



RECOMMENDED PRACTICE FOR DAMAGE PREVENTION PROGRAMS

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SECTION ONE: INTRODUCTION

ABOUT THIS DOCUMENT

The purpose of this document is to provide minimum standards for the development of damage prevention programs (DPP) for petroleum and natural gas industry permit holders as required in the British Columbia Oil and Gas Commission's (BCOGC) regulations. The document is intended to form the basis of a program developed and implemented by permit holders that can be audited by the BCOGC.

These guidelines are also intended to provide advice and information to assist users in developing effective DPPs. Many facility owners impose stricter requirements on ground disturbance activities near their buried facilities. These guidelines are not necessarily specific to pipeline permit holders however this version identifies and includes requirements specific to pipelines.

ACKNOWLEDGMENTS

The document has been developed in consultation with the petroleum and natural gas industry through the Canadian Association of Petroleum Producers (CAPP) as well as through the Canadian Energy Pipeline Association (CEPA) and the BC Common Ground Alliance (BCCGA).

RATIONALE FOR DPPs

DPPs are intended to reduce the frequency of preventable damage. Although the content of DPPs may vary in size and scope according to the operations of individual companies, a company's DPP must include elements pertaining to:

- program planning and development
- technical content establishing minimum requirements or consideration for:
- public awareness
- hazard management
- surveillance and monitoring, and
- crossings, and
- program evaluation audit and continual improvement.

DISCLAIMER

It remains the responsibility of the user of these guidelines to judge its suitability for a particular application. The information in this publication is intended as a guideline only, is not all-inclusive, and does not provide the only acceptable means of developing and maintaining a DPP.

DAMAGE PREVENTION PROGRAM GUIDELINES

Use of this document does not release readers from their responsibilities and obligations under applicable legislation.

If there is any inconsistency or conflict between any of the advice and information contained within these guidelines and an applicable regulatory requirement, the regulatory requirement shall prevail.

Every effort has been made to ensure the accuracy and reliability of the data and information contained in this document. However, the BCCGA, its subcommittees, and individual contributors make no representation, warranty, or guarantee in connection with the publication of the contents or any of the specific guidelines proposed within this document, and hereby disclaim liability or responsibility for loss or damage resulting from the use of these guidelines, or for any violation of any regulatory requirements.

INTENDED AUDIENCE

This document is primarily intended for use by petroleum and natural gas industry permit holders who are required to establish DPPs under the OGC regulations to ensure the integrity of their buried facilities. Permit holders are defined as pipeline companies or operators.

These guidelines do not provide complete detail on the specific tasks and procedures required to develop and maintain a DPP. These specifics are better addressed through existing training and procedural documents applicable to ground disturbance and damage prevention.

DPP RESOURCES

Documents that may be useful in developing a comprehensive DPP are:

- BC Common Ground Alliance Best Practices
- Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention
- Alberta Damage Prevention Council Standards
- National Energy Board Onshore Pipeline Regulations (OPR-99)
- American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162
- CSA Z662 Oil and Gas Pipeline Systems (CSA Z662)
- CAN/CSA-ISO 19011

Note that Appendix A includes a matrix of the above documents that applies to each of the following guidelines.

SECTION TWO: LEGISLATION

Section 7 of the Pipeline and Liquefied Natural Gas Facilities Regulation states:

(1) A pipeline permit holder must not operate a pipeline approved by the permit unless:

(a) the holder has prepared a pipeline integrity management program for the pipeline that complies with CSA Z662 and Annex N of CSA Z662,

(b) the holder has prepared a damage prevention program for the purpose of anticipating and preventing damage to the permit holder's pipeline,

(c) the pipeline is operated in accordance with the pipeline integrity management program and the damage prevention program,

(d) the holder is a member of BC One Call.

(2) A pipeline permit holder, on the request of an official, must make available to the commission a copy of the pipeline integrity management program required under subsection (1) (a) or a description of the damage prevention program required under subsection (1) (b).

This guideline deals exclusively with the development of a DPP and not an Integrity Management Program.

For the purposes of this guideline, Integrity Management Programs deal with plant management, maintenance and life cycle of the infrastructure, while DPPs address external/third party threats to the integrity of the infrastructure.

SECTION THREE: KEY ELEMENTS OF A DAMAGE PREVENTION PROGRAM

PROGRAM PLANNING AND DEVELOPMENT

The key to developing a successful DPP is planning and development.

1. PERMIT HOLDERS SHALL ESTABLISH A DPP THAT IS RELEVANT TO THE SIZE AND SCALE OF THEIR OPERATIONS.

GOAL STATEMENT: The structure and content of DPPs should reflect the complexity and size of the system to which it is applied.

GUIDANCE: The size and scope of the DPP should be consistent with the size and scale of the operation. Each DPP should be purpose-built for the operation it is designed to protect. At a minimum, the DPP should:

- a) be reviewed at regular intervals and updated as necessary;
- b) be linked to changes to a risk assessment within the organization; and
- c) include criteria to establish levels of consequence.

2. PERMIT HOLDERS SHALL BE SPECIFIC IN PROVIDING GUIDANCE ON THE HANDLING OF INFORMATION IN THE DEVELOPMENT OF THEIR DPP.

GOAL STATEMENT: The content of the DPPs should include specific guidance on the accurate handling of information.

GUIDANCE: The entire damage prevention process depends on accurate handling and communication of ground disturbance information. Errors at any step in reporting and receiving, analyzing, and responding to information related to these activities may result in underground facility damage. At a minimum, the DPP should be written in such a way to take into account the importance of accurate handling of information.

3. PERMIT HOLDERS SHALL DEMONSTRATE A CLEAR COMMITMENT BY MANAGEMENT TO THE DAMAGE PREVENTION PROCESS.

GOAL STATEMENT: Management should demonstrate their commitment to damage prevention and actively participate in the program.

GUIDANCE: Management is inevitably accountable for the DPP. It is imperative to a successful DPP for the company's management to demonstrate their clear commitment to the damage prevention process. This involves, at a minimum, communicating goals and expectations to staff and allocating the necessary resources to implement that commitment. Their commitment should foster a corporate culture of damage prevention, safe practice and environmental protection.

RESOURCES:

- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*

4. PERMIT HOLDERS SHALL DEMONSTRATE A TEAM APPROACH RELEVANT TO THE SIZE AND SCALE OF THEIR OPERATION IN THE DEVELOPMENT AND IMPLEMENTATION OF THE DPP.

GOAL STATEMENT: The DPP should be developed, implemented and maintained with a team approach with where possible.

GUIDANCE: Where possible, a team approach allows tasks to be distributed among several employees and enables staff from different parts of the organization to have input into the planning process. To champion the effort, every DPP needs an effective damage prevention leader.

A successful DPP requires not only support from management, but also input and participation from all levels of the organization. The DPP team could include employees who are responsible for planning, designing, implementing, and maintaining the program. The ideal size of the team depends on the size of the organization. In small companies, a team approach may not be possible. In larger companies, the team might include managers, supervisors, technical staff, and other interested employees.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*

5. PERMIT HOLDERS SHALL CLEARLY ARTICULATE ROLES AND RESPONSIBILITIES IN THEIR DPP.

GOAL STATEMENT: Responsibilities and accountabilities should be clearly documented within the DPP.

GUIDANCE: Clearly articulating the roles and responsibilities within an organization's DPP is critical for success and ensures accountability for the various aspects of the program. At a minimum, a DPP should:

- a) Distribute the roles and responsibilities for the development, implementation, control, review, continual improvement, and approval of the DPP across the organization.
- b) Articulate responsibility for the DPP throughout the organization.
- c) Define roles and responsibilities for employees and on-site personnel.
- d) Articulate DPP awareness, accountability, training, and continual improvement to employees and on-site personnel.
- e) Work with management to set goals and measures.
- f) Gather and analyze information relevant to the design and implementation of the program.
- g) Promote the program to employees and educating them on how they can participate in the effort.
- h) Monitor and report to management on the progress of the program.

In addition, the DPP has implications beyond the control of the organization, and key stakeholders in ground disturbance should be considered in the development of the program (i.e. regulators, emergency services, the general public, land owners, etc.)

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *National Energy Board Onshore Pipeline Regulations (OPR-99)*

6. PERMIT HOLDERS SHALL ENSURE THAT INDIVIDUALS, BOTH INTERNAL AND EXTERNAL, INVOLVED IN THE DPP POSSESS THE APPROPRIATE COMPETENCIES.

GOAL STATEMENT: The DPP should include processes that verify that individuals involved, both internal and external, possess appropriate knowledge, skills and experience.

GUIDANCE: Having the appropriate training, skills and experience to carry out a damage prevention activity is vital to the success of a DPP. At a minimum, individuals responsible for various activities of the DPP should possess relevant education, training, skills and experience.

External personnel, such as technical assistance providers or consultants, can complement the team by providing technical or managerial expertise. Often these people can offer auditing expertise as well as knowledge of damage prevention, and jurisdictional and regulatory requirements.

7. PERMIT HOLDERS SHALL DEVELOP POLICIES AND PROCEDURES IN SUPPORT OF THEIR DPP.

GOAL STATEMENT: DPPs should include policies and procedures designed to codify critical aspects of the program.

GUIDANCE: Policies and procedures are the strategic link between the DPP and the organization's day-to-day operations. Well written policies & procedures allow employees to understand their roles and responsibilities within predefined limits. Basically, policies & procedures allow management to guide operations without constant management intervention.

Organization-wide policies and procedures help codify critical aspects of the DPP. Organizational policies and procedures should provide clear direction, commitment, responsibility, and oversight and define the damage prevention environment for the permit holder.

8. PERMIT HOLDERS SHALL MAINTAIN RECORDS OF THEIR DPP.

GOAL STATEMENT: The DPP should include requirements for records management.

GUIDANCE: Records management is essential for companies to demonstrate due diligence regarding the implementation of a DPP. Documentation verifies the execution of the program. At a minimum, companies should maintain records for regulated facilities:

- a) to help manage an effective program,
- b) to demonstrate compliance with regulatory standards,
- c) to allow for consistent measurement against corporate operating standards, and
- d) to provide documentation in case of legal proceedings.

Documentation may include, but is not limited to:

- a) hazard assessments of the worksite,
- b) tailgate or toolbox meeting minutes,
- c) locate requests and locate documentation, and
- d) worker training records for verification of competency.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*

PUBLIC AWARENESS PROGRAMS

Public awareness is an important aspect of a DPP. Public awareness is all about building relationships to advance, promote, and benefit the reputation of the organization. It communicates the organization's safety message, policies and procedures, and other important information. It helps to gain allies, advocates and supporters. It demonstrates to regulatory agencies that the organization is making a difference and has demonstrated results. It can lead to strong community and industrial partnerships.

9. PERMIT HOLDERS SHALL REGULARLY COMMUNICATE THE CONTENT OF THEIR DPP WITH EXTERNAL STAKEHOLDERS.

GOAL STATEMENT: The DPP should include elements designed to promote safety by communicating externally (public relations).

GUIDANCE: Public awareness and understanding of pipeline operations is vital to the continued safe operation of pipelines. Permit holders' Public Awareness Programs are an important factor in establishing communications and providing information necessary to help the public understand that pipelines are the major transportation system for petroleum products and natural gas in North America, how pipelines function, and the public's responsibilities to help prevent damage to pipelines. At a minimum, a public awareness campaign should include all relevant stakeholders that interface with the organization's underground infrastructure.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162*

10. PERMIT HOLDERS SHALL ADDRESS THE COMMUNICATION NEEDS OF DIFFERENT AUDIENCES WITHIN THE COMMUNITY WITH RESPECT TO THEIR DPP.

GOAL STATEMENT: The DPP should be effectively communicated to different audiences within the community based on a risk analysis.

GUIDANCE: Public Awareness Programs should address the needs of different audiences within the community and be flexible enough to change as the pipeline system changes or as the public's need for information change. When effectively and consistently managed, a Public Awareness Program may provide significant value to the pipeline permit holder in several areas: enhanced public safety, improved pipeline safety and environmental performance, building trust and better relationships with the public along the pipeline route, less resistance to pipeline maintenance and right-of-way activities, preservation of rights-of-way, enhanced emergency response coordination, and improved pipeline permit holder reputation. At a minimum, special attention should be given to ensuring that the best method of reaching a particular stakeholder audience is employed.

Examples of relevant stakeholders may include:

- a) the public living or working near a pipeline including landowners and tenants, residents, businesses or associations on or adjacent to the pipeline rights of way and homeowner organizations and neighbourhood associations;
- b) owners and operators of facilities;
- c) institutions such as schools, churches, recreation centres, hospitals, prisons or other institutions along the pipeline route;
- d) organizations with an interest in damage prevention;
- e) government agencies and emergency response representatives including provincial departments or agencies, municipal governments and planning authorities, public works departments, emergency responders (police, fire, ambulance), hazardous material response teams, and disaster recovery or emergency measures authorities;
- f) excavators and contractors;
- g) industry associations;
- h) persons and corporations involved in land developments such as subdivisions; and,
- i) engineering firms engaged in fields where their work has the potential to interfere with the safe operation of pipelines.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*

- *American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162*

11. PERMIT HOLDERS SHALL UTILIZE DIFFERENT METHODS TO EFFECTIVELY COMMUNICATE THEIR DAMAGE PREVENTION MESSAGE.

GOAL STATEMENT: The DPP may include different methods to communicate the damage prevention message that will effectively resonate with various stakeholder audiences.

GUIDANCE: The more public awareness activities that are undertaken, the greater the potential for dissemination of information and education of stakeholders. Public awareness is not just media relations. "Doing outreach" itself is public awareness. At a minimum, the permit holder should identify the best methods to communicate its program message(s). Distribution methods may include:

- a) Hosting or attending special events
- b) Conducting special promotions
- c) Providing presentations at venues such as local meetings or town halls;
- d) Utilizing high tech tools: internet, blogging, social networking
- e) Distributing promotional items;
- f) Making door to door contact;
- g) Creating brochures;
- h) Distributing mailings (with response cards) and community and neighbourhood newsletters;
- i) Purchasing media advertisements;
- j) Distributing multi-media such as videos, CDs, and DVDs; and,
- k) Attending trade shows or exhibits.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162*

12. PERMIT HOLDERS SHALL PROVIDE SUFFICIENT INFORMATION TO ENSURE THAT STAKEHOLDERS ARE AWARE OF THEIR RESPONSIBILITIES IN REGARDS TO THE DPP.

GOAL STATEMENT: The DPP should provide appropriate information to effectively communicate critical aspects of the DPP.

GUIDANCE: The content of the communications should be sufficient to ensure that the audience is aware of the presence of the pipeline and the significant damage prevention and safety considerations. At a minimum, public awareness campaigns should communicate critical aspects of the DPP to relevant stakeholders. These critical aspects may include:

- a) One-Call information;
- b) a description of the safety zone (these may differ by regulatory requirements and/or owner policy);
- c) descriptions of permissible and non-permissible activities within the safety zone;
- d) general requirements of easement agreements pertaining to the continued safe operation of the pipeline (e.g. prohibited land uses and allowances for structures);
- e) information on what activities have the potential to damage the pipeline;
- f) excavation requirements;
- g) regulatory requirements and the consequences of non-compliance;
- h) illustrations and descriptions of pipeline markers;
- i) signage;
- j) guidance on the types of activities and events that should be reported to the pipeline company;
- k) guidelines and service standards for processing crossing requests;
- l) information regarding emergency response and emergency contacts; and,
- m) the location and physical attributes (size, material, content, pressure, etc.) of the pipeline.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162*

13. PERMIT HOLDERS SHALL ENSURE THAT THEIR COMMUNICATIONS ARE FREQUENT ENOUGH TO EFFECTIVELY MESSAGE THEIR DPP.

GOAL STATEMENT: The frequency of communication should be sufficient to ensure that the internal and external audience is aware of the presence of the pipeline and the content of the awareness program.

GUIDANCE: At a minimum, a risk assessment should be conducted to establish the timing of communications. The frequency of consultation may be based on:

- a) risks associated with pipeline damage;
- b) population density;
- c) history of prior incidents;
- d) other factors that may be of public interest;
- e) property ownership changes;
- f) planning and development; and,
- g) changing land use.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162*

14. PERMIT HOLDERS SHALL INDICATE IN THEIR DPP THE SIGNAGE REQUIREMENTS FOR THEIR UNDERGROUND INFRASTRUCTURE.

GOAL STATEMENT: The DPP should utilize visible markings to mark underground facilities in accordance with recognized signage requirements.

GUIDANCE: Awareness relies heavily on the use of highly visible markings. Pipeline marker signs indicate that a pipeline is located nearby and provide important information on emergency response and ownership. Signs on facilities and vehicles also increase public awareness of pipelines.

Mandatory pipeline signage requirements for pipeline companies are provided within clause 10 of the standard CSA Z662 Oil and Gas Pipeline Systems (CSA Z662).

RESOURCES:

- *CSA Z662 Oil and Gas Pipeline Systems (CSA Z662)*
- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *American Petroleum Institute, Public Awareness Program for Pipeline Operators – Pipeline Segment – API Recommended Practice 1162*

15. PERMIT HOLDERS SHALL BECOME A MEMBER OF ONE CALL AND ARE ENCOURAGED TO JOIN DAMAGE PREVENTION ORGANIZATIONS WITHIN THEIR JURISDICTIONS.

GOAL STATEMENT: The DPP should include membership in BC One Call Centres and in local and regional Damage Prevention associations.

GUIDANCE: The permit holder must be a member of BC One Call. Pipeline companies are also encouraged to become members of damage prevention organizations. At a minimum, the company should participate in damage prevention organizations where they exist along the length of their right of way. In addition, they should embrace the dig safely approach, which includes the following components:

- a) Call before you dig!
- b) Wait the required amount of time for all locates to be done.
- c) Respect the marks.
- d) Manage the locates.
- e) Hand expose, where and as required.
- f) Support and protect exposed facilities.
- g) Report any damage caused or found.
- h) Dig safely!

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*

HAZARD MANAGEMENT ~ IDENTIFICATION, RISK ANALYSIS AND MITIGATION

16. PERMIT HOLDERS SHALL IDENTIFY AND MITIGATE RISK BY DESIGNING DPP POLICIES AND PROCEDURES COMMENSURATE WITH THE SIZE AND SCALE OF THEIR OPERATION.

GOAL STATEMENT: The DPP should include damage prevention and risk management activities, including the development and implementation of an assessment process, that are commensurate with the size and scope of the permit holder and effectively mitigate risk.

GUIDANCE: A damage prevention and risk management process should provide the flexibility needed for proactive decision making to address the damage prevention risks to a permit holder. Ideally, the permit holder identifies and classifies damage prevention risks in order to develop and implement strategies and controls to eliminate or mitigate risk to assets.

At a minimum, the permit holder should continuously assess risk across the organization by determining the likelihood of potential threats and the impact if the threat is realized. In addition, the permit holder should develop and implement a documented process for determining criticality of assets and an assessment of current and potential threats. This information collected should be funnelled back into the DPP continuous improvement processes to ensure that the identified risks are appropriately identified, addressed and mitigated.

Considerations might include:

- a) advising management of the conclusions reached in the risk management process;
- b) providing a mechanism for management to make decisions with respect to recommendations made; and,
- c) establishing procedures to ensure management is kept informed of any events that might identify the need for a re-assessment of damage prevention countermeasures and mitigation strategies.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *National Energy Board Onshore Pipeline Regulations (OPR-99)*

SURVEILLANCE AND MONITORING

17. PERMIT HOLDERS SHALL ESTABLISH A SURVEILLANCE AND MONITORING PROGRAM COMMENSURATE WITH THE SIZE AND SCOPE OF THE ORGANIZATION.

GOAL STATEMENT: A DPP should include surveillance and monitoring activities designed to detect activities on or near existing pipelines that have the potential to damage the pipeline.

GUIDANCE: At a minimum, pipeline companies should establish a program for monitoring and surveillance of the right of way through:

- a) establishing and maintaining line lists;
- b) maintaining updated information on the ownership of the land; and,
- c) establishing a process to monitor land use changes.

Surveillance activities range in size, scope, complexity and cost and, at a minimum, should be consistent with the risk assessment on various assets. Some examples include:

- a) Ground/ walking patrols
- b) Vehicle patrols
- c) Ariel surveillance – plane / helicopter
- d) Satellite imagery
- e) Drone aircraft patrols
- f) Camera and video monitoring

The frequency of monitoring and surveillance should be greater in areas of higher risk or elevated consequence (e.g. urban areas, population centres, high subsurface activity levels).

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *National Energy Board Onshore Pipeline Regulations (OPR-99)*

CROSSINGS / PROXIMITY WORK

Activities in proximity of underground facilities have the potential to cause damage. If a ground disturbance or above ground crossing is planned by a third party, it is a regulatory requirement that written approval be obtained from the pipeline owner. The approval shall specify the responsibilities of the parties and any conditions or limitations applicable to the ground disturbance. The signed agreement forms a contract between the two parties and must not be modified on site without the approval of the original signatories.

Depending on the type of work, the pipeline owner may also require the ground disturber to enter into encroachment agreements, which would identify the scope of the work and the responsibilities of the two parties. Encroachment or proximity agreements are not regulatory requirements. In some cases, companies may use them to verify that the two parties have agreed on specific terms related to a regulatory requirement (e.g. an agreement to infringe upon a prescribed setback). These types of agreements may also be used to provide specific legal protection between the parties.

18. PERMIT HOLDERS SHALL DEVELOP POLICES AND PROCEDURES FOR THE DEVELOPMENT OF CROSSING OR PROXIMITY AGREEMENTS THAT ENSURE THAT CROSSINGS OR PROXIMITY WORK IS CONDUCTED IN A MANNER CONSISTENT WITH THE APPLICABLE REGULATIONS AND THE PERMIT HOLDER'S SAFETY PROTOCOLS.

GOAL STATEMENT: The DPP should include crossing / proximity agreements designed to clarify expectations and protect the underground infrastructure and stakeholders in the area.

GUIDANCE: Crossing /proximity agreements and approvals help to ensure that third party crossings or proximity work are conducted in a manner consistent with the applicable regulations and the permit holder's safety protocols. These agreements minimize impact on the assets and disclose frequency and type of crossing.

At a minimum, crossing/proximity agreements should include the following critical information:

- a) contact BC One Call to place a request for the identification of underground infrastructure that may be in close proximity (not all underground utility owners are members of BC One Call so further investigation is necessary to determine if non-member infrastructure may be present);
- b) angle and direction for placement of facilities within the ground disturbance area in relation to any existing facilities;
- c) proper supporting of exposed facilities;
- d) horizontal and vertical separation to be maintained between buried facilities;
- e) notification time frames for locates, if different from the regulations;
- f) hand expose zone requirements;
- g) limits of approach distances for mechanical excavation equipment, if different from the regulations;
- h) backfill material requirements and cathodic test leads; and,
- i) notification time frame required for an inspection before backfilling.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *National Energy Board Onshore Pipeline Regulations (OPR-99)*

PROGRAM EVALUATION AND AUDIT

19. PERMIT HOLDERS SHALL CONDUCT REGULAR EVALUATIONS OF THEIR DPP AND DOCUMENT AND IMPLEMENT RECOMMENDATIONS RESULTING FROM THE EVALUATION PROCESS.

GOAL STATEMENT: The DPP should include guidelines for regular evaluations and audits to ensure that the program continues to be relevant and effective.

GUIDANCE: Regular DPP evaluations, such as documented reviews and audits, are necessary to ensure conformance with regulations, policies, procedures and processes. In addition, regular evaluation also ensures that the program actually has the intended result.

At a minimum, the operator should conduct and document a review of the DPP at as required commensurate with the size and scale of the operation. The review should be designed to verify the DPPs continuing suitability, adequacy and effectiveness and include assessing opportunities for improvement and the need for changes to the DPP to address risk. A documented review should also be considered when there are significant changes to the DPP or the permit holder's facilities, or when there has been a significant damage-related incident to the permit holder's infrastructure.

For an evaluation process to be successful, the appropriate information should be marshalled. At a minimum, this process may include information from:

- a) results of audits;
- b) internal and external stakeholder feedback;
- c) process performance and conformance to the requirements of the DPP;
- d) status of preventive and corrective actions;
- e) follow-up actions and recommendations from previous reviews;
- f) changes that could affect the DPP; and
- g) recommendations for improvement.

Records of the evaluation, including non-conformance and subsequent actions, should be maintained in accordance with operator processes and procedures.

Results of the evaluation should be incorporated back into the DPP so that risks are adequately addressed and mitigated. At a minimum, the operator should develop, implement, and maintain a continual improvement process that includes:

- a) performance monitoring for the ongoing assessment of conformance with the requirements of the DPP and the mechanisms for taking corrective and preventive measures in the event of any non-conformance;

- b) development of measurable objectives and metrics;
- c) regular evaluation and reviews to evaluate the effectiveness of the DPP in achieving objectives and targets; and,
- d) development of indicators (leading and/or lagging indicators) to demonstrate continual improvement and adequacy of the overall DPP.

RESOURCES:

- *CAN/CSA-ISO 19011*
- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *National Energy Board Onshore Pipeline Regulations (OPR-99)*

20. PERMIT HOLDERS SHALL INCLUDE PROVISIONS FOR CONTINUOUS QUALITY IMPROVEMENT.

GOAL STATEMENT: The Damage Prevention Program should be reviewed and modified as necessary to ensure that it takes into account any changes in regulatory requirements, company policy or governance, or new technological development.

GUIDANCE: By design, a DPP should be a living process and as such, organizations should have practice in place for updating it. It should be reviewed and modified as necessary to ensure that it takes into account any changes in regulatory requirements, company policy or governance, or new technological development.

The DPP should address both internal and external changes that can impact the program. Continual improvement should be considered in relation to all aspects of this guideline to ensure the operator can effectively allocate resources to manage risks and minimize adverse impacts.

At a minimum, the operator should develop, document, and implement a process for changes that could have a significant impact on the effectiveness of the DPP, including:

- a) changes that are initiated and controlled by the operator, including changes to
 - (1) organizational structure and key personnel;
 - (2) ownership;
 - (3) facilities, equipment, and technology;
 - (4) procedures or practices for operations and maintenance activities;
 - (5) operating conditions that might affect risk management prioritization or mitigation;

- (6) variance procedures;
 - (7) damage prevention technology;
 - (8) new methods, practices, or procedures;
 - (9) risk levels for specific facilities; and
 - (10) any other areas initiated internally; and
- b) changes that are not initiated and controlled by the operator, including changes to
- (1) industry standards, industry-recommended practices, or regulations;
 - (2) physical environment, such as adjacent land development or significant growth of trees or bushes; and
 - (3) any other areas initiated externally.

RESOURCES:

- *BC Common Ground Alliance Best Practices*
- *Enform Industry Recommended Practices Volume 17 – Ground Disturbance and Damage Prevention*
- *Alberta Damage Prevention Council Standards*
- *National Energy Board Onshore Pipeline Regulations (OPR-99)*
- *CAN/CSA-ISO 19011*

APPENDIX A ~ DPP CROSS REFERENCE MATRIX OF RESOURCES

Guideline		BC Common Ground Alliance Best Practices	Enform Industry Recommended Practices Volume 17 - Ground Disturbance and Damage Prevention	Alberta Damage Prevention Council Standards	National Energy Board Onshore Pipeline Regulations (OPR-99)	American Petroleum Institute, Public Awareness Program for Pipeline Operators	CSA Z662 Oil and Gas Pipeline Systems (CSA Z662)	CAN/CSA-ISO 19011
1	Permit holders shall establish a DPP that is relevant to the size and scale of their operations.							
2	Permit holders shall be specific in providing guidance on the handling of information in the development of their DPP.							
3	Permit holders shall demonstrate a clear commitment by management to the damage prevention process.		✓					
4	Permit holders shall demonstrate a team approach relevant to the size and scale of their operation in the development and implementation of the DPP.	✓	✓	✓				
5	Permit holders shall clearly articulate roles and responsibilities in their DPP.	✓	✓	✓	✓			
6	Permit holders shall ensure that individuals, both internal and external, involved in the DPP possess the appropriate competencies.							
7	Permit holders shall develop policies and procedures in support of their DPP.							
8	Permit holders shall maintain records of their DPP.	✓	✓	✓				
9	Permit holders shall promote their DPP by regularly communicating with external stakeholders.	✓	✓	✓		✓		
10	Permit holders shall address the communication needs of different audiences within the community with respect to their DPP.	✓	✓	✓		✓		
11	Permit holders shall utilize different methods to effectively communicate their Damage Prevention message.	✓	✓	✓		✓		

DAMAGE PREVENTION PROGRAM GUIDELINES

	Guideline	BC Common Ground Alliance Best Practices	Enform Industry Recommended Practices Volume 17 - Ground Disturbance and Damage Prevention	Alberta Damage Prevention Council Standards	National Energy Board Onshore Pipeline Regulations (OPR-99)	American Petroleum Institute, Public Awareness Program for Pipeline Operators	CSA Z662 Oil and Gas Pipeline Systems (CSA Z662)	CAN/CSA-ISO 19011
12	Permit holders shall provide sufficient information to ensure that stakeholders are aware of their responsibilities in regards to the DPP.	✓	✓	✓		✓		
13	Permit holders shall ensure that their communications are frequent enough to effectively message their DPP.	✓	✓	✓		✓		
14	Permit holders shall indicate in their DPP the signage requirements for their underground infrastructure.	✓	✓	✓		✓	✓	
15	Permit holders shall become a member of One Call and are encouraged to join Damage Prevention organizations within their jurisdictions.	✓	✓	✓				
16	Permit holders shall identify and mitigate risk by designing DPP policies and procedures commensurate with the size and scale of their operation.	✓	✓	✓	✓			
17	Permit holders shall establish a surveillance and monitoring program commensurate with the size and scope of the organization.	✓	✓	✓	✓			
18	Permit holders shall develop polices and procedures for the development of crossing agreements that ensure that crossings are conducted in a manner consistent with the applicable regulations and the permit holder's safety protocols.	✓	✓	✓	✓			
19	Permit Holders shall conduct regular evaluations of their DPP and document and implement recommendations resulting from the evaluation process.	✓	✓	✓	✓			✓
20	Permit holders shall include provisions for continuous quality improvement.	✓	✓	✓	✓			✓