

The Damage Prevention Process in Alberta

**Roles, Responsibilities and Expectations of Stakeholders in
the Prevention of Damage to Underground Facilities**



Version 7.0 Feb 2024

**UTILITY
SAFETY**
PARTNERS

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In 2022, the Alberta Common Ground Alliance (ABCGA) amalgamated with Alberta One Call Corporation to form the new Utility Safety Partner (USP), with the Joint Utility Safety Team uniting with this new entity.

USP is a province-wide, non-profit private corporation providing a one-stop damage prevention hub for over 850 asset-owner members and safety partner stakeholders. In addition to the familiar locate request notification center. USP also promotes overhead power line safety, provides regional safety ambassadors to increase public awareness, and coordinates and supports volunteer committees such as Best Practices, Education and Awareness, Training Standards and Government Relations.

USP members include representatives from local damage prevention committees, stakeholder industry associations, facility operators, ground disturbers, contract Locators, regulatory agencies, training organizations and the notification centre.

USP's Best Practices Committee includes representatives from local damage prevention committees, stakeholder industry associations, facility operators, ground disturbers, contract Locators, regulatory agencies, and training organizations.

The USP Training Standards Committee is responsible for establishing the minimum content of USP Standard 101, Ground Disturbance – Hazard Awareness and USP Standard 201, Ground Disturbance – Supervisory training programs.

Membership in the USP is open to any individual, corporation, association, or committee with an interest in the prevention of damage to underground facilities. New members are always welcome.

Mission Statement

We keep people, the environment, and utilities safe through education, awareness, engagement and locates to prevent contact with overhead and underground infrastructure.

Vision Statement

We are the trusted resource for utility safety.

Purpose

In the interests of worker safety, public safety, protection of the environment and preservation of the integrity of the underground infrastructure that provides goods and services to society, the purposes of the USP are:

- to prevent damage from ground disturbance activities by identifying, validating and promoting the adoption of damage prevention best practices among all stakeholders in the damage prevention process;
- to define and promote recognition and acceptance of the roles, responsibilities and

expectations of all stakeholder groups in the underground facility damage prevention process;

- to establish and maintain minimum program content for ground disturbance training programs;
- to establish and maintain a ground disturbance training program assessment and endorsement process to ensure minimum content consistency and relevance;
- to foster a co-operative approach to the resolution of issues among all the stakeholders in the underground facility damage prevention process;
- to foster a sense of shared responsibility for the prevention of damage to underground facilities;
- to advocate the development and implementation of fair, reasonable and practical damage prevention regulation that is based on best practices and acceptable to all stakeholder groups;
- to sponsor, promote and participate in public awareness, education and training programs related to the prevention of damage to underground facilities and safe ground disturbance activities;
- to evaluate publications, programs and services that are or may be of interest to members;
- to conduct activities that advance the purposes of the society and enhance the quality of the services provided to the society's members;
- to promote membership in the society and participation in achieving its purposes;
- to establish and maintain liaison with other related interest groups and organizations; and
- to serve as the provincial voice for damage prevention and ground disturbance training.

Activities

USP participates in a number of safety focused events at various locations across the province each year, as well as initiating a number of safety messages in numerous formats and on multiple platforms.

Stay Connected

Follow USP on your preferred social media and sign up for the eNewsletter – Click To Know What is Above and Below.

Maintaining these guidelines remains the focus of USP's Best Practices Committee.

INTRODUCTION

The prevention of damage to underground facilities will have a positive impact on worker safety, public safety, protection of the environment, and preservation of the integrity of the underground infrastructure that provides goods and services essential to today's society.

No owner/operator of underground facilities wants to have those facilities damaged and no member of the digging community wants to damage underground facilities. These are shared values from which a damage prevention process that is fair, reasonable, practical, based on best practices and supported and endorsed by the stakeholders, has developed. The process is a "work in progress" that has evolved and will continue to evolve and improve over time.

PURPOSE

The guidelines are based on the Canadian Common Ground Alliance (the "**CCGA**") National Best Practices and have been prepared by the stakeholders in the damage prevention process to explain the roles, responsibilities, and expectations of all parties involved in preventing damage to underground facilities when ground disturbances take place near underground facilities. They should be considered in conjunction with applicable acts, regulations and codes.

It is important to understand that regulatory requirements are minimum standards. Many owners/operators of underground facilities impose stricter requirements on ground disturbers working near their underground facilities.

The information in these guidelines will be of interest and assistance to anyone planning to excavate or disturb the ground in Alberta. They are applicable to homeowners as well as contractors. It will also be of interest and assistance to any owner/operator of underground facilities in the province.

Cautionary Note

It must be stressed that acceptance of and compliance with these guidelines is not universal among the owners/operators of underground facilities or the digging community. These guidelines, through the frequent use of the word "should", suggest the direction in which the damage prevention process in Alberta is moving, driven by the interests of worker safety, public safety, protection of the environment, and preservation of the integrity of the underground infrastructure.

Future Developments

As stakeholder awareness and acceptance of the expectations, roles, and responsibilities in the damage prevention process increases, these guidelines will be revised from time to time to reflect the evolution of the process.

Should readers of this document have any questions or concerns about any of the content contained in this description of the damage prevention process in Alberta, please email USP at info@utilitysafety.ca.

DEFINITIONS

To aid in the understanding of this document, the following definitions are supplied.

“CSA Z247” is the Canadian Standards Association’s Z247 Damage prevention for the protection of underground infrastructure Standard, as amended from time to time.

“Demarcation Point” (DM) means, as defined in CCGA National Best Practices (and slightly modified for this Alberta document), the point at which the Publicly-owned Facility Owner’s/Operator’s ownership of a distribution system, including connection assets, ends, Privately owned infrastructure may continue from this point that is not owned by or known to the Publicly-owned Facility Owner/Operator.

“Emergency” as defined in CSA Z247, means an “incident or condition that has caused or poses an immediate risk to health, life, property, or the environment.”

“Ground Disturber” means any person, partnership, corporation, public agency, agent, or other entity that is responsible for carrying out a ground disturbance.

“Hand expose” means any movement of earth using a hand tool (as defined in the *Alberta Occupational Health and Safety Act*) or by a non-destructive technique acceptable to the Owner/Operator.

“Hand Expose Zone” means the strip of land on each side of the locate marks for an underground facility other than a high-pressure pipeline, or 5 metres wide on each side of the locate marks for a high-pressure pipeline as defined by the *Alberta Occupational Health and Safety Act*. The Hand Expose Zone can be wider than noted for low or intermediate pressure pipeline systems and for other underground infrastructure, and, in those instances where the Owner/Operator requires caution around the underground facility, the Owner/Operator will have that information noted on the locate ticket.

“Locator” means, as defined in the CCGA National Best Practices, a person who is responsible to locate underground infrastructure.

“Member” or “Members” means Owners/Operators of underground infrastructure that have registered with the Utility Safety Partners.

“Notification Centre” means the Utility Safety Partners’ hub that provides a point of contact within the Province of Alberta, receives locate requests and notifies its potentially affected Members of any proposed construction or excavation.

Note: The purpose of the Click Before You Dig or Call Before You Dig service is to provide a point of contact so that Ground Disturbers can reach multiple Owners/Operators of registered underground infrastructure.

“Owners/Operators” are the owners/operators of the underground infrastructure on public and/or private lands. It includes persons, partnerships, co-operatives, corporations, governments, public agencies, or other entities that own, control, and/or operate underground

infrastructure. It also includes Publicly-owned Facilities and Privately-owned Facilities. **“Owner/Operator”** is the single version of this definition.

“Planner”, as defined in CSA Z247, is “person or persons responsible for planning the ground disturbance. This can include, but is not limited to, excavators, owners, homeowners, consultants, designers, and engineers”.

“Privately-owned Facility or Facilities” means underground assets that a landowner has installed on their owned property, or occasionally, across adjacent public land (including road rights-of-way) with the municipality’s permission. These facilities can include water, telecommunication, gas, security, irrigation and/or power facilities meant to extend services to other buildings or land owned by the customer. These are facilities installed and maintained by a landowner or the landowner’s agent solely for that landowner’s benefit.

“Publicly-owned Facility or Facilities” means underground assets that are owned and/or operated by utility agencies, petroleum and natural gas owners, telecommunication companies, municipalities, and/or provincial or federal government departments. These facilities can include trunk lines, pipelines, distribution and service lines up to the Demarcation Point (often a meter), primary and secondary electrical lines, and numerous other kinds of assets.

“Utility Safety Partners (USP)” means the province-wide, non-profit private corporation providing a one-stop damage prevention hub for Members and for safety partner stakeholders that was formed in 2021 by the former Alberta One-Call, Alberta Common Ground Alliance, and the Joint Utility Safety Team.

BEST PRACTICES

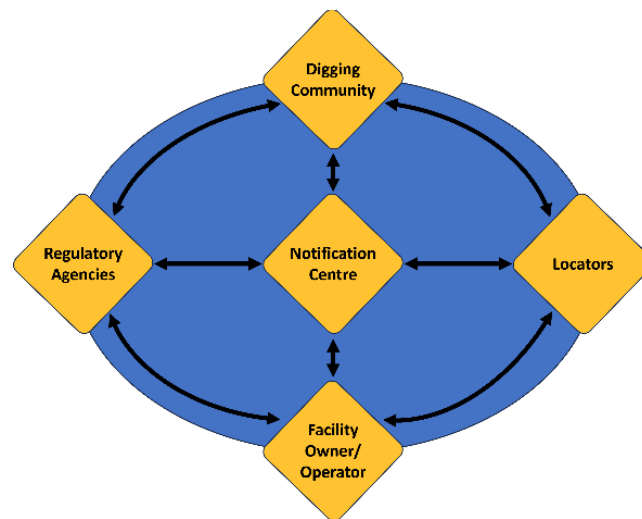
The Canadian Common Ground Alliance has produced a set of National Harmonized Best Practices which are continually updated on an annual basis. This Damage Prevention Process document (the “**DPP**”) builds on those best practices as they apply to Alberta. USP is a member of the CCGA and its National Best Practices Committee.

The CCGA National Harmonized Best Practices and this DPP document are meant to act as the “what” are the best practices in Alberta and “how” they are met. The two documents are meant to be complimentary.

The Damage Prevention Process

The prevention of damage to underground facilities has many stakeholders who are mutually dependent upon the successful execution of one another’s roles in the overall process.

The interrelationships of the various stakeholder groups are best illustrated graphically. With the exception of the Notification Centre, all the stakeholder groups shown on the next page can be divided into sub-groups.



The basic premises of a good and effective damage prevention process are that all Owners/Operators of underground facilities are registered with USP and that it is always best to “Click or Call Before You Dig.”

Damage prevention is a shared responsibility among the stakeholders. The exchange of accurate and timely information during the process, together with a genuine interest by all stakeholders, is critical for a successful outcome.

Planning and Design

The Damage Prevention Process in Alberta should start by following the recommendations that are outlined in the CCGA National Harmonized Best Practices. These best practices outline a number of activities and processes that can be used in the planning and/or design phases of a project that assist in minimizing damage. It can begin by pre-planning where utilities are installed within corridors, progressing to including utility infrastructure on development and/or engineering plans, gathering utility information for design purposes, and performing Subsurface Utility Engineering investigations prior to planning and performing a ground disturbance.

Additional commentary on these issues can be found in **Appendix A**.

Including Underground Facilities on Development and/or Engineering Plans

Including utility locations on development plans submitted to an authority having jurisdiction or on engineering plans prepared for an infrastructure project that depicts the location of existing facilities reduces utility risk. Going one step further, showing where proposed utilities are to be placed on plans showing the existing utility locations/alignments reduces that risk even further. The depictions need to be based on accurate information though, not on assumptions as to the underground facility's (or facilities') horizontal and/or vertical alignment.

Planning & Design Tickets

To aid in these pre-planning best practices, a Planner can submit a Planning & Design ticket. This is a request for information for planning purposes related to a future ground disturbance. Planning & Design tickets are not requests for locates, and are not valid for ground disturbances. Responses for the Members should be expected within 10 business days.

DAMAGE TO UNDERGROUND FACILITIES

Damage to an underground facility means any physical damage caused by unauthorized contact that results in a cost or a service disruption.

Damages to underground facilities is usually preventable and most often occurs due to a breakdown in the damage prevention process. The responsibility for preventing ground disturbance damage to underground facilities is shared by all stakeholders and includes elements such as:

- planning a ground disturbance;
- effective use of the Notification Centre;
- accurate and timely identification, locating and marking of underground facilities;
- adherence to ground disturbance rules, regulations, and best practices;
- proper installation of underground facilities;
- training;

- consequences for non-compliance; and
- strong public awareness and education programs.

Why is Prevention of Damage Important?

Alberta has a very extensive and complex underground infrastructure of pipes and cables valued in the tens of billions of dollars that has been built since the early 1900's. These underground systems supply goods, services, and connections that are essential to the functioning of today's society.

Every time a Ground Disturber disturbs the ground, there is a risk of damage to underground facilities. The possible consequences of damaging an underground facility include:

- loss of life
- personal injury
- environmental contamination
- evacuation of affected areas
- explosion, fire, flood or toxic gas escape
- disruption of essential services
- inconvenience to the public
- third party property damage
- contractor down time and loss of production
- loss of product and revenue
- costs to rehabilitate injured workers
- costs to repair damaged facility
- costs to rehabilitate environment
- costs to repair or replace construction equipment
- police, fire and ambulance costs
- lawsuits, legal costs
- medical costs
- administration costs
- increased WCB assessments
- increased insurance premiums
- increased costs to the taxpayers of Alberta
- reduced credibility with public
- reduction in ground disturber's ability to be competitive
- fines and/or jail terms

Damages that may not pose a threat to worker or public safety can cause vital facility outages for homes, businesses, financial institutions, hospitals, air traffic control operations, and emergency service providers.

Every time an underground facility is damaged by ground disturbance activities, some of these consequences become evident. When underground facilities are damaged, Albertans, as individuals, taxpayers, ratepayers, customers of the Owners/Operators of the facilities, or purchasers of construction services, directly or indirectly pay for the damages.

Any Ground Disturber or Owner/Operator of underground facilities in Alberta can report damage incidents or near miss events via the on-line Damage Information Reporting Tool (DIRT). USP produces an annual report that collects and analyzes critical information on underground damage and near-miss occurrences. It also provides recommendations to stakeholders about how to best protect underground infrastructure.

To register as a DIRT user, go to www.cga-dirt.com, click on “register”, then select “Alberta Virtual Private DIRT”. After USP has approved your registration, you will be able to report single events or upload files containing multiple events.

More information about the DIRT Reports can be found in **Appendix B**.

UNDERGROUND FACILITIES

The total length of the underground infrastructure network in Alberta is not known, although speculation would put it in excess of 4,000,000 km. The installation of underground facilities has been going on in Alberta for over a century and only rarely are existing underground facilities removed. For the most part, they are abandoned in place when they are no longer of use, and once abandoned, evidence of their existence may have been removed from the records.

This underground network increases in complexity and extent every year as more, and different types of, facilities are installed every day.

For the purposes of these guidelines, an underground facility, whether Privately or Publicly-owned, is anything below ground for use in the collection, storage, transmission, or distribution of:

- potable water
- reclaimed water
- irrigation water
- sewage
- storm water
- electronic communications
- telecommunications
- electrical energy
- oil
- natural gas
- steam
- heat

- petroleum products
- chemicals

Facilities themselves include:

- pipes
- conduits
- culverts
- wires
- cables
- tanks
- fibre-optics
- duct banks
- catch basins
- valve chambers
- wells and abandoned wells

There are other types of structures such as foundations and anchors which rely on the soil support for their performance, as well as survey monuments or survey control markers (as defined under the *Survey Act*) that are beyond the scope of these guidelines.

Underground Owners/Operators

Owners/Operators have underground facilities that are in public road allowances or road rights-of-way, other public rights-of-way, utility rights-of-way, easements, or within private property.

Underground Owners/Operators include, but are not limited to:

- government departments of various levels (municipal, provincial, federal, First Nations)
- oil and gas production and transmission companies;
- power transmission companies;
- public and private telecommunications owners;
- public and private utility owners;
- water and wastewater commissions; and
- water and gas co-ops.

Privately-owned Facilities

One of the current challenges to the damage prevention process is the issue of Privately-owned Facilities.

This type of Owner/Operator include homeowners, farmers, ranchers, and owners/operators of schools, colleges, universities, shopping centres, office parks, trailer parks, condominium and townhouse complexes, hospitals, military bases, exhibition parks, manufacturing complexes and other privately owned developments.

Many sites have their own internal sewer, water, telecommunication, communication, electric and gas distribution systems which may or may not be connected to the Publicly-owned Facilities. Some of the more common utility providers refer to these systems as “customer-owned facilities”. Privately-owned Facilities can also be defined

as the extension of a utility facility from the Publicly-owned Facility's Demarcation Point which differs from utility to utility.

Homeowners, for example, may have lawn sprinkler systems, telecommunications or electric lines running from the main building supplied by the "utilities" to other buildings such as garages or sheds. Sewer and water services from the property line to a residential building are owned by the landowner, not the agency that supplies water or collects sewage.

In rural Alberta, many landowners have private sewage disposal systems which might include septic tanks and tile beds, and water wells which might include a significant amount of underground piping. These too are Privately-owned Facilities.

Underground Facilities to be Locatable

A national best practice is to have underground facilities locatable. There are many ways this is being accomplished across the province such as using tone-able infrastructure or locator balls (RFID units, etc.) or installing tracer wires, and may also include permanent above and/or below ground markers.

Any new underground facility should be locatable by its inherent properties or by the Owner/Operator installing additional equipment to make their infrastructure locatable.

Some Owners/Operators are gathering survey grade information (or at least sub-centimeter coordinates) when they install new underground facilities. This information is for the horizontal alignment of a particular underground segment of non-locatable infrastructure as opposed to putting in RFID units or tracer wires. Those Owners/Operators should supply this information to Ground Disturbers when a locate is requested and should locate the facilities in the field when necessary.

THE DIGGING COMMUNITY

The digging community comprises anyone who engages in or is responsible for a ground disturbance, including, for example:

- homeowners
- farmers
- ranchers
- equipment operators
- consultants
- land surveyors
- developers
- municipalities
- provincial departments
- excavation contractors
- home builders
- landscapers
- fencing contractors
- federal departments
- railways
- Owners/Operators of underground facilities

The ultimate decision to have a piece of machinery disturb the ground rests with the operator of that piece of machinery. It is this person's responsibility to know what underground facilities could be affected by their activity and ensure that the horizontal position of the underground facilities are located and marked. Having and reviewing a completed locate ticket is a required step in knowing what is underground in the work space. Failing to do this is dangerous and puts the Ground Disturber and others at risk of harm, and the underground facilities at risk of damage.

GROUND DISTURBANCES

The Alberta Pipeline Act defines a ground disturbance as any work, operation or activity that results in a disturbance of the earth except:

- cultivation less than 450 mm in depth or
- a disturbance of the earth less than 300 mm in depth provided it does not reduce the earth cover over a underground pipeline to a height less than that provided when the pipeline was installed.
- Agricultural activities such as subsoil aeration and mechanical rock picking are considered ground disturbances if they disturb the earth to a depth of 450mm or more.
- The Alberta Occupational Health and Safety Code states that ground is disturbed if a work operation or activity on or under the existing surface results in a disturbance or displacement of the soil, but not if the disturbance or displacement is a result only of:
 - routine, minor road maintenance such as patching, street sweeping and the grading of gravel roads or
 - cultivation to a depth of less than 450 mm below the ground surface over a pipeline or
 - hand digging to a depth of not more than 300 mm below the ground surface, so long as it does not permanently remove cover over an underground facility.

In urban areas and on private property, many underground facilities are within 300 mm of the ground surface. Street light wires are often just behind the sidewalk or the curb. Telecommunications and electrical duct banks in downtown cores may be just under the asphalt. Telecommunications services to residences may have minimal cover.

The ground surface may have been re-contoured after an underground facility was installed, without the Owner's/Operator's knowledge, reducing the depth of cover to less than what might be expected.

For the purposes of these guidelines, the protection of underground facilities and the safety of workers and the general public, a ground disturbance should be

considered to be any disturbance of the earth, regardless of depth.

Activities that disturb the ground include, but are not limited to:

- digging
- excavation
- trenching
- plowing pipe or cable
- vertical drilling
- hydrovacing
- horizontal directional drilling
- vertical and horizontal augering
- tunneling, boring or pipe pushing
- cutting fire breaks
- pipe bursting
- ditch shaping
- grading and land contouring
- topsoil stripping
- land levelling
- tree planting / removal
- blasting and vibroseis
- mechanical rock picking
- subsoil aeration or stabilization
- driving or removing fence posts
- driving bars, rods, pins or anchors

Vehicles and Equipment Crossing Pipelines

Although not technically a ground disturbance, the unrestricted crossing of pipelines with vehicles and equipment has the potential to cause damage to pipelines. The Alberta Pipeline Rules (which have been recently revised) prohibit the operation of vehicles or equipment across a pipeline at any location that is not within the upgraded and traveled portion of a highway or public road without approval in writing from the Owner/Operator unless the stated exceptions in the Rules apply.

The Canadian Energy Regulator has slightly different rules and defines agricultural equipment as including planting equipment, tillage equipment, chemical applicators, and harvesters.

Additional information on pipeline processes and requirements can be found in the Pipelines subsection in the Special Situations portion of this document and in **Appendix C**.

IF YOU INTEND TO DISTURB THE GROUND

If the ground disturbance is to take place within a public road allowance, provincial highway right-of-way or utility right-of-way, the Ground Disturber may be required to obtain an excavation permit or written permission before disturbing the ground. If the ground disturbance is to install new facilities, utility line assignment permits (or their equivalents) may have to be obtained from the authority having jurisdiction over the right-of-way prior to construction.

Whether the ground disturbance is to take place on public or private land, the Alberta Occupational Health and Safety Code requires that all underground facilities potentially in conflict with the ground disturbance be identified and their horizontal alignments marked before the ground disturbance begins.

Sources of information on what underground facilities might be at the site of a proposed ground disturbance include:

- USP;
- signs or markers in the area;
- Alberta Energy Regulator and Canadian Energy Regulator - high pressure pipeline records;
- Ministry of Affordability and Utilities, Rural Utilities Branch - low pressure gas distribution pipeline records;
- Land Titles Office - Certificates of Title - to determine if a right-of-way, easement or caveat is registered against the property;
- local landowners or occupants; and
- visual evidence of cut lines, changes in vegetation, depressions in the land or scarring, buildings, or existing surface facilities.

The requirement to have the locations of all underground facilities marked applies to the entire digging community, not just contractors. Making arrangements to have locates done should be part of the planning process for the job.

The Role of USP in Ground Disturbances

Utility Safety Partners provides a communication service free of charge to any person requesting a locate anywhere in Alberta. USP processes the locate request and notifies potentially affected Members of the intent to disturb the ground in the area of the proposed ground disturbance.

USP does not perform locates, rather, it is the Owner's/Operator's responsibility to identify and mark the locations of their underground facilities before the ground disturbance takes place.

USP Notification Centre

USP Members operate the majority of underground facilities in the province. Registration of underground facilities with USP (membership) is mandated for all licensees under the jurisdiction of the Alberta Energy Regulator and the Canadian Energy Regulator. USP Members also include many voluntary members who acknowledge and advocate the need for a simple, one-window approach to initiate the damage prevention process.

USP's Notification Centre provides a communication service free of charge to any person requesting a locate anywhere in Alberta. USP processes the locate request and notifies potentially affected Members of the intent to disturb the ground in the area of the proposed ground disturbance.

Not all Owners/Operators with Publicly Owned Facilities are members of USP. It is the Ground Disturber's responsibility to determine if non-member Owners/Operators have underground facilities in the area and to notify them directly.

Click this link for a current list of USP Members:

<https://utilitysafety.ca/membership/member-list/>

Facilities that may not be identified via the USP notification process include unregistered fibre-optic lines, high voltage lines, or irrigation lines (usually on private property), as well as some service connections to existing buildings or proposed developments.

CLICK BEFORE YOU DIG

USP promotes "Click Before You Dig" as the preferred method of requesting a locate. Web locate requests can be placed 24 hours/day, 7 days/week, 365 days/year. Locate requests can be completed in minutes without on-hold delays.

Requesting a Locate

The minimum information is required to process a locate request:

- contact information;
- exact ground disturbance location;
- who the work is being done for;
- type of work; and
- date of the proposed ground disturbance.

Every request for locates must include a digitally drawn polygon that accurately represents the size and location of the dig area. The polygon is used to determine which Owners/Operators need to be notified. Ground Disturbers who place their request over the phone will receive a copy of the request and the dig site polygon drawn by the USP agent. It is important that the ground disturber reviews the ticket information for accuracy and confirms the dig site polygon is in the correct location and fully covers the

dig area. Locates or clearances will not be provided for any area outside of the dig area polygon.

Research indicates that the best safety results are achieved when the user draws the polygon themselves online, as they are the most knowledgeable about the site.

Notice

USP' members require at least three (3) full working days' notice prior to any routine, intended ground disturbance and a minimum of at least five (5) full working days' notice for Large Project Ticket requests (a **"Large Project Ticket"** involves a dig site of greater than 60,000 square metres up to 800,000 square metres per ticket in an urban area, or a dig site greater than 800,000 square metres up to 4.2 square kilometres per ticket in a rural area).

Response times vary and may be longer during construction season due to higher volumes of locate requests.

Emergency and Priority Locate Requests

Emergency locate requests can be placed by calling 1-800-242-3447. To make an Emergency request, the Ground Disturber must be digging to perform a repair to correct a condition that poses an immediate threat to life, health or property – including repair of essential services such as water, power, phone or gas.

For an Emergency, the expectation is that Locators will respond to Emergency locate requests within 2 hours. For a Priority locate request, the expectation is that Locators will respond on or before the date and time requested. Within the USP system, a "Priority locate request" is for when locates are required within 4 hours.

For either type of locate request, the Ground Disturber must be on site or enroute to perform a ground disturbance with the appropriate equipment within the timelines specified for each type.

Modifying Locate Requests

Sometimes conditions on a site change after a Ground Disturber has requested locates. Edits to an existing ticket can be made online by selecting the ticket from your History, then selecting Ticket Edit. This will cancel the original ticket and issue a new ticket number with the updated information.

You can also email USP at info@utilitysafety.ca or call them at 1 800-242-3447. Be ready with your Ticket Number and new information to provide to the Damage Prevention Associate who answers.

Cancellations

If the proposed work is cancelled or delayed before locates have been done, the Ground Disturber should advise USP, and any affected Owners/Operators who are not

registered with USP, as soon as possible to minimize unnecessary work done by Locators.

Records Management

USP maintains recordings of all incoming calls for three years. Copies of all notifications to Members are retained for seven years.

RESPONSIBILITIES OF OWNERS/OPERATORS ON RECEIVING A LOCATE REQUEST

When the Owners/Operators of underground facilities receive a locate request, they assess the information on the notification (for USP Members), or on a request for Owners/Operators that are not registered with USP. The Owners/Operators determine whether or not the proposed ground disturbance will be in conflict with their facilities.

The expectation is that notified USP Members and/or Owners/Operators will respond to locate requests within the advance notice period in one of the following ways:

- advise the Ground Disturber that there is no conflict and that the Ground Disturber is clear to dig; or
- complete the locates as requested; or
- make arrangements with the Ground Disturber for some other mutually acceptable time to provide the locates.

If an Owner/Operator advises a Ground Disturber that a locate is NOT required, the Ground Disturber should request confirmation in writing for their protection.

Owners/Operators of underground facilities or their agents should identify and mark the locations of their facilities with paint, stakes or flags at no charge to the Ground Disturber and should provide the Ground Disturber with documentation of the locate performed.

Important: If the Ground Disturber selects the Alternate Locate Provider (ALP) Program option, Owners/Operators who participate in the ALP program are relieved of the responsibility to respond to the locate request except to provide plans to the pre-approved Alternate Locator Service Provider hired by the Ground Disturber. (Refer to Alternate Locate Provider (ALP) Program section of this document for further details.)

RESPONSIBILITIES OF GROUND DISTURBERS ONCE LOCATES HAVE BEEN REQUESTED

Once locates have been requested, the Ground Disturber's responsibilities are not suspended until the locates have been completed or cancelled. Their responsibilities in this part of the process include, but are not limited to, the following:

- maintain the outline of the area to be located. For sites that have the work area physically marked with white (or black) paint, these marks may need to be refreshed prior to the arrival of the Locators;
- arrange for and allow access to the area to be located for all Owners/Operators' locate staff and/or contracted locate providers;
- advise USP and any private Locator if anything on site changes that could affect the requested locate work; and
- cancel the locate request as soon as possible if this becomes necessary.

No Ground Disturbance is to take place until locates are completed.

THE LOCATOR

Locators provide a direct field communication link between Owners/Operators of underground facilities and Ground Disturbers. They can advise and assist a Ground Disturber in their approach to dealing with underground facilities at the site.

It is recommended that the Locator and Ground Disturber discuss the scope of work to take place, especially on large or complex projects. Supplying project or plan documentation to the Locator for clarification is recommended.

Locators will not enter buildings, site offices or trailers to find the Ground Disturber. The Ground Disturber must be available to meet the Locator at the location given to the Owners/Operators of the underground facilities in the locate request.

The Locator for major projects may be a private Locator who is a contractor or agent of the Ground Disturber to supply and re-fresh locate marks within the defined work area, as agreed to by the affected Owners/Operators. The relationship between the Ground Disturber and the that type of Locator is a contractual one solely with those parties.

Alternate Locate Provider (ALP) Program

(NOTE: The ALP program is expected to come into effect in Spring 2024, shortly after the publication of this document.)

In the traditional damage prevention process as outlined in this document, the Ground Disturber places a locate request and notified Owners/Operators respond by providing

clearances or by locating and marking their underground facilities at no charge to the Ground Disturber. The ALP program is operated by a partnership of Owners/Operators willing to offer an alternative to the traditional method of obtaining locates. Only those underground facility Owners/Operators listed on the Alternate Locate Provider Program page on the USP website are actively participating and the list is subject to change.

By selecting the ALP option on a USP locate request, the Ground Disturber is agreeing to hire an authorized, pre-approved Alternate Locate Service Provider (from the list available on the USP web site) to locate underground facilities belonging to participating ALP Owners/Operators within the work area defined on the locate request. The Ground Disturber is responsible for negotiating an agreement with the Alternate Locate Service Provider and for paying the provider directly for their services. Participating ALP Owners/Operators have provided access to facility maps to those Locators who have been accepted into the ALP program by meeting certain requirements and passing an assessment process.

Owners/Operators who do not participate in the ALP Program will respond to an ALP ticket according to the traditional model. Owners/Operators participating in the ALP Program will continue to respond to locate requests according to the traditional model if the ALP option is not indicated on the ticket.

More information about the ALP Program can be found on the USP website [here](#).

LOCATE MARKS









Locate marks, be they paint, stakes or flags, should be in sufficient quantity and close enough together to clearly identify the horizontal alignment of the underground facilities. While locating equipment is becoming increasingly more sophisticated and accurate, parallel facilities, overhead facilities and nearby reinforced concrete structures all affect their accuracy. Locating is thus part art and part science and locate marks are only approximations.

Locators should identify the presence of abandoned facilities and mark the locations when sufficient information is available. They should also identify the number of facilities the Ground Disturber can expect to find whenever that information can be determined.

Locators will not provide a depth, as the Ground Disturber is required to confirm location and depth using non-destructive digging techniques approved by the Owners/Operators prior to mechanical excavation.

The marking of the locations of underground facilities in Alberta follows the Uniform Color Code introduced by the American Public Works Association.

Where facilities are marked with a single line of paint, flags or stakes, the marks indicate the approximate centerline of the facility. Where facilities are marked with parallel lines connected with an arrow or chevron, the marks indicate either the approximate trench width of the original installation or the approximate outside limits of the facility.

Colour	Type of Facility/Indicator
	Red - Electric power lines, cables, conduits and lighting cables
	Yellow - Gas, oil, steam, petroleum or gaseous materials
	Orange - Communication, alarm or signal lines, cables or conduit
	Blue - Potable Water
	Green - Sewers and drain lines
	Pink - Temporary survey markings
	Purple - Reclaimed water, irrigation and slurry lines
	White - Proposed excavation

Examples of chevron markings are shown in the Hand Expose Zone section.

LOCATE DOCUMENTATION

Upon completion of a locate request, the Locator will provide documentation to the locate requestor. The documentation should include a diagram as well as record any limitations and special requirements the Owner/Operator might have with respect to that particular ground disturbance or facility. The diagram is reference material for the interpretation and understanding of the marks placed by the Locator on site and should include a legend, as well as the area located and/or cleared. Documentation should provide any information required to verify facilities upon hand exposure (pipe sizes and material for example), if available.

This documentation must be reviewed, kept on-site, and readily accessible to the Ground Disturber for the duration of the ground disturbance. If there are any discrepancies between the documentation and the marks on the ground or the original locate request, such as the work area cleared, the Ground Disturber should contact the Owner/Operator and not proceed until all issues are addressed.

Some Owners/Operators may provide measurements from fixed objects to the approximate alignment of their facilities that can be used to assist in the re-establishment of marks or verifying the locate accuracy. Documentation should provide information to allow the re-establishment of the locate marks should that ever be necessary and should include any special requirements the facility owner might have with respect to that particular facility or ground disturbance. A legend can be used to help clarify the supplied locate documentation.

Locators and Ground Disturbers may choose to take and retain photographs of locates for their further protection.

Electronic and Paper Locate Report Format

Electronic and/or paper Locate Reports are acceptable formats. Should the Locate Report provide information in colour, anytime it is viewed and/or printed, the Report should also be in colour. Failure to do that may mean valuable information might not be conveyed or could be more easily be misunderstood.

Electronic Locate Report

- Device should be operable.
- Screen size should be industry accepted.
- Viewing screen should be free of defect.
- Each page of the Locate Report should be legible and viewable in its entirety.
- All pages of the Locate Report should be accessible at all times.

Paper Locate Reports

- Minimum size should be Letter-sized (8 ½" x 11").
- Locate report should be legible and free of defect.
- All pages of the Locate Report should be always accessible.

LIFESPAN OF LOCATES

The validity of the locate expires as stated on the locate report -- please see the locate documentation for Owner/Operator specific information and guidelines. Additionally, an "all clear" or "clearance" response from an Owner/Operator will also expire when all other locates expire unless otherwise stated in the Locate Report and/or in the Owner/Operator's response to the initial locate request. A Ground Disturber should never assume that the "all clear" or "clearance" response lasts for the entire timeline of the excavation work.

Locates may be valid for up to 30 calendar days from the date they were provided subject to certain conditions being met. If a Ground Disturber has not started or completed a ground disturbance within the maximum timeframe of the existing locates or 30 calendar days from the date locates were requested, whichever is shorter, the Ground Disturber must request the locates be refreshed or re-done.

Locates for a Large Project Ticket can be valid for up to 60 calendar days with the written concurrence of the affected Owners/Operators on the Locate Report.

On receipt of this locate refresh, USP will notify individual Member Owners/Operators of underground facilities. The individual Member will, in consultation with the Ground Disturber, determine whether a new locate is required or the lifespan of the existing locate can be further extended. The length of this extended lifespan will be determined by the Ground Disturber and the Owners/Operators.

It is expected that the Ground Disturber is actively working on all locates and re-locates, and does not place locate requests until they have confirmed when the ground disturbance activities will take place on site. Placing multiple requests for locates when no ground disturbance is imminent places an unnecessary burden on system resources and negatively impacts locate response timelines.

For large or long term projects, it is expected that the Ground Disturber will break the project into sections when placing locate requests to better co-ordinate the provision of locates with the progress of the ground disturbance. A preliminary meeting with the locate vendors, Ground Disturbers, and Owners/Operators prior to the initiation of ground disturbances to discuss how locate requests will be requested is recommended.

If at any time the Ground Disturber is of the opinion that the locate marks are not adequate for the successful and safe completion of the work, the Ground Disturber must request new locates.

RESPONSIBILITIES OF GROUND DISTURBERS AFTER LOCATES HAVE BEEN DONE

Notifying USP, and the Owner/Operators of underground facilities who are not members of USP, is only one step for the Ground Disturber in fulfilling their responsibilities in the damage prevention process.

Each Owner/Operator is responsible for responding to the notification and ensuring that its underground facilities are properly marked and identified. If an Owner/Operator indicates to the Ground Disturber that their work is not in conflict with its facilities, it does not mean that other facilities are not in conflict. The Ground Disturber must ensure that all notified Owners/Operators have responded and either marked and identified their facilities or given confirmation that their facilities are not in conflict.

The marks provided by the Owners/Operators are temporary. If the work on site will disturb or destroy the locate marks, it is the Ground Disturber's responsibility to provide more permanent offset marks or references that will not be disturbed.

Once the underground facilities have been marked and identified, the Ground Disturber must not use mechanical excavation equipment within the Hand Expose Zones for any facility until it has been Hand Exposed and is clearly visible (see Occupational Health and Safety Code part 32, 448.1), unless otherwise specified by the Owner/Operator.

A Ground Disturber should reference the supplied locate documents from the Owners/Operators to check that what was exposed matches what was identified in these documents.

During their work activities, the Ground Disturber must support and protect any exposed facility as per the Owners/Operators' requirements. If contact is made with a facility, or a

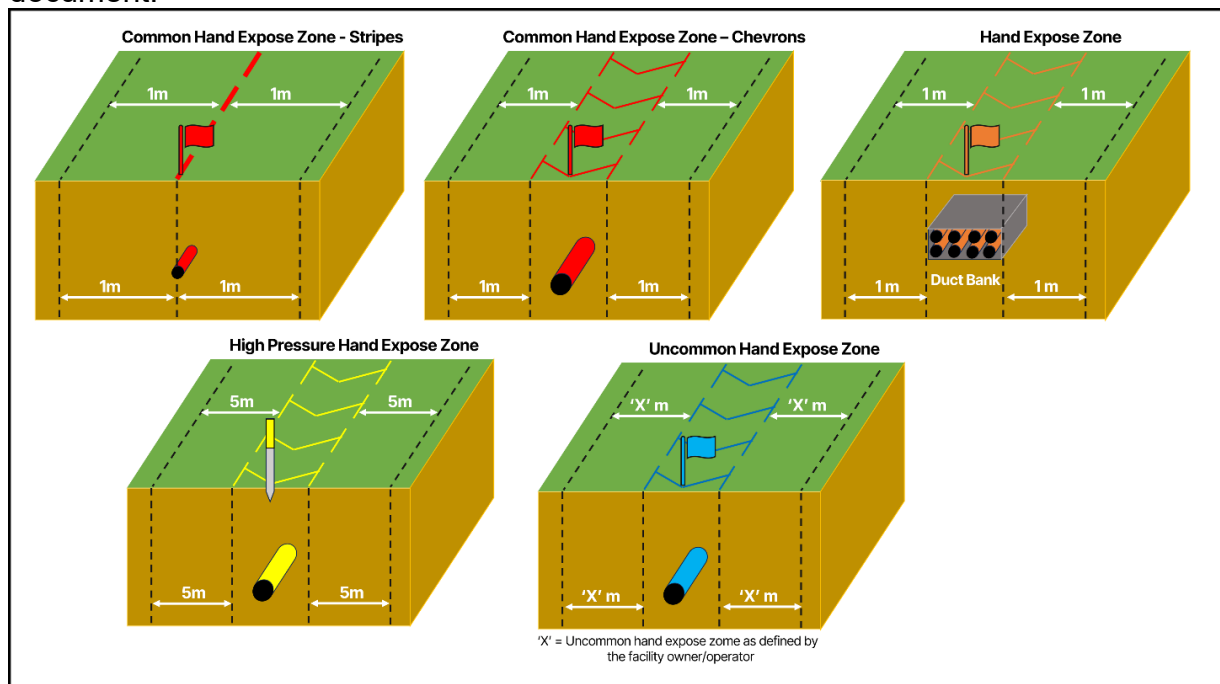
previously damaged facility is found, the Ground Disturber must notify the Owner/Operator.

Some Owners/Operators require that exposed facilities be inspected prior to backfilling. If backfill inspection is required, this information, as well as the required advance notice and contact information, will be included in the locate documentation or agreements.

At the conclusion of the work, the Ground Disturber is requested to remove the stakes and/or locate flags. Leaving them can cause damage to agriculture and other machinery, injury to livestock/wildlife who eat or contact the flags and will help avoid confusion for other Ground Disturbers who may work in this area in the future.

HAND EXPOSE ZONES

Readers are encouraged to review the definition of Hand Expose Zones included in this document.



Examples of various Hand Expose Zones common in Alberta

Remember to review paperwork provided by Owner/Operator representatives prior to commencing any ground disturbance work to verify hand exposure limits.

HAND EXPOSURE

Prior to Hand Expose activities, the Ground Disturber will confirm with the Owner/Operator whether or not the Owner/Operator must be, or will be, present during Hand Expose activities. From a practical perspective, mechanical equipment may be used to remove asphalt, concrete or hard surface materials in the Hand Expose Zone following confirmation with the Owner/Operator what Hand Expose techniques are acceptable.

Before any mechanical excavation, all identified underground facility conflicts with the ground disturbance in the Hand Expose Zone are to be Hand Exposed to verify locate accuracy and avoid any incidents from errors or assumptions. Conflicts may be due to crossing the facility or working near it. The Ground Disturber should Hand Expose the underground facility to a sufficient width and depth to be able to visually identify the location, direction/alignment, depth, size, and type of facility. If something unexpected or unknown is exposed, the Ground Disturber should contact the Owner/Operator or Locator for more information. Once the underground facility has been Hand Exposed, the use of mechanical equipment within the Hand Expose Zone is at the discretion of the Owner/Operator.

If the Ground Disturber has attempted to expose an underground facility to a depth of 600 mm below the proposed excavation depth within the Hand Expose Zone but cannot find the underground facility, the Ground Disturber should contact the Owner/Operator to determine the safest way to proceed. If the Ground Disturber does not know how to contact the Owner/Operator, they should contact USP and provide them with the active ticket number so the appropriate Owner/Operator can be contacted for assistance.

Energized Power Cables

Hand exposure of energized or live high voltage cables must not be undertaken until the electric power Owner/Operator has been consulted for advice and assistance.

The Alberta Electrical Utility Code places an obligation on the electric facility Owner/Operator to ensure that the exposure of energized power cables is done safely. The Owner/Operator must determine if direct supervision is required or if the work will be done in a safe manner without direct supervision, which will depend on the expertise and reliability of the Ground Disturber and the type of underground electrical cable involved. The Ground Disturber may be required to participate in specific training or orientation by the electric Owner/Operator.

In some special situations, the Hand Expose Zone for underground electric facilities may be greater than 1m. The Ground Disturber will be advised of these situations by the Locator and in the locate documentation.

SPECIAL SITUATIONS

Not all situations will be covered by the preceding guidelines. There are exceptions and special situations. The following sections highlight some, but not all, of those situations.

Charges for Locates

USP does not charge for the service of receiving a locate request and notifying Members in the ground disturbance area. As a rule, the Owners/Operators of underground facilities do not charge for identifying and marking the locations of their underground facilities. However, should the Ground Disturber's schedule require that locates, other than Emergency locates, be done outside normal working hours, there may be a charge to the Ground Disturber to cover the cost of overtime.

Some Owners/Operators will use the ALP Program that allows infrastructure project owners to have dedicated and qualified Locators working within the project limits. These arrangements come at a cost to the project owner.

Ground Disturbers that abuse the damage prevention process by placing frequent requests for locates where no ground disturbance is taking place or planned within the lifespan of locates may ultimately incur charges from the Owners/Operators.

Most Owners/Operators charge for locating customer/Private-owned Facilities. As noted in the Pipeline sub-section later in this document, pipeline Owners/Operators are obligated to perform any inspections or supervision of a ground disturbance at no charge to the Ground Disturber.

Planning and Design tickets – with no locates being necessary – can be requested without any fee as well. Planning and Design tickets do not authorize a ground disturbance.

Ground Disturbance Parallel to an Underground Facility

Quite often, construction activities require a ground disturbance to be conducted parallel to an existing underground facility. In these situations, the Ground Disturber should contact the affected Owner/Operator for advice on how to proceed. The Owner/Operator may require the Ground Disturber to Hand Expose the facility in several locations to determine its true alignment before allowing the Ground Disturber to proceed to use mechanical equipment within the Owner's/Operator's designated Hand Expose Zone.

The Ground Disturber is cautioned that underground facilities, particularly shallow infrastructure - telecommunications, electric, and natural gas distribution - are not necessarily installed in a straight alignment.

Frozen Ground

The hand exposure of underground facilities in frozen ground may pose some problems to the Ground Disturber. The fact that the ground is frozen does not mean that

underground facilities do not have to be hand exposed and visible before a ground disturbance takes place.

In situations where the ground is frozen, the Ground Disturber has a choice of thawing the ground or using non-destructive excavation techniques acceptable to the Owner/Operator of the facility. If the choice is to thaw the ground, the procedures used must be acceptable to the Owner/Operator of that facility. The Ground Disturber should not partially thaw the ground, excavate, and then re-apply thawing procedures at a lower elevation.

The use of hydrovac equipment to expose underground facilities in frozen ground may be acceptable to the Owner/Operator of an underground facility. Each Owner/Operator will have unique requirements when it comes to exposing their facilities in frozen conditions. Hydrovac is the most commonly used method in these instances, however if the proper temperatures and pressures are not followed, even a hydrovac can cause damage in the exposing process. It is very important that the hydrovac operator is aware of the temperature, pressure, wand tip, and suction hose requirements for the underground facilities they are exposing. This information may be found on the Owners/Operators' website, or by contacting the Owners/Operators directly.

In an Emergency situation, or in a situation where it is neither possible nor practical to thaw the ground, the Ground Disturber should contact the Owner/Operator for advice on how to proceed.

Hazardous Situations

If either the Ground Disturber or the Owner/Operator of a facility determines that a proposed ground disturbance may create a hazardous situation for workers or the general public, or threaten the integrity of an underground facility, the Ground Disturber and the Owner/Operator need to discuss the situation and develop a mutually acceptable solution prior to the ground disturbance.

Pipelines

Pipelines within the province transporting fossil fuels such as natural gas, oil and natural gas liquids, water supply and disposal lines or any other pipelines or other underground facilities associated with an energy related project and within the meaning of a "pipeline" under the *Alberta Pipeline Act* are under the jurisdiction of the Alberta Energy Regulator, or under the *Canadian Energy Regulator Act* and being under the jurisdiction of the Canadian Energy Regulator. Pipelines that cross a provincial or national boundary are regulated by the CER.

There are minor differences between the provincial and federal regulations but their intents are similar. The requirements in this section are only applicable to provincially and federally regulated pipelines.

The area within 30m either side of a provincially regulated pipeline is the "controlled area". The area within 30m of the center line of a federally regulated pipeline is the

“prescribed area”. The pipeline Owner/Operator must be notified of any intent to disturb the ground within the controlled area or prescribed area and the Ground Disturber must request locates. The *Pipeline Act* and Rules further requires that anyone proposing to undertake a ground disturbance search an area of 30m beyond the limits of the proposed ground disturbance for the presence of pipelines.

In addition to identifying and marking, the pipeline Owner/Operator is to perform any inspections and supervise the ground disturbance as required at no charge to the Ground Disturber.

Mechanical excavation equipment may not be used within 5m of a provincially regulated pipeline until the pipeline has been hand exposed and is clearly visible. Mechanical equipment may not be used within 600mm of the exposed pipeline except under the direct supervision of the pipeline Owner/Operator.

Mechanical excavation equipment may not be used within 3m of a federally regulated pipeline until the pipeline has been hand exposed and is visible.

Additional information on pipeline processes and requirements can be found in **Appendix C**.

Pipeline Rights-of-Way

A pipeline right-of-way has specific boundaries within which the pipeline Owner/Operator has the right to construct pipelines and control activity. If the proposed ground disturbance is within the pipeline right-of-way, the Ground Disturber must obtain written approval from and/or enter into a Crossing or Proximity Agreement with the pipeline Owner/Operator.

Some municipalities require that pipeline rights-of-way be landscaped or used for other purposes. Any ground disturbance within these pipeline rights-of-way, even if required by a municipality, must be authorized in writing by the affected pipeline Owners/Operators.

The construction of haul or access roads and the movement of vehicles or equipment along or across a pipeline right-of-way, other than in the upgraded and traveled portion of a highway or public road, have the potential to damage pipelines. Advance written permission and approval for this type of activity must be obtained from the pipeline Owners/Operators.

Written permission from the Owner/Operator of a pipeline to undertake activities near a pipeline may take the form of a Crossing or Proximity Agreement. These often impose stricter conditions on the Ground Disturber than the minimum regulatory requirements.

Orphaned Wells

The Orphan Wells Association (the “**OWA**”) registers the location of pipelines that are classified as 'orphaned' in their database with USP. If the work area on a locate request overlaps an orphan pipeline and/or orphaned well, the Ground Disturber will see Orphan Well Association as a notified Member and will receive an automated response with instructions on how to proceed. The OWA does not provide locates.

NOTE: Not all abandoned wells are registered with the OWA and, at times, the registered owner of the well is no longer active. In those situations, the Ground Disturber is advised to contact the AER for directions on how to proceed.

Landowners and Private Property

Homeowners and landowners, or contractors working on their behalf, planning to undertake a ground disturbance on private property must make special provisions for identifying and locating Privately-owned Facilities. They must still place a locate request through USP to have the Publicly-owned Facilities on their property located, but as stated in the “Underground Facilities” section of this document. Privately-owned Facilities may not be located through the USP process. In most cases, these facilities were installed by the landowner (or a previous landowner) for the landowner’s private use. The records of the installation may have been lost over time and, depending on how these underground facilities were installed, the facilities could be very difficult to locate.

In these cases, it may be necessary for the Ground Disturber to engage and schedule a Private Locator to identify and mark the locations of such underground facilities. Be advised that the Private Locator may also request additional information such as drawings, surveys, contracts, permissions, permits, safety plans, project-specific considerations for site access limitations or special conditions that could influence the Locator’s ability to complete the locate.

The USP website has a resource section with a Frequently Asked Questions (FAQ) page that can answer many questions on this process and provide helpful direction to assist in locating all the underground facilities on a property.

Major Projects

Major projects are often very large work areas that will be active for consecutive months or even years and may have multiple phases. Examples are major transportation or horizontal infrastructure installation/construction. It usually takes USP Members significant time, effort and co-ordination for locates to be completed on these projects and will require USP Members’ Locators to return to the site multiple times to renew the locates throughout the project’s lifecycle.

Before breaking ground and preferably during the design phase, it is recommended that the project team(s) schedule a meeting with the affected Owners/Operators and their locate staff or providers to lay out the scope and timeline of the project. This will allow

all parties affected by the project to have a plan that can accommodate each other, assist the Locators accordingly, and to have a conflict resolution plan should problems arise.

Underground infrastructure is typically impacted and may need to be protected, relocated or removed from its current position to accommodate the new construction during these projects. A process should be established between the affected parties to share data of the underground infrastructure (proposed and existing) to be available to all project stakeholders.

A major project involves many parties, and many Ground Disturbers, such as Owners/Operators relocating their facilities, consultants and contractors taking soil samples or exposing existing underground facilities, the Prime Contractor (as defined by legislation) or sub-contractors doing earthworks. Owners/Operators installing new underground facilities, and landscape contractors restoring the site or planting new trees or shrubs. These activities should be coordinated by someone on the project team to minimize the number of locate requests that are submitted. Sharing information between the affected parties can be a practical way to provide assistance across the project.

Transportation and Utility Corridors (TUC's) and other titled public lands

Over the past five decades, the Province has created Transportation and Utility Corridors (the “**TUC's**”) in both Calgary and Edmonton for various purposes – for transportation facilities and for petroleum and utility infrastructure. Other TUC's are being considered for other communities. Ground disturbances within the road rights-of-way in the TUC's, as well as outside of the rights-of-way but within the boundaries of the TUC's, must be authorized by the Province (and often their maintenance contractors).

Ground disturbances in other public lands (Crown lands) must also be authorized by the Province.

For further information, contact the [Properties Division of Alberta Infrastructure](#) .

Utility Rights-of-Way (URWs)

In many municipalities, it has become necessary to install the underground facilities in a utility right-of-way in mainly residential areas (although this also occurs in some commercial/industrial areas). Unfortunately, most landowners are not aware of the existence of a utility right-of-way on their property.

Because the Owners/Operators of the facilities within the utility right-of-way (the “**URW**”) must have access to the right-of-way for maintenance and repair purposes, property owners are restricted as to what they can build and/or plant on a URW. Property owners should check their Certificates of Title for URW's and contact the local municipality or the URW owner to determine what restrictions have been placed on their

use of this URW land.

Extended Work Sites

If, after locates have been done, a project is extended beyond the work area limits marked by Locators, the Ground Disturber must request additional locates. Underground facilities should not be assumed to be in the same alignment outside of those limits.

Marking Limits of the Work Site

Ground Disturbers should clearly mark the limits of their work site where the ground disturbance(s) are proposed to occur, where practical. There are a variety of methods that can be used, such as lathe, flagging or paint. The APWA Color Code states that white should be used to mark the work site, however there could be site, weather or regional restrictions that would not make this the best option. In that case, an alternate method could be used as long as it does not conflict with the designated colours in the APWA Color Code and the meaning of the marks are clearly communicated to anyone on site. Labelled offset lath could be used as an example.

If marking a work site on a roadway with white paint, it is important to make sure the job site limit marks do not appear to be lane markings. This could lead to confusion for motorists. 40mm x 450mm should be the maximum size of the dig site limit paint marks.

Electronic White Lining

With increasing frequency, the dig site polygon submitted for the locate request is considered as the definitive work area – also referred to “electronic white-lining”. Because the dig site polygon determines which Owners/Operators have been notified, no excavation should take place outside the boundaries of the work area as it has been drawn on the locate request. If the dig site polygon does not correctly depict the full area of excavation, a new locate request should be placed.

FIELD PROBLEMS

Occasionally, a Ground Disturber or a Locator may experience problems during the locating process. USP may be able to assist in the resolution of these problems.

Failure to Respond to Locate Requests

If a Member of USP has been notified of a locate request and has not contacted the Ground Disturber within the 3 full working days advance notice period (or the 5 day period for Large Project Tickets), or has failed to mark the locations of underground facilities, the Ground Disturber can send a Reminder through the Positive Response module online or contact USP at info@utilitysafety.ca. USP will contact the offending Member to notify of a no-response. The Ground Disturber also has the option to contact the Owner/Operator directly.

If the Owner/Operator is not registered with USP, the Ground Disturber should contact that Owner/Operator directly.

If a Member of USP frequently fails to contact the Ground Disturber within the stated notice period or frequently fails to mark the locations of underground facilities as arranged, the Ground Disturber can file a written complaint with USP at info@utilitysafety.ca. The management of USP will investigate the problem and assist in a resolution.

Members of USP sign a User's Agreement with USP which requires them to respond to each locate request by establishing contact with the Ground Disturber. It is expected that the individual Owners/Operators will advise the Ground Disturber whether or not a locate is actually required.

STAKEHOLDER RESPONSIBILITIES

Each of the stakeholder groups in the damage prevention process have roles and responsibilities, which, when recognized, accepted, and fulfilled, will enhance the process and have a positive impact on worker safety, public safety, protection of the environment and preservation of the integrity of the underground infrastructure.

Regulatory Agencies

Regulatory agencies have the authority, responsibility, and obligation to enforce regulations and ensure compliance with them. With respect to the damage prevention process, the regulatory agencies should:

- recognize, accept, and promote that the prevention of damage to underground facilities will have a positive impact on worker safety, public safety, protection of the environment, and preservation of the integrity of society's essential underground infrastructure;
- ensure compliance with regulatory requirements through active education and enforcement programs;
- co-operate and collaborate with the other stakeholder groups to develop regulatory requirements that are fair, reasonable, based on best practices, compatible with industry best practices, and acceptable to all the stakeholder groups; and
- support and participate in damage prevention organizations.

Municipalities

Municipalities have the legislated authority, responsibility, and obligation to manage public road allowances, road rights-of-way, and titled lands under their control. NOTE: The Province of Alberta, through Alberta Transportation and Economic Corridors, has these responsibilities for primary and secondary highways that run through many municipalities.

Municipalities have various right-of-way management tools such as policies, bylaws, permits, and agreements available for that purpose. As part of that management

process, which can enhance the damage prevention process, they should:

- consider underground infrastructure (including pipelines) when issuing agreements and/or permits;
- require the designation of existing and proposed aerial, surface and underground infrastructure on all development plans submitted to the municipality for approval, and for all plans produced for municipal work;
- require standard depths of cover and offsets be met for any work, or that mitigation methods (protection, relocation, abandonment, or removal) are considered and agreed to by the affected Owners/Operators;
- foster co-ordination of capital projects among the Owners/Operators;
- require utility co-ordination for all projects (public or private) to minimize underground facility risk, disruptions, and damages, and to maximize worker and public safety;
- require, where legally possible, the submission of as-built records of all underground facility installations on both public property and private property to Accuracy Level 2 as described in CSA Standard S250-20 Mapping of underground infrastructure;
- create and maintain a central repository of as-built information for those Owners/Operators that provide information;
- provide information to planners, designers, and Ground Disturbers upon request, respecting the limitations agreed to with the Owners/Operators, regarding underground infrastructure within the road and utility/pipeline rights-of-way under their control; and
- support and participate in damage prevention organizations.

Owners/Operators of Underground Facilities

The Owners/Operators of underground facilities have an obligation to provide sufficient information to anyone undertaking a ground disturbance to allow the Ground Disturber to complete his or her work safely and in compliance with the governing regulations.

The Owners/Operators of facilities should:

- install facilities in accordance with applicable engineering/design standards, best practices and governing regulations;
- ensure their underground facilities are locatable;
- maintain spatially accurate and up-to-date as-built records of both live, suspended, and abandoned facilities;
- correct records when errors are found;
- generate a respect for the integrity of their underground facilities on the part of the digging community by being active participants in the damage prevention process;

- make the prevention of future damage to their underground facilities a criterion in their:
 - design process,
 - installation process,
 - records management process,
 - claims process,
 - operational management programs,
 - daily operating procedures, and
 - purchases of construction and locating services;
- adopt best practices related to damage prevention;
- develop an awareness of and respect for the digging community's concerns and the constraints under which the digging community does business;
- register with USP and respond to locate requests in a timely manner providing:
 - competent Locators,
 - documentation of the locate, and
 - communication of regulatory requirements and hazards associated with the underground facility;
- audit the performance of contract Locators, if used, and employee Locators;
- conduct root cause analyses on all damage incidents;
- submit damage incident reports to the province-wide USP Virtual Private DIRT database;
- be proactive in damage prevention process educational activities;
- co-operate with the other stakeholders in the damage prevention process; and
- support and participate in damage prevention organizations.

The Digging Community

The digging community has an obligation to undertake ground disturbances in a prudent manner and to safeguard the health and safety of workers and the public. The digging community should:

- recognize that there are inherent dangers in disturbing the ground;
- request, in a timely manner, that the Owners/Operators of underground facilities identify and mark the locations of their facilities that could be in conflict with a ground disturbance before the ground disturbance takes place;
- pre-mark limits of ground disturbance, or other marking methods in unusual circumstances;
- meet with Locators when practical to explain the scope and extent of the ground disturbance;
- respect the locate marks;
- manage the locates;

- ensure operators of excavation equipment have copies of and understand the locate documentation;
- hand expose underground facilities in conflict with a ground disturbance before using mechanical excavation equipment within the Hand Expose Zone;
- support and protect exposed facilities to the satisfaction of the Owner/Operator;
- report any damage, caused or found, to the Owner/Operator of the underground facility;
- report inaccurate locates and near misses to the Owner/Operator of the underground facility;
- conduct work in accordance with terms and conditions of the consent provided by Owner/Operator of the underground facility;
- backfill exposed underground facilities with care;
- ensure workers are adequately trained in ground disturbance procedures and the damage prevention process;
- develop and implement safe work procedures for undertaking a ground disturbance;
- maintain a list of Owners/Operators' contact numbers on site;
- develop and implement a ground disturbance check list;
- co-operate with the other stakeholders in the damage prevention process; and
- support and participate in damage prevention organizations.

Locators

By the nature of their role in the damage prevention process. Locators can have a significant influence on the success of a ground disturbance. The key elements of a "good" locate are:

- adequate training;
- suitable equipment;
- adequate records; and
- adequate time.

If any one or more of these elements is missing, the quality of the locate will suffer.

Locators have an obligation to provide sufficient information to anyone undertaking a ground disturbance to allow the Ground Disturber to complete their work safely and in compliance with the governing regulations. Locators should:

- understand the nature, purpose and scope of a proposed ground disturbance;
- identify and mark the locations of all underground facilities, potentially in conflict with a proposed ground disturbance, in accordance with governing regulations, industry practice and best practices;

- mark the locations of underground facilities adequately to show the horizontal alignment;
- advise the Ground Disturber of any special conditions, limitations, concerns or requirements that the Owner's/Operator's may wish to have conveyed to the Ground Disturber;
- provide the Ground Disturber with clear and legible documentation of the locates performed;
- ensure locate documentation is adequate to allow the re-establishment of the locate marks and provides limitations of the work space;
- perform locates in safe manner;
- report any record errors found to the Owner/Operator of the underground facility;
- recognize and accept that they have three sets of customers to satisfy:
 - the Owners/Operators of the underground facilities,
 - the digging community, and
 - USP; and
- support and participate in damage prevention organizations.

Notification Centre

The primary functions of the USP Notification Centre include communication, education and advocacy. It should:

- provide a dependable, cost-effective communication service between those who intend to disturb the ground and the Owners/Operators of underground facilities potentially affected by a proposed ground disturbance;
- develop, implement and maintain operating procedures that incorporate best practices, accommodate specific jurisdictional requirements, and balance the needs, wants and desires of the stakeholder groups;
- function as the interface between the digging community and the Owners/Operators of underground facilities – the hub of the damage prevention process;
- promote the identification, validation and adoption of damage prevention best practices;
- facilitate the evolution and improvement of the damage prevention process;
- undertake educational, public awareness, and damage prevention programs;
- foster co-operation and collaboration among all stakeholders in the damage prevention process; and
- support and participate in damage prevention organizations.

KEEPING THE GUIDELINES CURRENT

The information in these guidelines is current as of the date of issue. As improvements are made in the underground facility damage prevention process, changes in the guidelines will be required from time to time.

Suggestions or comments on these guidelines are welcome and will enhance their usefulness and acceptability. Comments should be addressed to:

The Best Practices Committee Chair

c/o Utility Safety Partners

Via email: info@utilitysafety.ca

or

By mail: PO Box 87131, Douglas Square RPO, Calgary, AB T2Z 3V7

BEST PRACTICES COMMITTEE

This document was prepared by Utility Safety Partners' Best Practices Committee.

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APPENDIX A - Commentary on planning activities

Planning Utility Corridors

Many Owners/Operators and authorities having jurisdiction (federal and provincial departments, municipalities, and First Nations) maximize existing utility corridors by placing new underground facilities within those corridors, whether those be public road rights-of-way, private roadways, or in pipeline or utility rights-of-way. CCGA National Best Practice 1-1 also recommends using utility corridors when possible and there are a number of these types of facilities in Alberta.

Most municipalities have standard cross-sections that establish both the horizontal and vertical alignment of new underground infrastructure. Adhering to those standards in greenfield locations assists in damage prevention.

Gathering and Mapping Information for Design Purposes

During the planning or preliminary design phase of a project, all available information should be gathered from the Owners/Operators, including maps of existing, abandoned, and not-in-use facilities, as-built of facilities in the area, proposed projects, and schedules of work. This approach, paraphrased from the CCGA National Best Practice 1-4, accurately describes what information is needed to depict on the project plans.

Subsurface Utility Engineering (SUE) investigations, as described in CCGA National Best Practice 1-4, is currently the best approach to obtain and depict underground facility information. SUE involves various geophysical techniques to acquire data, and both the American Society of Civil Engineers (ASCE) and the Utility Engineering and Surveying Institute - Canada (UESI) recommend a standard way of depicting underground facility information on the plans. ASCE 38-22 can be referenced to understand the field work that goes into a SUE investigation and has suggested methods for how the work can best be successfully completed.

As more details are confirmed, the underground facility information can be updated and the development or infrastructure plans can become more and more accurate, allowing designers to avoid underground facility conflicts, and contractors to make informed decisions on constructability.

With an accurate portrayal of the underground facility picture, project owners and Owners/Operators can determine what underground facility conflicts there may be and plan mitigation to avoid those conflicts and minimize potential damage to the underground infrastructure. Utility co-ordination can be planned to avoid conflicts in time and space during construction, utility relocation, and/or utility installation. Planning is one of the first steps in damage prevention, whether that be for multi-phase infrastructure construction or planning an excavation in a residential setting.

APPENDIX B - DIRT Reporting

What is DIRT?

DIRT is the acronym for “Damage Information Reporting Tool.” It is a secure web application that anonymously collects any stakeholder’s data about ground disturbance incidents that could have, or did, lead to a damaged underground facility.

Who Can Submit to DIRT?

Any damage prevention stakeholder with data pertaining to a ground disturbance incident (including damage and near-hit incidents) can register to submit to DIRT. This includes Owners/Operators, Ground Disturbers, Locators, as well as one call centres that collect data from stakeholders in their region. You do not have to be a USP Member to submit data.

For more information, including a series of CCGA DIRT Reports from 2012 and onwards, please see the [USP website](#).

Canadian Common Ground Alliance - DIRT Report 2022

Regional Profiles Alberta



	2018	2019	2020	2021	2022
PROFILE					
Population	4,330,206	4,371,316	4,428,082	4,464,170	4,601,314
Land area	640,330	640,330	640,330	640,330	640,330
Population density	6.8	6.8	6.9	7.0	7.2
Housing starts	26,085	27,325	24,023	31,945	36,544
Employment in construction	245,400	236,800	217,600	165,724	178,555
Construction GDP (\$ millions)	26,212	24,329	21,404	23,551	24,928
SUMMARY					
Locate requests	351,934	403,434	426,324	468,907	459,610
Notifications	1,477,711	1,463,751	1,470,207	1,597,579	1,551,932
Locate requests to notifications ratio	1:4.20	1:3.63	1:3.45	1:3.41	1:3.38
Damages	3,139	3,613	3,790	3,688	3,021
Damages per work day	12.5	14.4	15.2	14.8	12.0
Damage ratio per 1,000 notifications	2.2	2.47	2.58	2.31	2.06
Damage ratio per 1,000 locate requests	9.1	8.96	8.89	7.87	7.49
DAMAGES BY TYPE OF WORK					
Green (Landscaping)	317	477	519	374	331
Construction	298	301	321	357	235
Water/Sewer	546	921	972	751	651
Road/Street	421	735	797	607	563
Utilities	408	673	582	663	544
Unknown/other	1,149	506	599	936	697
DAMAGES BY FACILITY TYPE					
Electric	179	205	219	221	197
Natural Gas	672	526	554	664	600
Liquid Pipeline	381	0	3	8	14
Telecommunications	1,458	2,277	2,165	2,233	1,723
Water/Sewer	61	80	72	62	44
Unknown/Other	388	525	777	500	443
ROOT CAUSE					
Excavation Issue	550	1,163	1,129	734	882
Notification Issue	237	406	410	411	333
Locating Issue	306	631	747	1,117	716
Miscellaneous Root Causes	2,046	1,413	1,504	1,426	1,090
Damage Prevention/One Call Legislation					
Utility Safety Partners: utilitysafety.ca		Partial legislation: Alberta Energy Regulator and the Canada Energy Regulator governed pipelines are required to register with Utility Safety Partners			

APPENDIX C - Commentary regarding activities across or near pipelines

Each regulator has their own rules and regulations in regard to the types of authorization a Ground Disturber may need to work around pipelines. They also describe the areas adjacent to pipelines differently as well.

Readers of this document are advised that the rules and regulations change from time to time and are encouraged to make sure their operations are always aligned with the requirements.

For reference purposes only, here are the current links to the AER and CER rules and regulations that affect ground disturbance near licensed pipelines.



AER

[Alberta Pipeline Act – Pipeline Rules](#)



Canada Energy
Regulator

Régie de l'énergie
du Canada

CER

[Canadian Energy Regulator Onshore Pipeline Regulations](#)