 100 locates, etc., such that South Dakota would be able to better evaluate a stakeholder’s exposure to potential damage, and thus focus resources in these areas.</p>							
<p><b>Option B</b> – Establish risk factors based on leading indicators (total number of notification tickets, marking response time, after-hour contact availability, increased education numbers, locates per line mile, etc.), South Dakota would be able to better evaluate overall program improvement without reliance on rare-event incident data.</p>							
<p><b>Option C</b> – Develop a less numerical approach to considering a stakeholder’s exposure to potential damage and the measurement of overall program improvement. This approach would utilize alternative/subjective data and stakeholder feedback to establish program-wide risk factors.</p>							
<p><b>9.g</b></p>	<p>Performance levels and trends are assessed against other organizations. (CGA Best Practices v. 6.0, Best Practice 9-21)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<p><b>Option A</b> – Utilize the Annual DIRT Report, to compare South Dakota performance to industry-wide damage prevention metrics. This would allow South Dakota to perform comparative analysis to the mature and consistent DIRT metrics.</p>							
<p><b>Option B</b> – Partner with a specific group of states that have a similar geographic, topographic, and socio-economic profile, such that relative performance can be established for the group, and mitigative actions focused on the specific needs of these states.</p>							
<p><b>Option C</b> – Utilize alternative industry data such as the Pipeline Performance Tracking System (PPTS), SGA, INGA, NAPSRS, etc. to perform comparative analysis.</p>							
<p><b>Option D</b> – Work with large, interstate operator to determine the effectiveness of South Dakota’s Damage Prevention efforts as compared to the other states that the operators are involved with. This would allow a comparative analysis independent of owner/operator-specific damage prevention methodologies.</p>							

<b>9.h</b>	The reported damages data (in whole or summarized) is made available to the public. (PHMSA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<b>Option A</b> – Make the reported damages data available to the public through South Dakota’s new or existing Public Awareness mechanisms such as the One-Call web site, PUC web site, etc.						
	<b>Option B</b> – Develop a Lessons Learned campaign utilizing South Dakota-specific or industry wide failure incidents. This would be a “don’t let this happen to you” approach that would assist in communicating the significant impacts that can result from poor practices.						
	<b>Option C</b> – Utilize the various data collection mechanisms detailed in Options B-D on question 9.a (subjective data collection, required owner/operator reporting, GIS mapping, etc.) to develop a South-Dakota-specific “DIRT Report”, and make this available to the various stakeholders during public awareness and employee education activities.						

**Attachment 2**  
**Statewide Damage Prevention Program**  
**Contact Information**

**Alabama**

<http://www.call811.com/>

Contact us:

Alabama Public Service Commission

Office: 334-242-5780

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Fax: 334-242-0687

Email: Administrator Gas Pipeline Safety—Wallace R. Jones, Sr.  
Wallace.Jones@psc.alabama.gov

**Arizona**

<http://www.azbluestake.com/>

Contact us:

Arizona Blue Stake, Inc.

Office: 602-659-7500

Fax: 602-659-7520

For Training class packets, links to the law, best practices and more email:  
Customer.Support@azbluestake.com

Email: Public Services Manager—Louise Panzer- louis.panzer@azbluestake.com.  
Sandra Holmes-Sandra.holmes@azbluestake.com

**Connecticut**

Contact us:

Connecticut Department of Public Utility Control

10 Franklin Square

New Britain, CT 06051

Phone: 860-827-2661

Email: PU Supervisor of Tech Analysis—Karl H. Baker- karl.baker@po.state.ct.us

**Georgia**

Georgia 811

1-800-282-7411

<http://www.georgia811.com/>

Contact us:

Georgia Public Service Commission

Pipeline Safety Office

244 Washington St. SW

Atlanta, GA 30334

Office: 404-463-6526; Fax: 404-463-6532

Email: Director, Pipeline Safety Office—Danny McGriff- danny@psc.state.ga.us  
Gary Mason-GaryM@psc.state.ga.us

## **Iowa**

Contact us:  
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Email: Mgr, Safety & Engineering Section—Donald J. Stursma, P.E.  
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## **Louisiana**

Louisiana One Call  
1-800-272-3020  
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Contact us:  
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Baton Rouge, LA 70804-9275  
Office: 225-342-9137; Fax: 225-342-5529

Email: Assistant Director of Pipelines—James M. Mergist- jamesm@dnr.state.la.us

## **Maine**

Contact us:  
Maine Public Utilities Commission  
18 State House Station  
Augusta, ME 04333-0018  
Phone: 207.287.5945  
Fax: 207.287.1039

Email: Dir. Safety and Security—Amy Mulholland Spelke- amy.spelke@maine.gov

## **Massachusetts**

Dig Safe  
1-888-344-7233  
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Contact us:  
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331 Montvale Ave  
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Public Relations—Lisa Powers- LPowers@digsafe.com  
Amy Worden- aworden@digsafe2.com  
Note: Lisa Powers is the PR person for Dig Safe New England-Ma, Me, NH, RI and Vt.

## **Michigan**

Miss Dig System, Inc.  
1-800-482-7171  
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Contact us:  
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3285 Lapeer Road West  
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Email: Damage Prevention Liaison—Eric Urbain- [eurbain@missdig.org](mailto:eurbain@missdig.org)  
Phone: 248-370-6424  
Damage Prevention Liaison—Robert Suits- [rsuits@missdig.org](mailto:rsuits@missdig.org)  
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## **Minnesota**

Gopher State One Call  
1-800-252-1166  
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Email: Dir of PR/Education—Jon Eisele- [JonEisele@occinc.com](mailto:JonEisele@occinc.com)  
651-681-7303

## **Nevada**

Public Utilities Commission  
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1150 East Williams St.  
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## **New Hampshire**

Dig Safe  
1-888-344-7233  
<http://www.digsafe.com>

Email: New Hampshire Program Manager—Randy Knepper- [Randy.Knepper@puc.nh.gov](mailto:Randy.Knepper@puc.nh.gov)

## **Virginia**

Virginia Miss Utility of Virginia

1-800-552-7001

<http://www.missutilityofvirginia.com/>

Contact us:

Virginia Utility Protection Service, Inc.

1829 Blue Hills Circle, NE

Roanoke, VA. 24012

Direct (540) 283-2521

Main (540) 985-9355 extension 2007

Email: Director Information Technology—Debbie Hofbauer- [dhofbauer@vups.org](mailto:dhofbauer@vups.org).

## **Additional States Contacted - No Response:**

- Alaska
- Colorado
- Indiana
- Missouri
- Nebraska
- New Jersey
- New Mexico
- Oregon
- Pennsylvania
- Rhode Island
- Texas
- Utah
- Vermont
- CUS Inc.
- OCC Inc.
- Sentinel USA