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February 15, 2001

**Subject: Damage Prevention Regulations (DPR)**

The National Energy Board (the NEB or the Board) has completed its analysis of the data obtained from the survey issued in August 2000. A copy of the summary report is attached for your use.

The information obtained through the survey is being used by the Board in the development of a conceptual draft of the DPR. This draft document will be circulated to stakeholders for comment upon completion later this year. Following circulation, the Board will meet with interested stakeholders across Canada to discuss the contents of the draft.

Should you have any questions or require any additional information at this time, please contact Ken Paulson of the NEB at:

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Yours truly,

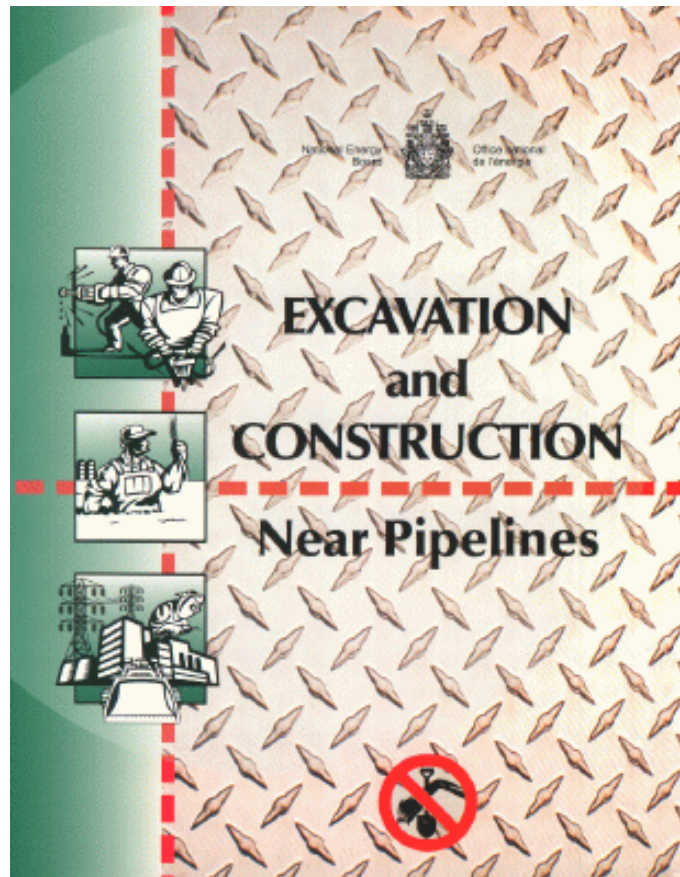
Michel L. Mantha  
Secretary

National Energy Board



Office national de l'énergie

# DAMAGE PREVENTION REGULATIONS SURVEY RESULTS



This Report has been prepared by the National Energy Board based upon comments and input received in response to a survey circulated to over 300 stakeholders in August of 2000. The Board wishes to thank participants in the survey for their time and effort in providing the responses contained within this survey report.

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# 1. Executive Summary

The National Energy Board (the NEB or the Board) developed the existing *Pipeline Crossing Regulations* (Part 1 and Part 2) in 1988. Since that time, an immense amount of work has occurred throughout the pipeline industry in the area of damage prevention. When the Board undertook to review the existing *Pipeline Crossing Regulations* in mid 1999, it quickly became evident that the existing regulations focussed more on damage prevention than on crossing activities and as such should be renamed the *Damage Prevention Regulations* or DPR.

The goal of the Damage Prevention Survey was to gain insights on issues of importance to the community affected by these Regulations. Survey responses are anonymous and can not be traced back to the originator.

This report includes detailed analyses of the information obtained through the survey. It is important to note that while the results and recommendations arising from the survey are not binding upon the Board, they will guide the Board in the development of the DPR.

A total of 118 survey returns are included in this report. Nine (9) additional surveys were received during compilation and are included within the Project Working Group's internal database for consideration as the development of the Regulation proceeds.

Initially, responses were divided into 17 different stakeholder groups representing a variety of interests. The number of responses within individual stakeholder groups ranged from between 1 and 24 responses. To provide reasonable amounts of data for analysis, individual stakeholder groups were further combined into 5 stakeholder groups as shown in Table 1.

**Table 1 - Stakeholder Groups For Data Analysis**

Grouping	Consisting Of	Sample Size
Aggregate Data	All Stakeholders	118
Pipeline Company	Pipeline Companies <sup>1</sup>	24
Government	Municipal, Provincial and Federal Governments and Law Enforcement Agencies	33
Utility	Utilities <sup>2</sup>	15
Other Users of the Subsurface	Contractors, Consultants, Damage Prevention Groups, Developers, Seismic Contractors	24
Affected Parties	Interested Parties, Landowners, Environmental Groups, Farmers, First Nations, Owners of Other ROW, Others	22

1 The Pipeline Company stakeholder group consists of companies regulated by the NEB and companies which are regulated provincially.

2 Utilities include phone companies, cable providers, gas distributors, electrical providers, etc.

The report consists of an introduction to the NEB and the DPR (section 2), presentation and discussion of aggregate data (section 3) and analysis and comparisons of data grouped in accordance with the 5 stakeholder groups presented in Table 1 (section 4). Further analyses of data by the stakeholder groups listed in Table 1 are available upon request.

The survey data provides guidance in a number of areas including requirements for locations and approvals, land use, excavation practices, awareness programs, enforcement, and communications. Table 2 provides an overview of some of the key findings arising from the survey.

**Table 2 - Key Findings**

Issue/Item	Respondents in Support
Mandatory pipeline locations <sup>1</sup> prior to excavation upon land which is encumbered by a pipeline	79%
Mandatory membership in One-Call centres for NEB regulated pipelines	89%
Accuracy requirements for locations	87%
Standardized crossing designs (including engineering analysis)	81%
Pipeline depth surveys upon request	74%
Recommended development set backs (based on land use)	83%
Development of minimum qualifications for locators	95%
Development of standards for awareness programs	87%
Implementation of an administrative fine structure for violations	69%
Percentage of Respondents that believe NEB role and jurisdiction is clear	16%

1. The term “locations” or “locates” means the activities involved in having the position of the pipeline marked on the ground surface.

Respondents appear to feel that many of the activities currently requiring the approval of the NEB could be delegated to the pipeline companies. It also appears that some activities currently requiring approval of either the Board or the pipeline company could be reviewed and possibly be allowed to proceed without approval of any kind.

## **2. Introduction**

### **2.1 Overview of the NEB**

The National Energy Board (the NEB or the Board) is an independent federal regulatory agency that was established in 1959. The Board regulates the following specific aspects of the energy industry:

- the construction and operation of interprovincial and international oil, gas and commodity pipelines;
- pipeline traffic, tolls and tariffs;
- the construction and operation of international and designated interprovincial power lines;
- the export and import of natural gas;
- the export of oil and electricity; and
- Frontier oil and gas activities

Other responsibilities include:

- providing, where the Board has expertise derived from its regulatory functions, energy advice to the Minister of Natural Resources;
- carrying out studies and preparing reports when requested by the Minister;
- conducting studies into specific energy matters;
- holding public inquiries when appropriate; and
- monitoring current and future supplies of Canada's major energy commodities.

In addition to its responsibilities under the *National Energy Board Act* (NEB Act), the Board also has responsibilities under the *Canada Oil and Gas Operations Act*, the *Canadian Environmental Assessment Act*, the *Northern Pipeline Act*, and certain provisions of the *Canada Petroleum Resources Act*.

The Board's corporate purpose is to promote safety, environmental protection and economic efficiency in the Canadian public interest while respecting individuals' rights within the mandate set by Parliament in the regulation of pipelines, energy development and trade. This principle guides the Board in carrying out and interpreting its regulatory responsibilities. The Board is accountable to Parliament, to which it reports, through the Minister of Natural Resources.

### **2.2 Damage Prevention Regulations Plan**

The NEB regulates activities on or adjacent to rights of way under Board jurisdiction in the interests of the protection of property and the environment and the safety of the public and of the pipeline company's employees. At present, these activities are restricted by the following regulations and order(s) made under sections 48(2) and 112(5.1) of the Act:



- *Pipeline Crossing Regulations, Part I,*
- *Pipeline Crossing Regulations, Part II;* and
- General Order No. 1.

The current *Pipeline Crossing Regulations* (Parts 1 & 2) were promulgated on 17 October 1988. General Order No. 1 (originally dated 21 July 1961) dealing with the requirements for pipelines crossing other utilities was amended by the Board on 28 July of that same year. The intent of these Regulations and this Order was to regulate activities having the potential to damage pipelines in the interests of increased safety through a reduction of risk.

Problems with the interpretation and application of the existing Regulations and Order have led to the decision to replace the existing Regulations with the DPR. The new Regulations will build upon the experiences and learnings obtained in the development of recent NEB Regulations such as the *Onshore Pipeline Regulations, 1999* (OPR) and the proposed *Processing Plant Regulations* (PPR).

The DPR will apply to all persons or companies who undertake activities that have the potential to result in damage to a NEB regulated pipeline. It is therefore essential that the new Regulations provide clear guidance and direction. This is particularly important given that these Regulations apply to third parties who may have limited knowledge of the pipeline industry and the laws governing activities near pipelines.

The DPR are intended to be constructed in such a manner that the role of the Board as administrator is clear and limited to areas of significant public interest. Correspondingly, the DPR will place the prime responsibility for active damage prevention with the pipeline companies.

The development of the DPR will be guided by the following statement of purpose and three supporting principles:

### ***Statement of Purpose***

The National Energy Board regulates activities on or adjacent to rights of way under Board jurisdiction in the interests of the protection of property and the environment and the safety of the public and of the pipeline company's employees.

### ***Supporting Principles***

- The Board respects the rights of owners or users of property which contain or are adjacent to rights of way.
- The Board respects the rights of pipeline companies in the management of affairs within their rights of way.
- The Board promotes compliance through education, cooperation and enforcement.

The DPR will be developed interactively with interested stakeholders in keeping with the *Government of Canada Regulatory Policy* as approved by Cabinet in November 1999 (included for reference in Appendix I). The major policy points within the aforementioned are:

*When regulating, regulatory authorities must ensure that:*

1. *Canadians are consulted, and that they have an opportunity to participate in developing or modifying regulations and regulatory programs;*
2. *they can demonstrate that a problem or risk exists, federal government intervention is justified and regulation is the best alternative;*
3. *the benefits outweigh the costs to Canadians, their governments and businesses. In particular, when managing risks on behalf of Canadians, regulatory authorities must ensure that the limited resources available to government are used where they do the most good;*
4. *adverse impacts on the capacity of the economy to generate wealth and employment are minimized and no unnecessary regulatory burden is imposed. In particular, regulatory authorities must ensure that:*
  - *information and administrative requirements are limited to what is absolutely necessary and that they impose the least possible cost;*
  - *the special circumstances of small businesses are addressed; and*
  - *parties proposing equivalent means to conform with regulatory requirements are given positive consideration.*
5. *international and intergovernmental agreements are respected and full advantage is taken of opportunities for coordination with other governments and agencies;*
6. *systems are in place to manage regulatory resources effectively. In particular, regulatory authorities must ensure that:*
  - *the Regulatory Process Management Standards are followed*
  - *compliance and enforcement policies are articulated, as appropriate; and*
  - *resources have been approved and are adequate to discharge enforcement responsibilities effectively and to ensure compliance where the regulation binds the government.*
7. *other directives from Cabinet concerning policy and law making are followed such as the Cabinet Directive on Law-making and the Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals and the Cost Recovery and Charging Policy.*

In order to achieve the policy objective of consulting Canadians, the Board set out to develop a list of stakeholders who might be interested in participating in the development of the DPR. To do this, the Board reviewed internal mailing lists, and conducted Internet and phone directory searches to obtain contact information. This effort yielded an initial contact list of over 600 individuals and organizations. Attempts were then made to contact these individuals to gauge their interest in participating as well as to obtain direction on how the consultation process could be made more effective. Ultimately, the Board developed a database consisting of approximately 330 contacts representing 20 different stakeholder groups (survey responses were received from 17 of the 20 groups).

The designations assigned to these groups are provided in Table 3.

**Table 3 - Stakeholder Groups**

Consultants	Contractors	Damage Prevention Groups
Developers	Interested Parties	Landowners
Provincial OH&S	Provincial Pipeline / Energy	Seismic Contractors
Others	Environmental Groups	Farmers
First Nations	Governments	Municipal Authorities
Owners of Other ROW	Pipeline Companies	Realtors
Utilities	Law Enforcement Agencies	

Interactive involvement in the regulatory development phase is envisioned to consist of completion of the survey followed by mailings of portions of the draft Regulations as they are being developed for comment and revision. Stakeholders will be consulted regarding the effectiveness and practicality of the Regulations as they are developed. Communications will take advantage of technology (e-mail & facsimile) as much as possible but it is recognized that direct mailings may also be required.

The anticipated completion date for the development of completed draft Regulations is 01 June 2001. At that point in time the Regulation would have been reviewed by stakeholders and staff, and will be presented to the Board for approval to begin broader consultation. Table 4 provides an overview of the major steps in the regulatory development process for the DPR.

Direct consultation is planned throughout the development of the Regulations. NEB Staff will meet with interested parties throughout Canada to discuss concerns and issues regarding this project. A major focus of the survey which is the subject of this report was to determine how best to inform and consult with Canadians.

Final promulgation of these Regulations is anticipated sometime in 2003. However, it is important to note that certain steps presented in Table 4 are not within the authority of the NEB and as such, the precise date of promulgation can not be given with any degree of certainty.

**Table 4 - Regulatory Development Process**

<b>Step</b>	<b>Target Date</b>	<b>Status</b>	<b>Description</b>
1		Complete	Development of Stakeholder database
2		Complete	Telephone Contact with Stakeholders
3		Complete	Preparation & Mailing of DPR Survey
4		This Report	Compile and Share Survey Results
5	15 December 2000		Develop Structure For DPR's
6	15 December 2000		Begin To Circulate Section Drafts For Discussion
7	1 June 2001		Prepare Final Draft For Board Consideration
8	Fall 2001		Meetings With Stakeholders
9	31 December 2001		Forward Draft To Justice
10	Early 2003		Gazette Part 1 (Tentative)
11	Mid 2002		Gazette Part 2 (Tentative)
12	Late 2003		Promulgation (Tentative)

### 3. Aggregate Results

The information collected by the Damage Prevention Survey consists of more than 10,000 unique data records collected from the 118 surveys which had been returned at the time of preparation of this report. The distillation of such a large amount of data into meaningful results was problematic, particularly given the high rate of return of surveys within some stakeholder groups, and few or no survey returns from others. Further, many stakeholders identified themselves as belonging to more than one stakeholder group.

Table 5 provides a breakdown of the number of surveys returned by various stakeholder groups.

**Table 5 - Returns By Stakeholder Group**

<b>Stakeholder</b>	<b>No. Of Surveys Sent (Approximate)</b>	<b>No. Of Surveys Returned</b>	<b>Stakeholder</b>	<b>No. Of Surveys Sent (Approximate)</b>	<b>No. Of Surveys Returned</b>
Consultants	41	8	Contractors	21	11
Damage Prevention Groups	9	1	Developers	2	1
Interested Parties	10	1	Landowners	6	7
Provincial OH&S	11	7	Provincial Pipeline / Energy <sup>1</sup>	15	0
Seismic Contractors	4	3	Others	0	1
Environmental Groups	5	0	Farmers	1	3
First Nations	3	2	Governments	28	12
Municipal Authorities	35	13	Owners of Other ROW	9	8
Pipeline Companies	98	24	Realtors	1	0
Utilities	25	15	Law Enforcement Agencies	0	1

1. It is evident from the content of the returned surveys that provincial pipeline and energy regulators identified themselves as “government”.

Given the wide range in the number of survey returns from various stakeholder groups, the data presented in this report has been grouped by predominant interest. The analysis contained herein will be based upon the groupings presented in Table 1 presented in the Executive Summary and provided again here for reference.

**Table 1 - Stakeholder Groups For Data Analysis**

<b>Grouping</b>	<b>Consisting Of</b>	<b>Sample Size</b>
Aggregate Data	All Stakeholders	118
Pipeline Company	Pipeline Companies <sup>1</sup>	24
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1 The Pipeline Company stakeholder group consists of companies regulated by the NEB and companies which are regulated provincially.

2 Utilities include phone companies, cable providers, gas distributors, electrical providers, etc.

A copy of the Damage Prevention Regulation Survey is included in Appendix II of this report.

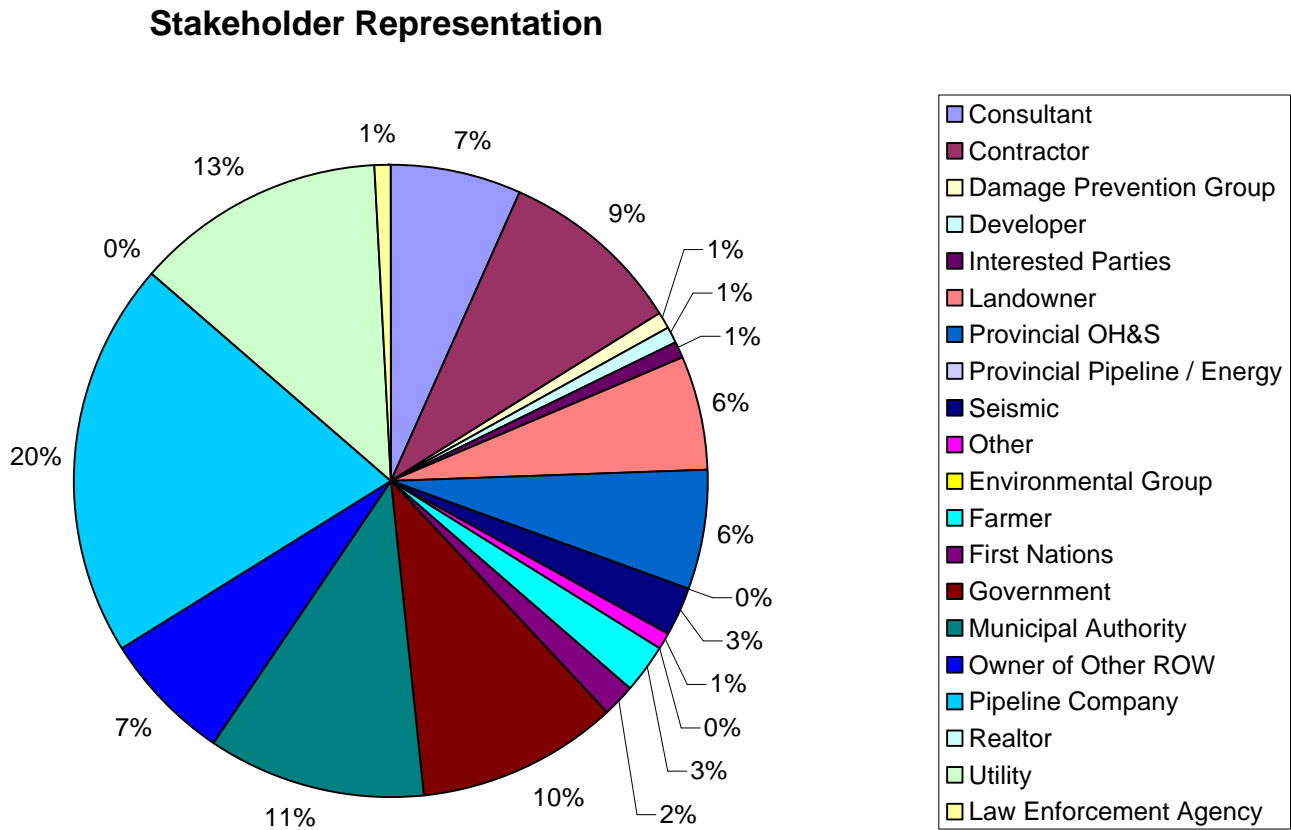
For discussion purposes, survey data will generally be discussed in order of the 12 sections which were included in the survey. These were:

1. Stakeholder Identification
2. Pipeline Locating and Clearances
3. Mechanical Excavation Setback
4. Reporting
5. Pipeline Signage and Other Identifiers
6. Damage Prevention Organizations
7. Crossings and Land Use
8. Comments on Existing Regulations
9. Approvals
10. Land Use
11. General
12. Communication Strategies

A summary of the aggregate data collected from the survey and used for this analysis is presented in Appendix IV of this report. Raw data is available upon request.

Figure I-1 on the following page provides a graphic depiction of the stakeholder composition of survey respondents.

**Figure I-1 : Aggregate Stakeholder Identification**

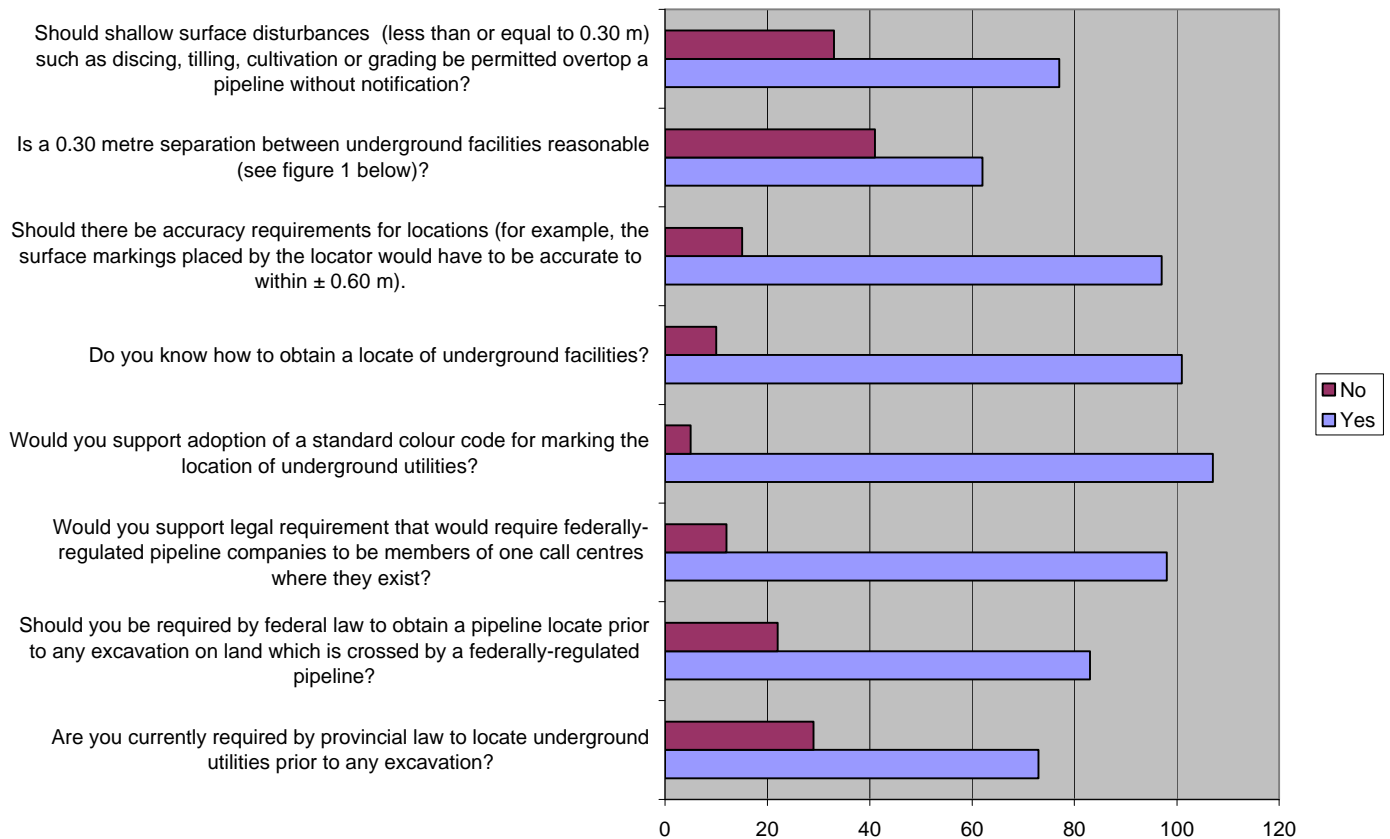


Thirty-three percent of survey respondents were utilities or pipeline companies representing the majority of companies which use the subsurface environment on a daily basis. The bulk of the rest of the respondents were from municipal, provincial or federal levels of government or affected parties such as landowners, farmers, etc.

Based upon the aggregate responses, it appears that a clear majority of respondents favour inclusion of the following items within the proposed Damage Prevention Regulations:

- a legislative requirement for membership in one call systems;
- a requirement for locations whenever excavation work is performed on land which is crossed by a pipeline;
- a standard colour code for underground utilities (assumed to be the code published by the American Public Works Association);
- accuracy requirements for locations performed to identify pipelines; and
- an exemption from any restrictions for low impact activities such as discing, tilling (not deep tilling), cultivation, etc.

**Figure I-2 : Aggregate Pipeline Locating and Clearance**



There was no clear consensus on what might constitute a reasonable setback for the use of mechanical equipment from an operating pipeline (prior to hand exposure and after hand exposure). Opinions varied from virtually no setback to “the further the better”. Many respondents suggested that the setbacks provided in the Alberta Pipeline Regulation (5 metres from centerline of pipe) and the Alberta General Safety Regulation (0.6 metres from centerline of distribution pipeline) should be adopted by the NEB. Others were satisfied with the current setback contained within the section 6(j) *Pipeline Crossing Regulations, Part 1* of 3.0 metres.

6. *Leave of the Board is not required for an excavation, other than an excavation referred to in section 7, if.....*

*(j) the excavator does not excavate mechanically within three metres of a pipe unless*

- (i) the pipe has been exposed by hand at the point of crossing or, where the excavation runs parallel to the pipe, at sufficient intervals to confirm the location of the pipe,*
- (ii) where the excavation crosses a pipe, the pipeline company has informed the excavator that it has confirmed the location of the pipe by probing,*

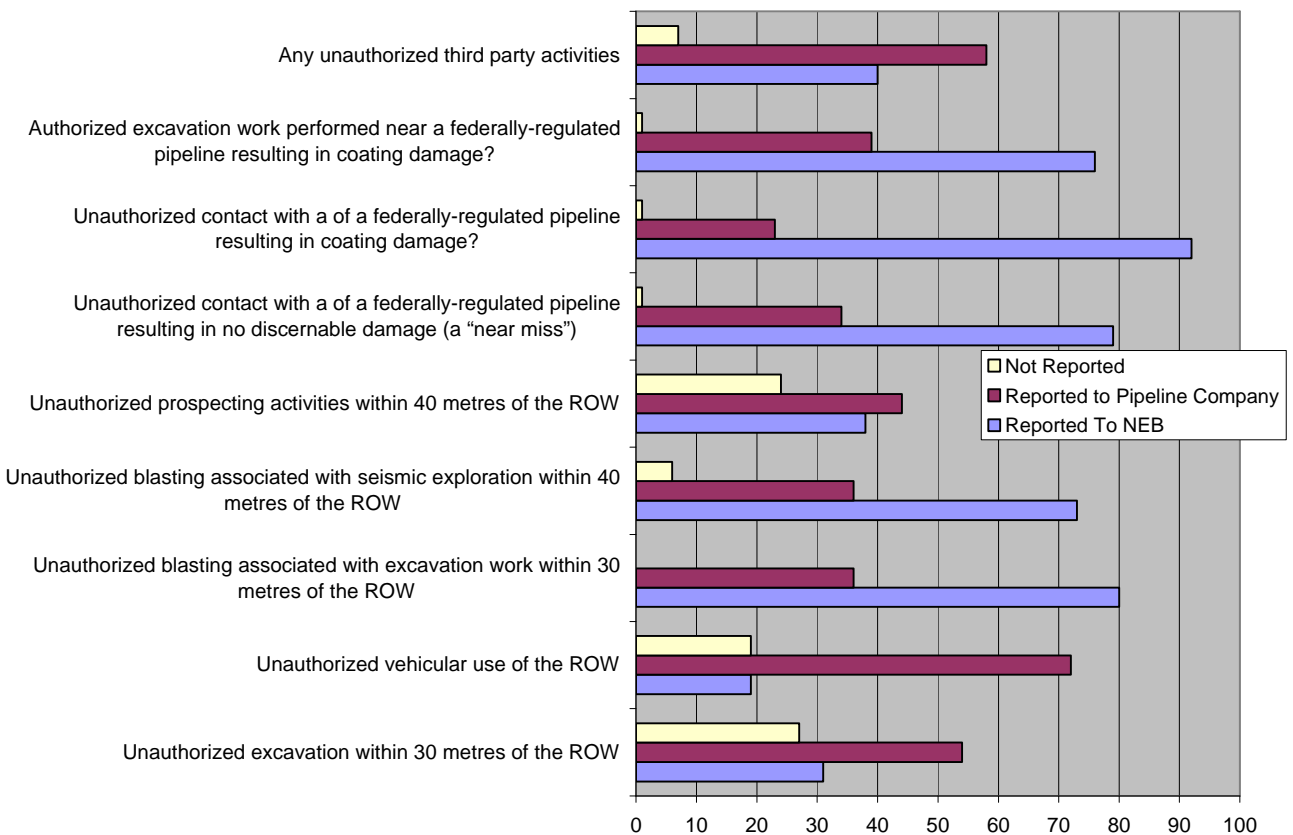


*and the pipe is at least six tenths of a metre deeper than the proposed excavation,*

*(iii) where the excavation runs parallel to the pipe, the pipeline company has informed the excavator that it has confirmed the location of the pipe by probing, or*

*(iv) where ground conditions render exposure of the pipe by hand impractical, the pipeline company has agreed that the excavation may be performed safely to within one metre of the pipe, and the pipeline company directly supervises the excavation;*

**Figure I-3 : Aggregate Reporting**



There appeared to be some confusion surrounding the intent of the questions in section 4 of the survey. Many respondents indicated that certain activities should be reported to both the NEB and the pipeline company. In these instances, the assumption was made that any reporting to the NEB would logically also involve reporting to the company.

Despite this confusion, the vast majority of respondents felt that the following activities should be reported directly to the NEB:

- unauthorized blasting associated with excavation work within 30 m of the ROW;
- unauthorized blasting associated with seismic exploration with 40 m of the ROW;
- unauthorized contact with a pipeline even when there is no discernable damage;
- unauthorized contact with a pipeline resulting in coating damage; and
- authorized excavation resulting in contact with the pipeline resulting in coating damage.

One of the stated goals of the NEB is:

*NEB-regulated facilities are safe and perceived to be safe*

Success in meeting this goal is measured by maintaining or improving the safety performance and public confidence with respect to NEB regulated pipelines. This success is measured through “key indicators”. Clearly, the collection and reporting of data from incidents, which have the potential to impact pipeline performance and/or public confidence, is required in meeting this goal.

Respondents also indicated that some activities do not need to be reported to the NEB and in fact could be reported to and dealt with by the pipeline company directly. These activities include:

- unauthorized excavation within 30 metres of the ROW
- unauthorized vehicular use of the ROW
- unauthorized prospecting within 40 m of the ROW

Where these activities have no potential to damage a facility or harm the environment, it is probably not necessary to report them to the NEB with the exception of the 3<sup>rd</sup> item pertaining to prospecting. Prospecting is regulated under section 81 of the NEB Act:

*81. (1) No person shall work or prospect for mines or minerals lying under a pipeline or any of the works connected therewith, or within forty metres therefrom, until therefor has been obtained from the Board.*

*Use of oil and gas*

*(2) Notwithstanding subsection (1), leave from the Board is not required in the case of a well taking oil or gas from lands lying under a pipeline or any of the works connected therewith if the well is not drilled within forty metres of the pipeline.*

*Application for leave*

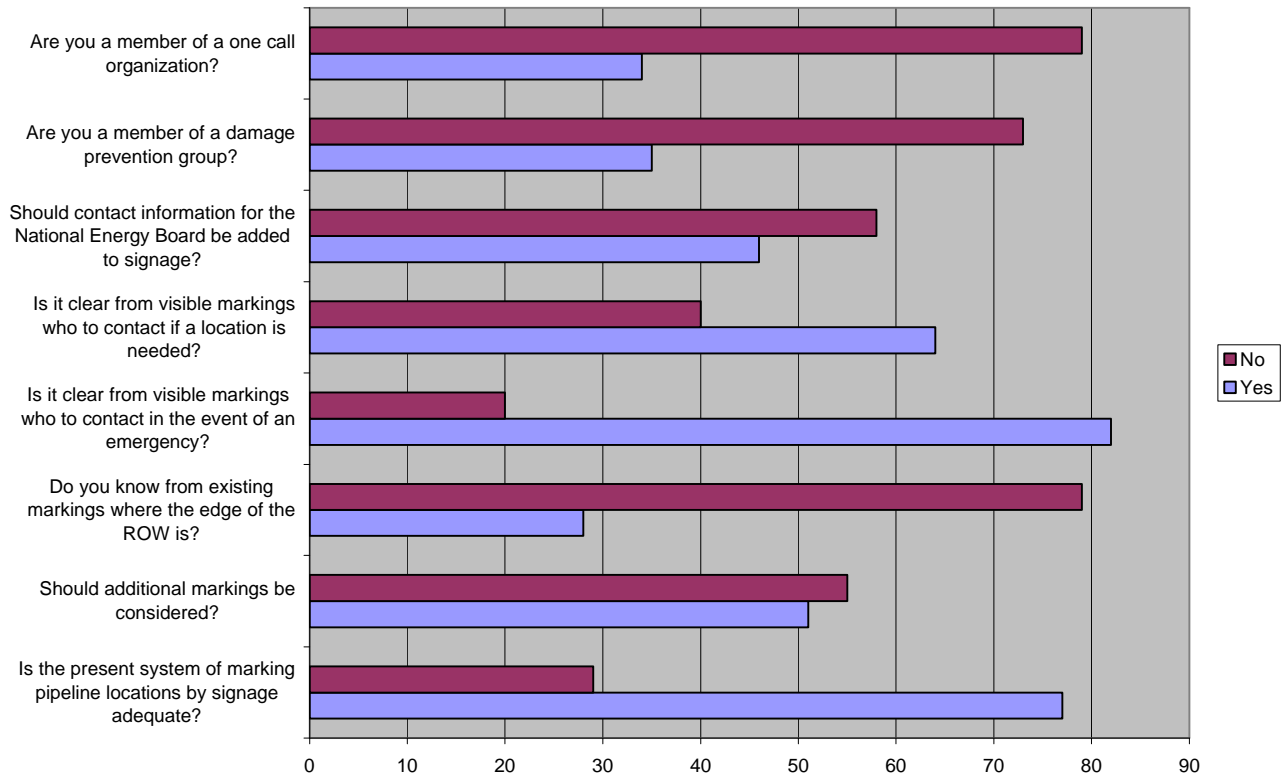
*(3) On an application to the Board for leave to work or prospect for mines or minerals, the applicant shall submit a plan and profile of the portion of the pipeline to be affected thereby, giving all reasonable and necessary information and details respecting the proposed operations.*

*Terms of leave*

(4) *The Board may grant the application referred to in subsection (3) on such terms and conditions for the protection and safety of the public as to the Board seem expedient, and may order that such things be done as under the circumstances appear to the Board best adapted to remove or diminish the danger arising or likely to arise from the proposed operations.*

At present, the Board has no authority to exempt prospecting activities within 40 metres of a pipeline ROW from requiring leave of the Board. Pipeline companies can not approve any prospecting activities (including seismic exploration) within 40 metres of a federally regulated pipeline ROW. Approval must be obtained from the Board. The Board is exploring its options with respect to the administration of section 81.

**Figure I-4 : Aggregate Pipeline Signage & Other Identifiers**



More than 72% of respondents indicated that pipeline signage is adequate in their opinion and less than 50% felt that any additional markings should be considered.

The NEB defines “pipeline” as:

*"pipeline" means a line that is used or to be used for the transmission of oil, gas or any other commodity and that connects a province with any other province or provinces or*

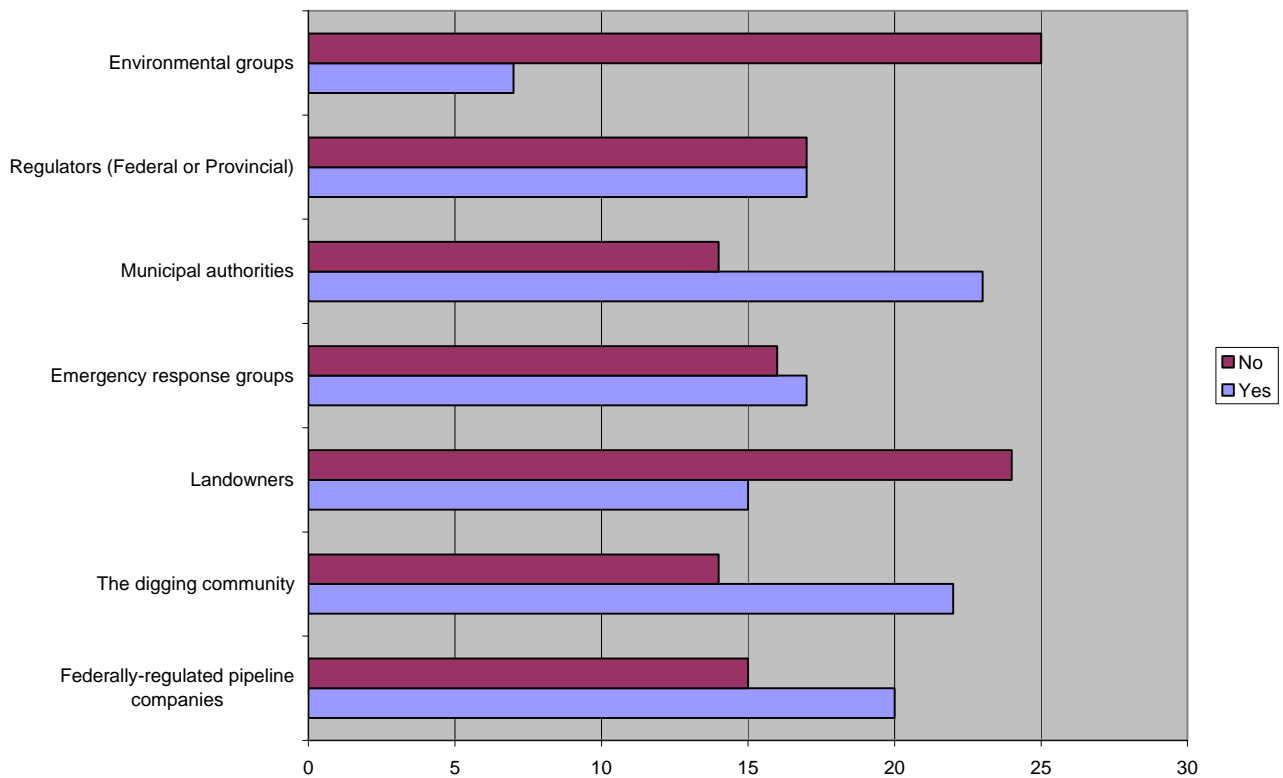
*extends beyond the limits of a province or the offshore area as defined in section 123, and includes all branches, extensions, tanks, reservoirs, storage facilities, pumps, racks, compressors, loading facilities, interstation systems of communication by telephone, telegraph or radio and real and personal property and works connected therewith, but does not include a sewer or water pipeline that is used or proposed to be used solely for municipal purposes;*

This definition means that the physical ROW is in fact a “pipeline” (real and personal property and works). Therefore, controlled activities near NEB regulated “pipelines” are governed by setback distances from the edge of the ROW and not the centre line of the pipe. Given that only 26% of respondents indicated they knew where the edge of the ROW is there is an obvious need for enhanced communication and perhaps simpler regulations.

Approximately 80% of respondents indicated that markings provided clear direction on who to contact in the event of an emergency. One of the Board’s concerns with respect to this issue is regarding ownership transfers. When ownership is transferred, it is imperative that signage always reflect a current and working emergency contact number.

The vast majority of respondents were not members of any damage prevention organization(s) or one call organizations.

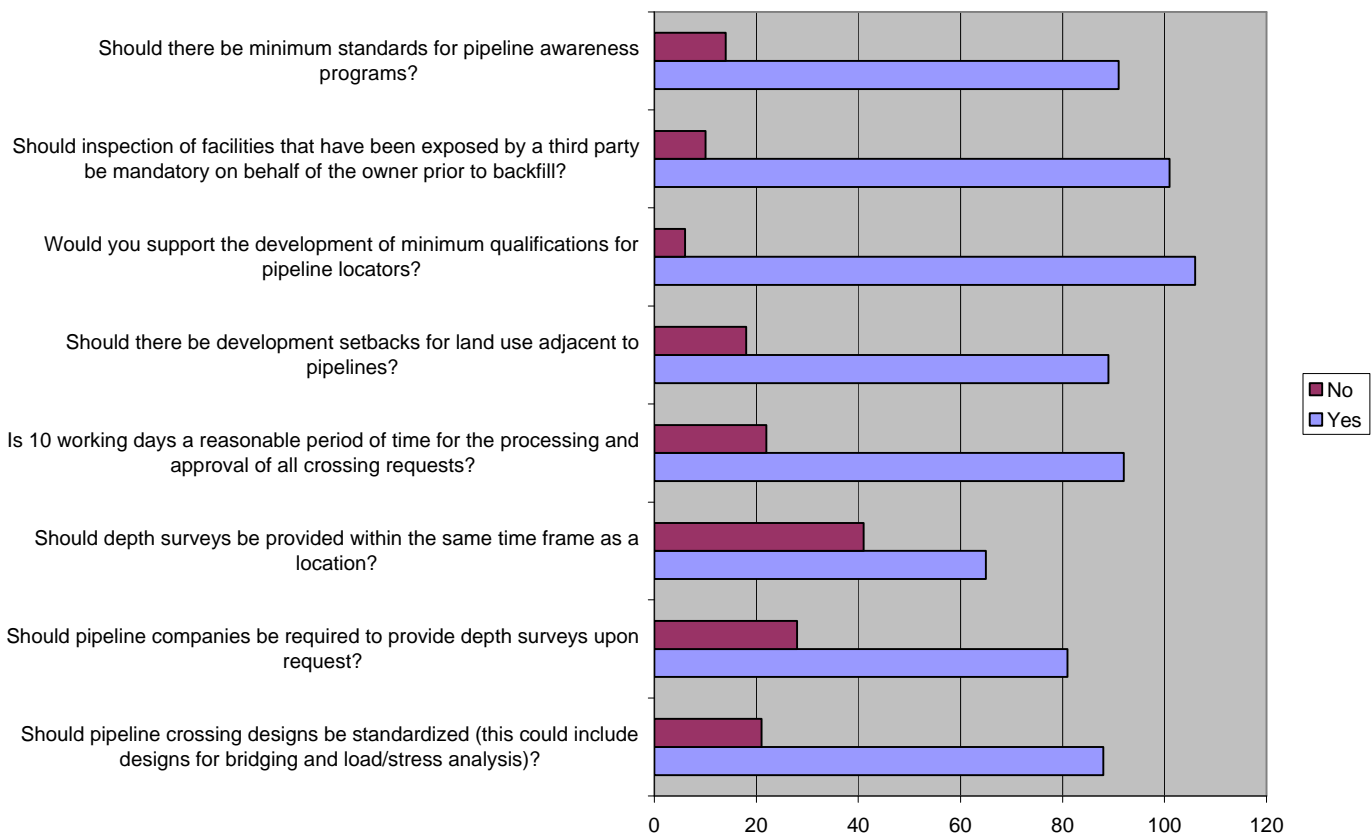
**Figure I-5 : Aggregate Damage Prevention Organizations**



The next section of the survey dealt was directed at persons or organizations currently involved in damage prevention organizations (such as EAPUOC Edmonton Area Pipeline and Utility Operators Committee). The responses received with respect to membership in existing damage prevention organizations were varied. Thirty-five (35) respondents indicated they were members of a damage prevention organization. Thirty-nine (39) respondents (more than the number of respondents who indicated they were members of damage prevention organizations) indicated that landowners should be represented on damage prevention groups. The obvious inference is that many stakeholders who are not represented within damage prevention organizations would like to become involved.

Responses to section 6 suggest that participation in damage prevention organizations should be non-exclusive.

**Figure I-6 : Aggregate Crossings and Land Use**



There were no ambiguous findings in response to the questions contained in section 7. Respondents overwhelmingly support the following items for consideration in the development of the DPR:

- standardized crossing designs;
- depth surveys upon request (although not necessarily within the same time frame as routine locate requests);

- 10 working days for processing of crossing requests;
- recommended and legislated development setbacks;
- establishment of minimum qualification requirements for pipeline locators;
- mandatory inspection of exposed pipelines prior to backfilling; and
- minimum standards for awareness programs

Ideally, crossing designs (including loading calculations and bridging requirements / practices) would be included within clause 10 of *CSA Z662 - Oil and Gas Pipeline Systems*. These requirements could then be adopted by reference into the appropriate Regulations. The NEB will be working towards the formation of a working group to look into the development of standards respecting crossing designs.

At present, there are no recognized certifications required or available for pipeline locators although there appears to be movement towards this objective within the United States. Until such time as these certifications are developed and accepted within industry, it may be necessary for the NEB to develop guidance regarding minimum qualifications for locators within the proposed Regulations.

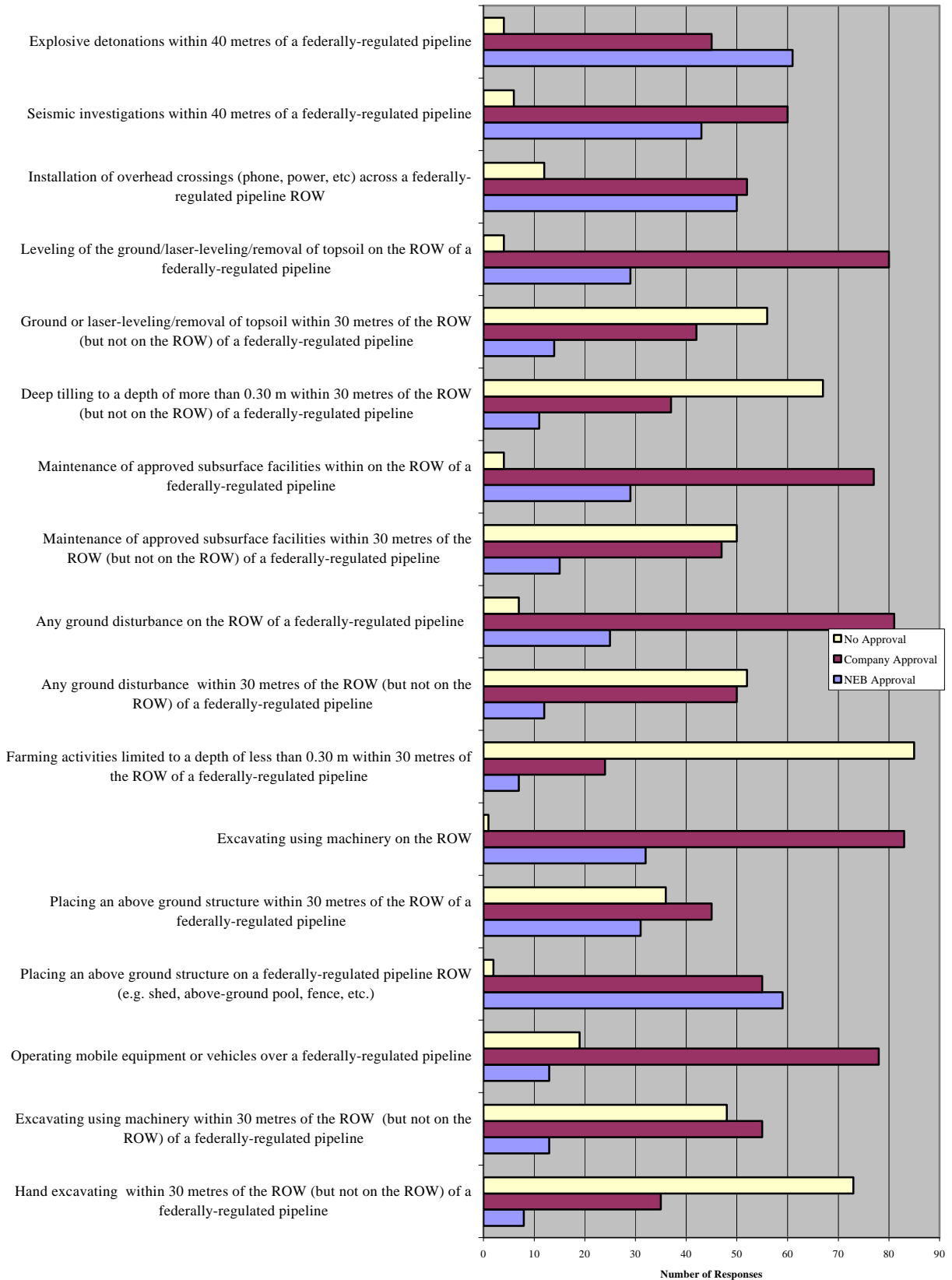
The issues surrounding development setbacks are many and include:

- cost effect of imposing restrictions on development;
- disposition of existing developments that may not be compliant;
- determination of “reasonable” setback distances; and
- individual rights.

The inclusion of legislated setbacks within the DPR will be considered in the development of the Regulation and companion guidance notes. The source for this information could be the draft report developed by the now defunct Major Industrial Accidents Council of Canada (MIACC) entitled *Land Use Planning With respect To Pipelines - A Guideline For Local Authorities, Developers And Pipeline Operators* (1998). This report does not specifically recommend setback distances but does discuss the items which should be considered in developing setbacks. A copy of this draft report is included in Appendix X.

Feedback was received indicating that the NEB should develop a document or guidelines as to the contents of an awareness program and what such a program should look like.

**Figure I-7 : Aggregate Approvals**



Section 112(5) of the NEB Act provides the NEB with the authority to make Regulations establishing conditions under which the leave of the Board is not required for activities within 30 metres of a federally regulated pipeline. Section 9 of the survey was intended to capture opinions as to what activities should be exempted from the need for Board approval as permitted by section 112(5).

Responses were mixed and indicate that the majority of exemptions within the proposed Regulations should be at the discretion of the Board (subject to continued Stakeholder involvement). However, there were some commonly held opinions among respondents.

Respondents indicated that the following activities could be permitted without any formal approval:

- hand excavating within 30 m of a pipeline ROW;
- farming activities limited to a depth of less than 0.30 m within 30 m of a pipeline ROW;
- deep tilling to a depth of more than 0.3 m within 30 m of a pipeline ROW (but not on the ROW); and
- ground levelling within 30 m of a pipeline ROW (but not on the ROW).

The following activities were suggested to be dependent upon the approval of the pipeline company:

- operating mobile equipment or vehicles over a pipeline;
- excavating using machinery on the pipeline ROW;
- any ground disturbance on the ROW;
- maintenance of approved subsurface facilities within the ROW;
- ground levelling on the ROW; and
- seismic investigations within 40 m of the ROW.

The NEB does not currently have the authority to make a Regulation which would delegate approval authority for seismic investigations within 40 metres of the ROW to the company. Other than that, all of the responses appear to indicate a willingness to have all activities on the ROW (other than hand excavation and shallow farming activities) subject to the approval of the pipeline company.

Respondents did not indicate a strong preference for requiring that any of the listed activities be subject to the approval of the NEB. However, a slight majority of respondents did favour having the following activities subject to the approval of the Board:

- placing an above ground structure on a federally regulated pipeline ROW; and
- explosive detonations within 40 m of the ROW

The mixed response surrounding the necessity of approval for excavating within 30 m of the ROW but not on the ROW is interesting. Just over 40% of respondents indicated that no

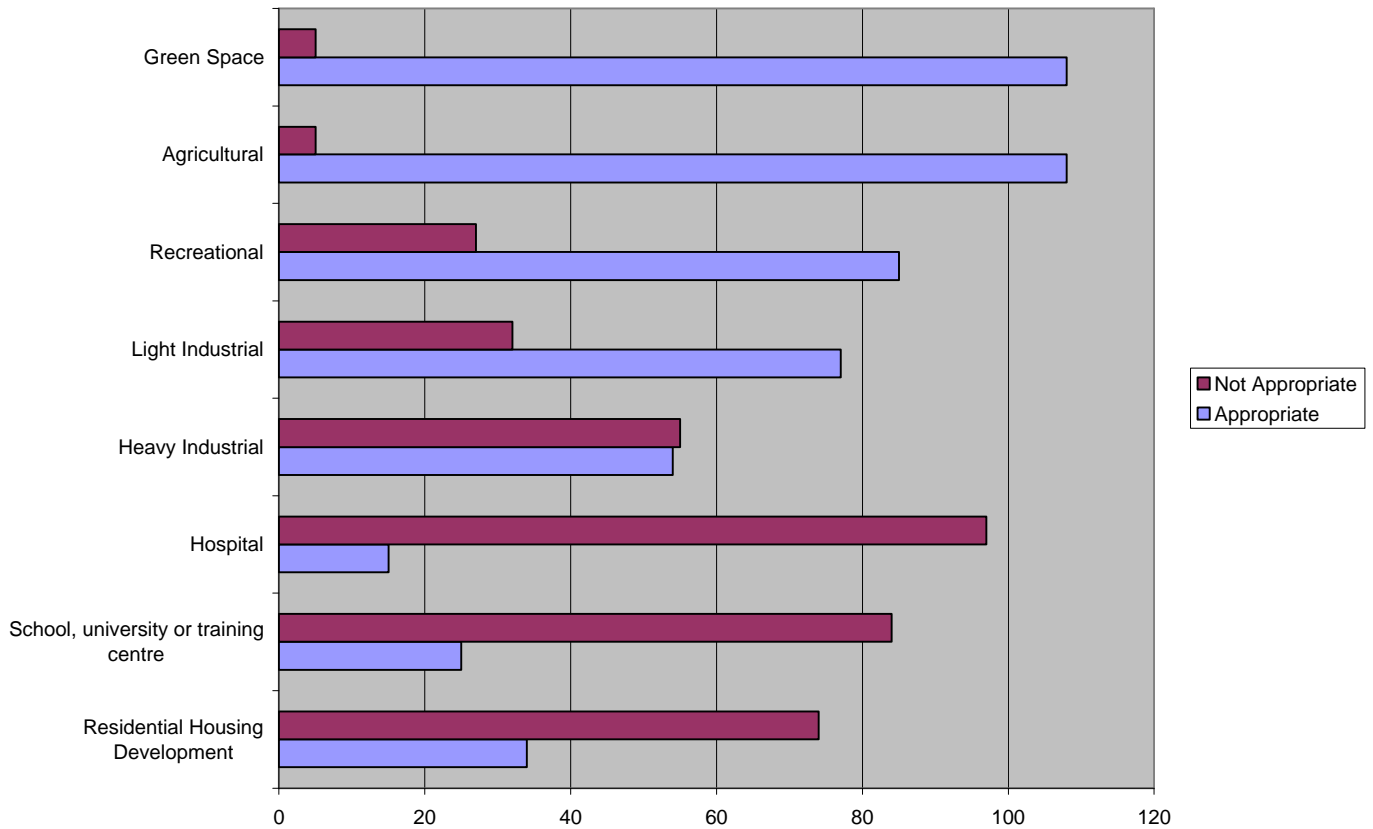


approval should be required. Forty-seven percent (47%) indicated that approval of the company should be required. A reasonable alternative, may be to require that the pipeline be located prior to any powered excavation within 30 metres of the ROW but not on the ROW. This would remove the current requirements for approval while still ensuring the safety of all persons and the protection of the environment.

Section 112 of the NEB Act is reproduced below for information.

- 112
- (1) *Subject to subsection (5), no person shall, unless leave is first obtained from the Board, construct a facility across, on, along or under a pipeline or excavate using power-operated equipment or explosives within thirty metres of a pipeline.*
  - (2) *Subject to subsection (5), no person shall operate a vehicle or mobile equipment across a pipeline unless leave is first obtained from the company or the vehicle or mobile equipment is operated within the travelled portion of a highway or public road.*
  - (3) *The Board may, on granting an application for leave under this section, impose such terms and conditions as it considers proper.*
  - (4) *The Board may direct the owner of a facility constructed across, on, along or under a pipeline in contravention of this Act or the Board's orders or regulations to do such things as the Board considers necessary for the safety of the pipeline and may, where the Board considers that the facility may impair the safe operation of the pipeline, direct the owner to reconstruct, alter or remove the facility.*
  - (5) *The Board may make orders or regulations governing*
    - (a) *the design, construction, operation and abandonment of facilities constructed across, on, along or under pipelines;*
    - (b) *the measures to be taken by any person in relation to*
      - (i) *the construction of facilities across, on, along or under pipelines,*
      - (ii) *the construction of pipelines across, on, along or under facilities, other than railways, and*
      - (iii) *excavations within thirty metres of a pipeline; and*
    - (c) *the circumstances in which or conditions under which leave under this section is not necessary.*
  - (5.1) *Without limiting the generality of paragraph (5)(c), orders or regulations made under that paragraph may provide for the prohibiting of excavations in an area situated in the vicinity of a pipeline, which area may extend beyond thirty metres of the pipeline, during the period that starts when a request is made to a pipeline company to locate its pipeline and ends*
    - (a) *at the end of the third working day after the day on which the request is made; or*
    - (b) *at any later time that is agreed to between the pipeline company and the person making the request.*

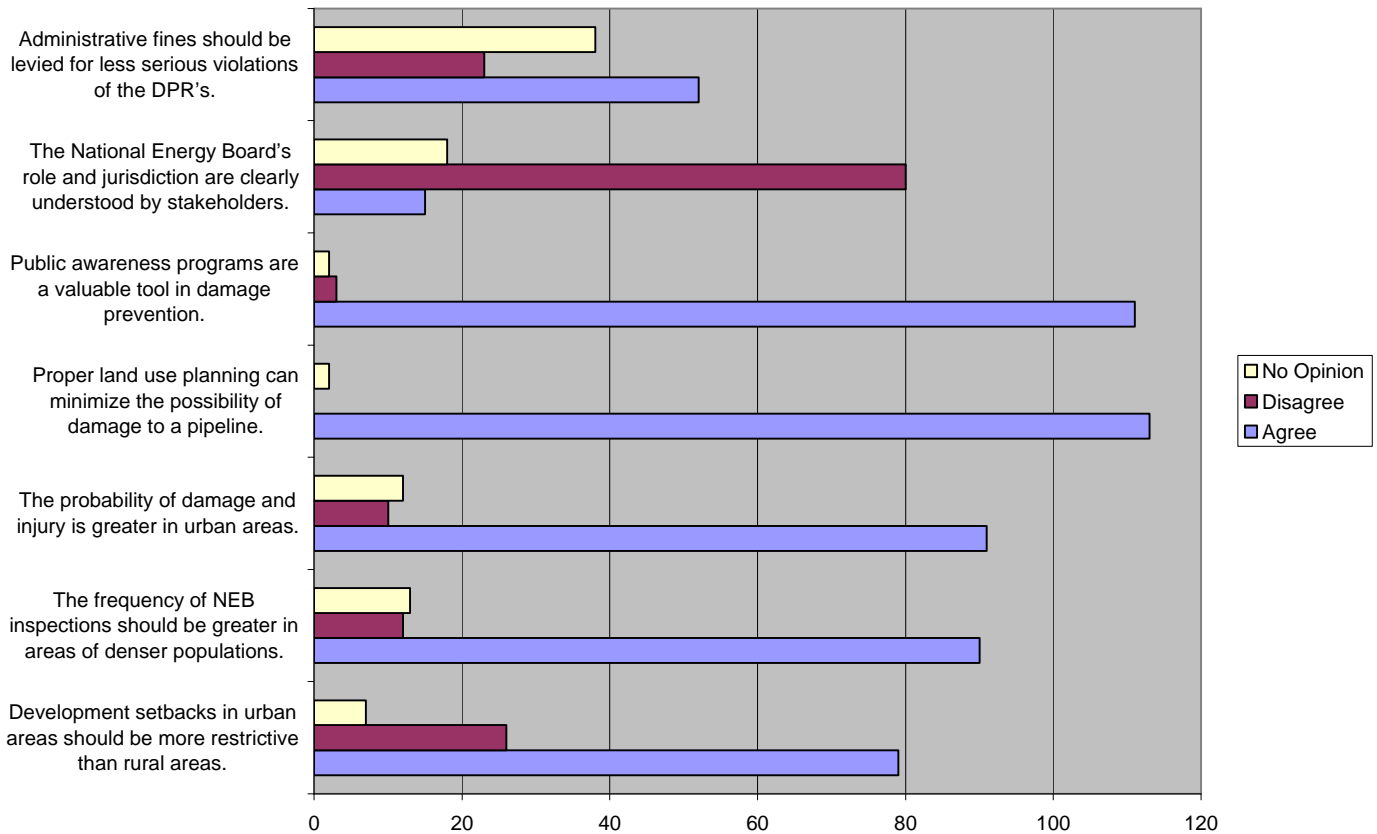
**Figure I-8 : Land Use**



Of all the various sections within the survey, responses were by far the most consistent in section 10. There is a clear pattern of increased acceptance as respondents moved from land uses such as residential through to green space. The cross over from appropriate to inappropriate land use occurs at heavy industrial usage.

The information obtained from respondents to section 10 will be used in the development of any land use and setback guidelines or Regulations which may be considered by the Board.

**Figure I-9 : General**



The questions in section 11 were used to gauge effectiveness of current Regulations and programs as well as to determine opinions among stakeholder groups.

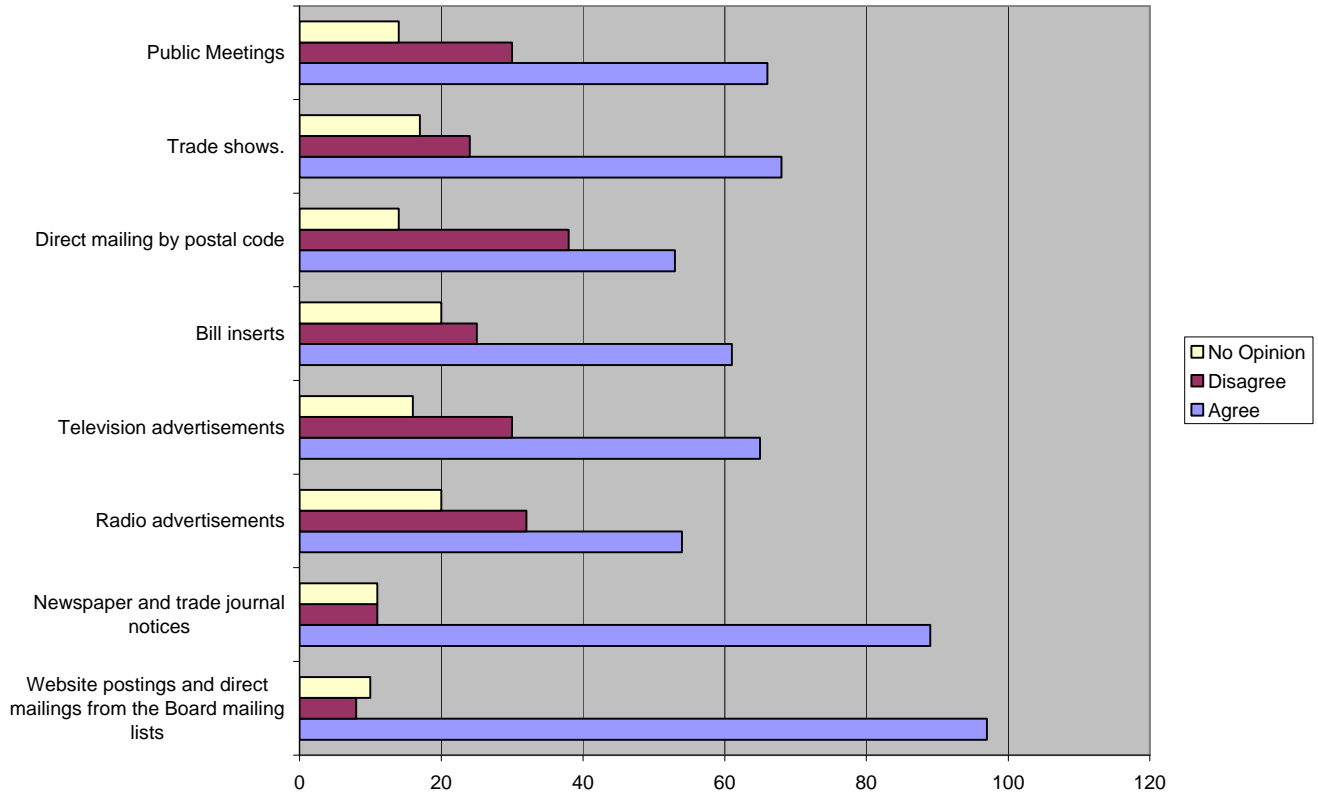
Based upon the results as a whole it is clear that:

- the NEB’s role and jurisdiction are not well understood by stakeholders;
- public awareness programs are a valuable tool in damage prevention;
- proper land use planning is essential in reducing incident risk and frequency; and
- urban areas require a greater degree of protection and enforcement due to increased frequency of activities having the potential to damage a pipeline.

Respondents to section 11 also indicate a preference for the development of an administrative system of fines for less serious violations of the proposed Regulations. If initiated, this would be consistent with the best practice recommendations arising from the *Common Ground* study done under the auspices of the Office of Pipeline Safety in the US and published in August 1999.

If initiated, any fines would probably be small and would be used by the NEB as an educational rather than a punitive tool.

**Figure I-10 : Communication Strategies**



The intention of section 12 was to determine what methods could be used to best communicate the contents of the proposed Regulations with stakeholders. From the outset, it has been clear that the number of stakeholders for this particular regulatory initiative is immense. The current *Pipeline Crossing Regulations* and the proposed *DPR* place legislative restrictions on anyone who proposes to perform any activity near a pipeline ROW.

Everyone who performs an excavation within 30 metres of a NEB regulated pipeline or who crosses a pipeline right of way comes under the authority of the NEB Act. The fact that many of these activities are of negligible risk does not alter the fact that they are the regulatory responsibility of the Board. Therefore, the number of Canadians directly impacted by the proposed DPR is very large. As such, the NEB is obligated to communicate the contents of the new Regulations to as many affected parties as is practicable. This may mean the development and use of media tools which are not normally employed by the Board such as radio and/or television advertisements.

The clear direction from respondents is that the NEB should use any and all means to ensure that the proposed Regulations are communicated and accepted.

## 4. Survey Analysis

The data presented in tabular form in this section is based upon the responses of the aggregate stakeholder groups presented in Table 1. The columns labelled “high” contain the highest favourable response by individual stakeholder group. For example, the first row of Table 6 indicates that more government respondents believe that provincial law requires you to locate underground utilities prior to any excavation than any of the other aggregate stakeholder groups. The stakeholders within the “Other Users” category have the lowest level of belief in this requirement or statement.

**Table 6 - Analysis of Pipeline Locating and Clearance Data**

	<b>Yes (high)</b>	<b>Yes (low)</b>
Are you currently required by provincial law to locate underground utilities prior to any excavation?	76% (Government)	64% (Other Users)
Should you be required by federal law to obtain a pipeline locate prior to any excavation on land which is crossed by a federally-regulated pipeline?	88% (Government)	68% (Affected)
Would you support legal requirement that would require federally-regulated pipeline companies to be members of one call centres where they exist?	96% (Other Users)	83% (Pipeline Companies)
Would you support adoption of a standard colour code for marking the location of underground utilities?	100% (Pipeline Companies)	90% (Affected)
Do you know how to obtain a locate of underground facilities?	100% (Pipeline Companies)	74% (Affected)
Should there be accuracy requirements for locations (for example, the surface markings placed by the locator would have to be accurate to within $\pm\pm$ 0.60 m).	100% (Other Users)	54% (Utilities)
Is a 0.30 metre separation between underground facilities reasonable (see figure 1 below)?	65% (Affected Parties)	55% (Government)
Should shallow surface disturbances (less than or equal to 0.30 m) such as discing, tilling, cultivation or grading be permitted overtop a pipeline without notification?	81% (Affected Parties)	65% (Government)

The results indicate general agreement among stakeholders but reveal some interesting things. Only 74% of the “Affected Parties” stakeholder grouping indicated that they knew how to obtain a locate. If the proposed Regulation requires that locates be performed prior to any excavation on land upon which there is a pipeline prior to excavation, there is an obvious need for improved communication with this stakeholder group, particularly with respect to how to obtain locates.

**Table 7 - Analysis of Reporting Data**

	<b>Aggregate Preference (high)</b>	<b>High</b>	<b>Low</b>
Unauthorized excavation within 30 metres of the ROW	48% (Reported to Pipeline Company)	61% (Pipeline Companies)	35% (Affected)
Unauthorized vehicular use of the ROW	65% (Reported to Pipeline Company)	83% (Pipeline Companies)	47% (Utilities)
Unauthorized blasting associated with excavation work within 30 metres of the ROW	69% (Reported to NEB)	80% (Utilities)	58% (Other Users)
Unauthorized blasting associated with seismic exploration within 40 metres of the ROW	63% (Reported to NEB)	67% (Affected)	60% (Utilities)
Unauthorized prospecting activities within 40 metres of the ROW	42% (Reported to Pipeline Company)	54% (Utilities)	29% (Affected)
Unauthorized contact with a of a federally-regulated pipeline resulting in no discernable damage (a “near miss”)	69% (Reported to NEB)	79% (Pipeline Company)	63% (Other Users)
Unauthorized contact with a of a federally-regulated pipeline resulting in coating damage?	79% (Reported to NEB)	88% (Pipeline Company)	67% (Utilities)
Authorized excavation work performed near a federally-regulated pipeline resulting in coating damage?	66% (Reported to NEB)	76% (Affected)	40% (Utilities)
Any unauthorized third party activities	55% (Reported to Pipeline Company)	73% (Pipeline Company)	39% (Affected)

**Table 8 - Analysis of Pipeline Signage and Other Indicators Data**

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Is the present system of marking pipeline locations by signage adequate?	Yes (73%)	95% (Pipeline Companies)	55% (Affected)
Should additional markings be considered?	No (52%)	77% (Pipeline Companies)	38% (Affected & Government)
Do you know from existing markings where the edge of the ROW is?	No (74%)	93% (Utilities)	65% (Pipeline Companies & Government)
Is it clear from visible markings who to contact in the event of an emergency?	Yes (80%)	96% (Pipeline Companies)	67% (Other Users)
Is it clear from visible markings who to contact if a location is needed?	Yes (62%)	75% (Pipeline Companies)	55% (Other Users)
Should contact information for the National Energy Board be added to signage?	No (56%)	82% (Pipeline Companies)	38% (Government)
Are you a member of a damage prevention group?	No (68%)	80% (Affected Parties)	30% (Pipeline Companies)
Are you a member of a one call organization?	No (70%)	87% (Other Users)	38% (Pipeline Companies)

The survey results indicate that:

- the present system of marking pipeline locations with signage is adequate overall but there is a need to ensure they are understood by all stakeholders. Additional marking methods should be employed where justified;
- the majority of stakeholders do not know where the edge of the ROW is and as such enforcement of NEB Regulations which are based on the NEB definition of pipeline (ie - edge of ROW for setback) is problematic in most circumstances;
- emergency contact information needs to be better communicated through signage;
- awareness of contacts for having locations performed needs to be heightened;
- there may be justification in having the name of the Regulator on signage if not actually including contact information (the predominant fear is that contact information for the NEB would be confused with emergency contact information); and
- wider membership in damage prevention organizations and once call centres needs to be encouraged and promoted.

**Table 9 - Analysis of Crossings and Land Use Data**

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Should pipeline crossing designs be standardized (this could include designs for bridging and load/stress analysis)?	Yes (81%)	92% (Utilities)	70% (Pipeline Companies)
Should pipeline companies be required to provide depth surveys upon request?	Yes (74%)	95% (Other Users)	41% (Pipeline Companies)
Should depth surveys be provided within the same time frame as a location?	Yes (61%)	79% (Affected Parties)	29% (Pipeline Companies)
Is 10 working days a reasonable period of time for the processing and approval of all crossing requests?	Yes (81%)	86% (Affected Parties)	71% (Pipeline Companies)
Should there be development setbacks for land use adjacent to pipelines?	Yes (83%)	91% (Government)	63% (Affected Parties)
Would you support the development of minimum qualifications for pipeline locators?	Yes (95%)	100% (Affected Parties & Utilities)	90% (Government)
Should inspection of facilities that have been exposed by a third party be mandatory on behalf of the owner prior to backfill?	Yes (91%)	100% (Affected Parties)	82% (Other Users)
Should there be minimum standards for pipeline awareness programs?	Yes (87%)	95% (Affected Parties)	77% (Pipeline Companies & Utilities)

The survey results indicate that:

- standard crossing designs and engineering analysis methods should be developed for the industry;
- depth surveys should be provided upon request but may take longer to complete than routine locates due to technical limitations of locating equipment and the need for confirmatory probing and/or excavation;
- the current requirement for companies to provide approval or reasons for denial with respect to crossing requests is well accepted but companies should be encouraged to provide faster turnaround times whenever possible;
- there should be recommendations and guidance with respect to reasonable development setbacks;
- there is a need to establish standardized training and/or minimum qualifications for persons performing locations of underground facilities;
- inspection prior to backfill should be enshrined in legislation; and
- standards for awareness programs should be developed



**Table 10 - Analysis of Approval Data**

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Hand excavating within 30 metres of the ROW (but not on the ROW) of a federally-regulated pipeline	48% (No Approval)	80% (Utilities)	58% (Pipeline Companies)
Excavating using machinery within 30 metres of the ROW (but not on the ROW) of a federally-regulated pipeline	47% (Company Approval)	63% (Pipeline Companies)	39% (Other Users)
Operating mobile equipment or vehicles over a federally-regulated pipeline	71% (Company Approval)	91% (Pipeline Companies)	57% (Affected Parties)
Placing an above ground structure on a federally-regulated pipeline ROW (e.g. shed, above-ground pool, fence, etc.)	51% (NEB Approval)	61% (Other Users)	42% (Pipeline Companies)
Placing an above ground structure within 30 metres of the ROW of a federally-regulated pipeline	40% (Company Approval)	60% (Utilities)	30% (Other Users)
Excavating using machinery on the ROW	72% (Company Approval)	92% (Pipeline Companies)	55% (Affected Parties)
Farming activities limited to a depth of less than 0.30 m within 30 metres of the ROW of a federally-regulated pipeline	73% (No Approval)	75% (Pipeline Companies)	68% (Affected Parties)
Any ground disturbance within 30 metres of the ROW (but not on the ROW) of a federally-regulated pipeline	46% (No Approval)	55% (Other Users)	33% (Pipeline Companies)
Any ground disturbance on the ROW of a federally-regulated pipeline	72% (Company Approval)	96% (Pipeline Companies)	52% (Affected Parties)
Maintenance of approved subsurface facilities within 30 metres of the ROW (but not on the ROW) of a federally-regulated pipeline	45% (No Approval)	55% (Other Users)	39% (Pipeline Companies)
Maintenance of approved subsurface facilities within on the ROW of a federally-regulated pipeline	70% (Company Approval)	87% (Pipeline Companies)	55% (Affected Parties)
Deep tilling to a depth of more than 0.30 m within 30 metres of the ROW (but not on the ROW) of a federally-regulated pipeline	58% (No Approval)	73% (Utilities & Affected Parties)	48% (Pipeline Companies)

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Ground or laser-levelling/removal of topsoil within 30 metres of the ROW (but not on the ROW) of a federally-regulated pipeline	50% (No Approval)	59% (Affected Parties)	35% (Pipeline Companies)
Levelling of the ground/laser-levelling/removal of topsoil on the ROW of a federally-regulated pipeline	71% (Company Approval)	83% (Pipeline Companies)	55% (Affected Parties)
Installation of overhead crossings (phone, power, etc) across a federally-regulated pipeline ROW	46% (Company Approval)	65% (Pipeline Companies)	39% (Other Users)
Seismic investigations within 40 metres of a federally-regulated pipeline	55% (Company Approval)	73% (Pipeline Companies)	50% (Utilities & Affected Parties)
Explosive detonations within 40 metres of a federally-regulated pipeline	55% (NEB Approval)	60% (Affected Parties)	30% (Pipeline Companies)

The survey results indicate that in the opinion of stakeholders:

- low risk activities such as hand excavation within 30 m of a pipeline (but off the ROW), shallow disturbance farming activities, off ROW ground disturbances, and maintenance of existing subsurface facilities off of the ROW should be permitted without a requirement for approval (locations may still be necessary);
- NEB approval should be required only for high risk activities such as the construction of facilities within a ROW and explosive detonations within 40 m of the pipeline; and
- Companies should be largely responsible for damage prevention and approvals for work within their ROW.

**Table 11 - Analysis of Land Use Data**

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Residential Housing Development	69% (Inappropriate)	81% (Government)	59% (Pipeline Companies & Other Users)
School, university or training centre	77% (Inappropriate)	84% (Affected Parties)	73% (Pipeline Companies & Other Users)
Hospital	87% (Inappropriate)	93% (Utilities)	73% (Other Users)
Heavy Industrial	50% (Inappropriate)	75% (Affected Parties)	36% (Other Users)
Light Industrial	71% (Appropriate)	82% (Other Users)	58% (Affected Parties)
Recreational	76% (Appropriate)	87% (Utilities)	70% (Other Users)
Agricultural	96% (Appropriate)	100% (Utilities & Pipeline Companies)	90% (Affected Parties)
Green Space	96% (Appropriate)	100% (Utilities & Pipeline Companies)	95% (Affected Parties)

The survey results indicate that in the opinion of stakeholders the following constitute appropriate land use adjacent to a pipeline:

- light industrial;
- recreational;
- agricultural; and
- green space.

**Table 12 - Analysis of General Data**

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Development setbacks in urban areas should be more restrictive than rural areas.	75% (Agree)	92% (Utilities)	55% (Pipeline Companies)
The frequency of NEB inspections should be greater in areas of denser populations.	88% (Agree)	95% (Affected Parties)	77% (Pipeline Companies)
The probability of damage and injury is greater in urban areas.	90% (Agree)	100% (Utilities)	81% (Pipeline Companies)
Proper land use planning can minimize the possibility of damage to a pipeline.	100% (Agree)	100% (All)	100% (All)
Public awareness programs are a valuable tool in damage prevention.	97% (Agree)	100% (Pipeline Companies, Utilities, and Other Users)	95% (Affected Parties)
The National Energy Board's role and jurisdiction are clearly understood by stakeholders.	84% (Disagree)	90% (Pipeline Companies)	56% (Other Users)
Administrative fines should be levied for less serious violations of the DPR's.	69% (Agree)	80% (Pipeline Companies)	53% (Affected Parties)

The results indicate that the majority of stakeholders recognize that the risk of an incident increases proportional to the activity base and land use. As such, urban areas may require a higher degree of effort with respect to damage prevention initiatives including planning and setbacks.

It is also clear from the survey that the NEB needs to enhance the communication of its role and responsibilities to stakeholders.

The majority of stakeholders within all groups have indicated a preference for the development of a system of fines for less serious violations of the Regulations. These fines would likely be used primarily as an educational tool and would not be punitive in their amounts.

**Table 13 - Analysis of Communications Data**

	<b>Aggregate Preference</b>	<b>High</b>	<b>Low</b>
Website postings and direct mailings from the Board mailing lists	92% (Agree)	100% (Other Users & Pipeline Companies)	79% (Utilities)
Newspaper and trade journal notices	89% (Agree)	97% (Government)	79% (Other Users)
Radio advertisements	63% (Agree)	70% (Government)	56% (Other Users)
Television advertisements	68% (Agree)	74% (Affected Parties)	63% (Other Users)
Bill inserts	71% (Agree)	77% (Government)	57% (Utilities)
Direct mailing by postal code	58% (Agree)	65% (Government)	45% (Utilities)
Trade shows	74% (Agree)	86% (Other Users & Utilities)	59% (Affected Parties)
Public Meetings	69% (Agree)	79% (Other Users)	60% (Affected Parties)

The survey results indicate that any and all methods of communication should be used to communicate with stakeholders as practicable. Published advertisements and website posting are the most favoured options with direct mailings being the least favoured.