1-0 Planning and Design

1-0 Planning and Design Best Practices

1-1: Planning Utility Corridors

Practice Statement: Designers and planners should evaluate all applicable factors when determining the placement of underground utilities. Ideally speaking, existing utility corridors should be used to the fullest extent, and, for entirely new installations, consideration should be given to the creation of a common utility corridor for the current, and future placement of all utilities.

Practice Description: Pre-planning for utility placement within current or proposed utility corridors is vital to the overall safe operation of that corridor. Planners and designers should research, examine and evaluate the size, and location of the area to be utilized, and determine the type and running line location of the utilities that must utilize the corridor. In the case of existing corridors, the information developed must be assessed in the context of the proposed installation to determine the safest, most efficient, and most effective configuration. In the case of entirely new installations in proposed corridors, the information developed must be assessed in the context of a common corridor configuration that accommodates all of the utilities involved. Consideration should be given to issues such as safety, setbacks, future operations and maintenance, preservation of boundaries, clearances and future expansion.

Planning practices, such as joint trenching and the development of Utilidors, should be considered as options for maximizing the effectiveness of the available area. Similarly, standardized line locations could be adopted that promote the safest, most efficient, and most effective installations.

Consideration should be given to the development of provincially consistent standards for the planning, design, and construction of common utility corridors. This should incorporate minimum guidelines for sizes/spacing between utilities in corridors, protection of property bars, and the consistent standard placement of utilities within the Right of Way.

Benefits:

The use of common utility corridors would result in the following benefits:

1. Accurate information as to the location of underground utilities in a particular geographic area.
2. Safe, efficient, and effective installation, placement, operation and maintenance and of underground utilities.
3. Efficient and effective utilization of land.
4. Easy identification and location of underground utilities in future development projects.
5. Damage Prevention.

Current Practice:

- **Joint Trenching** is an encouraged practice which involves the use of a common trench for all of the utilities in a corridor.
- **Utilidors** is a concept that is becoming more prominent in many jurisdictions. It involves the creation of a common utility corridor for the future installation of utilities in a geographic area.
- **Running Line Locations** are consistent standard offsets from the property line and/or street line for placement of utilities.

References:

- CSA S250-11, Mapping of Underground Utility Infrastructure

1-2: The Protection of Survey Infrastructure

Practice Statement: When designing the location for placement of new underground infrastructure, planners and designers should plan it accordingly in order to protect the survey infrastructure so that the public interest may be served and protected.

Practice Description: Service laterals must be designed and installed to avoid disturbing property corners.

References:

1. Because of their significance, survey monuments are protected by both federal and provincial law.

The **Criminal Code of Canada R.S. 1985, c. C-46** under Part XI, Sec. 442 and 443 states, "Everyone who wilfully pulls down, defaces, alters or removes anything planted or set up as the boundary line or part of the boundary line of land is guilty of an offence punishable on summary conviction."

2. CSA Z247-15, Damage prevention for the protection of underground infrastructure.

1-3: Inclusion of Utility Infrastructure on Development Plans

Practice Statement: For the purposes of this section Development Plans include; Official Plans, Re-zonings, Draft plans of Subdivision/Condominium, and Site Plans. Development plans involving the development of real property should include the designation of existing and proposed of both above and underground utility infrastructure.

Practice Description: Various items are required on the Development Plans filed prior to the development of lands. Where a Development Plan is to be filed, the items required should include the location[s] of both above and underground facilities traversing the land described on the Development Plan. Identification of the location[s] of both above and underground facilities on the Development Plan would provide notice to developers and the public about the existence of infrastructure facilities, and would alert facility owners of the need to establish communication with the developers to facilitate planning for the lands which complements the utility infrastructure. Facility and owners should maintain timely and accurate records of all abandoned and not-in-use facilities, and this information should be identified on Development Plans along with the existing, future, and proposed facilities.

Benefits: The requirement that utility infrastructure locations be identified on the Draft and Site Plans is shared with the facility owners should ensure that facility are fully aware of development which will impact on their facilities well in advance of the commencement of excavation activity. It should also facilitate the optimal use of the land being developed, and maintain the integrity of the utility infrastructure.

References:

- CSA S250-11, Mapping of Underground Utility Infrastructure

1-4: Gathering Information for Design Purposes

Practice Statement: The designer/engineer should use all reasonable and available means of obtaining information about utility facilities in the area to be developed.

Practice Description: During the planning or preliminary design phase of a project, all available information should be gathered from the facility owners, including maps of existing, abandoned, and not-in-use facilities, as-built of facilities in the area, proposed projects, and schedules of work in the area. The methods of gathering information should include contacting a notification service, facility owners, property owners, Public Utility Commission (PUCs), and government (municipal, provincial, and federal) departments and agencies. They also include a review of the site for above ground evidence of underground utilities, e.g. permanent signs or markers, manhole covers, vent pipes, power and communication pedestals, and valve covers. The owner provides the locations of his/her underground facilities by other means, such as by marking preliminary design drawings or providing facility records to the designer. This latter option for gathering the required information should be pursued purposefully by the designer. The information gathered by these methods is used by the designer for purposes of route selection and preliminary neighbourhood impacts, or in the evaluation of different design possibilities.

During the detailed design phase of a project, it is necessary to develop detailed information on the locations of utility facilities in the project area in order to ensure accuracy, and minimize the possibility of utility conflicts. This detailed information can be obtained through a survey of utility infrastructure and the methods utilized should be documented.

Benefits: Gathering underground facility information and incorporating this information in the planning and design phase minimizes the hazards, cost, and work to produce the final project. Safety is enhanced, unexpected facility conflicts are eliminated, and facility relocations are minimized.

Current Practice:
Project owners utilize some basic practices when performing a survey of utility infrastructure. For effective results the steps should be performed in sequence. However it is not necessary to complete all steps depending on the level of information required. The steps are as follows:

1. Use all available existing utility facility records to obtain information about locations of existing and proposed underground facilities in the entire construction project area;

2. Visit the job site to correlate the information already gathered about existing utility facilities with above ground features;

3. Use appropriate instruments to determine the approximate horizontal locations of the underground facilities identified; and

4. Use test holes to positively determine the exact location of existing underground facilities. At this point, horizontal and vertical control measurements may be taken. Test holes are used to positively locate and identify an underground facility by exposing the facility by a nondestructive means, e.g. vacuum excavation.

References:

- CSA S250-11, Mapping of Underground Utility Infrastructure

1-5: Subsurface Utility Engineering (SUE)

Practice Statement: The project owner should consider the use of Subsurface Utility Engineering (SUE) techniques as a structured method of gathering and depicting utility information for design purposes.

Practice Description: SUE is applied during the design phase to locate, identify, and characterize all existing utility infrastructure (and other relevant non-utility features) found within a given project. SUE is applied in a structured manner, in accordance with practices and Quality Levels found in ASCE 38-02 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data. Although the Standard is more detailed and comprehensive, the following is a brief summary of the Quality Levels defined therein: Quality Level D – information gathered solely from existing utility

records which will provide an overall sense of the congestion of utilities, but is limited in terms of comprehensiveness and accuracy.

The four (4) Quality Levels are:

1. Quality Level D – information gathered solely from existing utility records which will provide an overall sense of the congestion of utilities, but is limited in terms of comprehensiveness and accuracy. Use of Quality Level D information should be limited to project planning and route selection activities;
2. Quality Level C – information gathered from surveying above ground facilities such as manholes, valve boxes, and pedestals which is used to augment the information gathered in Level D;
3. Quality Level B – involves 'designating' or the use of surface geophysical techniques to determine the existence and horizontal position of facilities, including those identified in Level C. Twodimensional mapping information is obtained. The data obtained is usually sufficient for excavation planning. The data obtained can facilitate decisions with respect to the placement of new structures or facilities to avoid conflicts with existing facilities; and
4. Quality Level A – involves 'locating' or the use of non-destructive excavation devices at critical locations to determine the precise horizontal and vertical position of existing facilities, as well as the type, size, condition, material, and other characteristics. When surveyed and mapped, precise plan and profile information is available for use in making final design decisions. The SUE engineer guarantees the accuracy of the Level A information.

References:

- CSA S250-11, Mapping of Underground Utility Infrastructure

1-6: Identifying Existing Facilities in Planning and Design

Practice Statement: Designers should indicate existing utility facilities on drawings during planning and design.

Practice Description: During the planning and preliminary design phase of a project, existing facilities, such as hydro/electric, gas, telecommunications, CATV, water mains and sewers should be shown on preliminary design plans. The planning documents should include possible routes for the project together with known underground facility information. The facility owners should be given the opportunity to provide appropriate comments.

During the detailed design phase of a project, utility facility information is shown on the plans. The method used to gather information should be noted on the plans by the project owner so that the designer and the

contractor both know the quality of the information included on the plans. The facilities shown should include active, abandoned, not-in-use, future use, and proposed facilities. The design plans should include a summary showing the proposed facility route or excavation. The design plans should be provided to affected facility owners in order to provide an opportunity for final comment/clarification.

Benefits: Providing complete underground facility information and including this information on design drawings reduces safety hazards, simplifies coordination, and minimizes final project costs.

Current Practice:
A potential practice is described below:

At 30% Design Review

A utility coordination meeting is set up for the Project Manager to meet with all utilities having facilities within the boundaries of the project, as well as potential utilities that may wish to place facilities within the limits of the project. Plan design drawings and cross sections are circulated to the utility companies prior to the meeting highlighting potential conflicts. During the meeting the following issues are addressed:

- ☐ Ensure that all utilities have been correctly identified on the base drawings
- ☐ Identify Areas of conflict
- ☐ Discuss Potential Solutions
- ☐ Discuss the Region's project timing
- ☐ Address relocation restrictions such as property acquisition, stream or railway crossings
- ☐ Discuss additional test pitting that may be required as well as level of detail required (i.e. SUE)

Minutes should be prepared by the project Manager or his/her consultant and circulated to all attendees for verification

At 60% Design Review

At the second utility coordination meeting, the utility companies should be bringing to the table a drawing (supplied originally by the Region) showing how each utility will be addressing their relocates. Each facility's location should be based on Regional standard offsets and comments made at first meeting. This meeting should accomplish the following:

- ☐ Approval in principle is given for the overall co-ordination plan
- ☐ General timing required for relocation
- ☐ Date confirmed for receipt by Region for final drawings for approval andMunicipal consent
- ☐ Project timing update
- ☐ General estimate

Minutes should be prepared by the project Manager or his/her consultant and circulated to all attendees.

At 90% Design Review

By this point in time, the utility relocation plans have been submitted and approved, cost sharing estimates (in accordance with the governing agreements) have been submitted and approved, written notification to each utility mandating relocation (in accordance with the governing agreements) has been given and notification time has passed. All land acquisition has been secured by the Region, and all utilities should be on site relocating their facilities.

If the utility can only move during the reconstruction contract, a relocation timing window must be established to co-ordinate works and provide for a separation of time and distance between contractors.

At Pre-Tender Meeting

Calls are made to each utility confirming progress on site and ensuring relocation complete prior to Region's contractor on site.

References:

- CSA S250-11, Mapping of Underground Utility Infrastructure

DESIGN PROCESS

1-7: Utility Coordination

Practice Statement: Project owners and facility owners should regularly communicate and coordinate with each other concerning current and future projects. Consideration should be given to the establishment of Utility Coordinating Committees (UCCs) mandated to deal with specific projects as well as issues of concern.

Practice Description: Project Owners should circulate design drawings to facility owners for the purpose of allowing the facility Owner to identify the location of their infrastructure, and potential conflicts. The design drawings should contain sufficient information of the proposed work to allow the facility owner to understand the scope of the work and the impact of such work on their structures. Where relocation of facilities will be required, a realistic schedule should be developed that allows time for the design, construction and budget approval of the relocated facilities.

Utility coordinating committees provide a mechanism through which winwin solutions can be developed for problems associated with the management of the public and private infrastructure projects within the public road allowance. These problems are generally due to poor communication and coordination between the key parties involved in the design and construction of the public and private infrastructure works in the public road allowance. The impact of this poor communication and coordination is often significant

and results in increases in project costs, project construction delays and difficult working relationships due to the need to relocate existing infrastructure. The frequency of these problems and their potential impact on project budgets increases with the density of the infrastructure, the demand for occupancy and space within the road allowance, and poor quality as-built records of existing public and private infrastructure. An active utility coordinating committee mitigates the frequency and financial impact of these problems through improved communication procedures, improved coordination of planned capital works / operation works and improved working relationships.

The key factors in the success of a UCC are:

- The committee be founded and guided by the spirit of cooperation;
- The committee operate under a Terms of Reference or Charter approved by the committee members;
- The member organizations be committed to the responsibilities of the committee; and
- Strong leadership, planning ability and implementation skills are necessary skills of the designated representatives of each member organization.

Benefits: Regular communication between utility owners, municipalities, consulting engineers and contractors improves the level of information concerning current and future projects, and contributes to the identification and resolution of issues of mutual concern.

Communications Protocol
Principles for effective communication in joint utility coordination

Communications among project owners and facility owners should reflect the following:

- Timeliness – Communication among the stakeholders in any project should emphasize the importance of timeliness. Project progress can be facilitated through attention being placed on the time required to respond to requests for information and/or approvals. Conversely inadequate attention to time can lead to significant project delays. The stakeholders should be aware of the time required for responding to such requests, and should incorporate those time lines into the overall project schedule.
- Response Times – Once the time requirements for the collection and compilation of information, completion of design and/or the securing of approvals have been identified, response times should fall within the time parameters established.
- Scope – The exact nature of the request must be clearly stated, and understood by both the requester and the responder. If the requested information, design and/or approval cannot be provided within the overall response time established, this fact should be communicated.
- Frequency – The communication should be regular and on-going so that the needs of both parties are fully understood.

Stages
Communications between project owners and facility owners should take place at each of the following stages:

- Long Range Planning – The point at which the 'strategic, long-term' capital plan is being developed, and approved.
- Multi-Year Program – The point at which the multi-year capital plan is finalized and approved. Multi-year time frames vary according to the project owner's overall planning framework but, for the purposes of this protocol, multi-year is a minimum of two years and a maximum of five years.
- Project Design Initiation – The point at which the project owner is able to define the scope of the project, including the likely starting time for construction.
- Detailed Design – The point at which the exact details of the project have been defined and the construction documents are ready for tender.
- Current Year Program – The point at which the current year program is approved and financed for program construction.
- Construction – During the construction period in order to respond to any circumstances or situations, e.g. where design alterations need to be made.

References:
- CSA S250-11, Mapping of Underground Utility Infrastructure

1-8: Underground Facilities should be Locatable

Practice Statement: The presence and type of underground facilities should be readily locatable, and may be identified through such devices as tone-able pipes, cables, tracer wire, or locator balls and may also include permanent above and/or below ground markers.

Practice Description: No underground facilities should be installed that cannot be readily found at a later date. Existing methods for locating utilities include using geophysical methods for tone-able facilities and those with tracer wire, or the use of permanent locator ball systems. A combination of above and below ground markers could also be used to identify and locate underground facilities. The above ground markers are to identify facilities, and not to circumvent the need to locate facilities prior to excavation. Above ground markers should be developed in the design phase of a project, and should include the company name, type of facility, and emergency contact. The location and types of markers should be specified in the construction plans. (APWA colour standards)

Examples of Practice:

1. In planning the designer should obtain a list of affected facilities and contact the facility owner for design and encroachment information. The design should include, as specified by the owner, marker locations for each encroachment during and after construction.

2. In the installation of additional underground facilities, the designer should obtain a list of affected facilities, and should include a detailed marker system to effectively mark the underground facilities. Examples of a detailed marker system include tracer wires on non-metallic facilities and electronic or surface markers for facilities at excessive depths.

Benefits: The design includes provisions to aid in future locates. In addition, an effective marker system will assist facility owners or first responders to an area involving more than one underground facility or an incident near underground facilities.

References:

- CSA S250-11, Mapping of Underground Utility Infrastructure

1-9: Follow All Applicable Codes, Regulations, and Owner Standards

Practice Statement: When planning and designing the installation of new or replacement facilities, the designer should ensure compliance with all

- federal and provincial statutes, regulations, codes, standards, and guidelines
- municipal by-laws
- owner standards, and
- Best Practices.

Practice Description: The designer of a facility project should consider standards and practices and comply with codes, and regulations applicable to that particular facility, and adjacent facilities. As a matter of practice the designer should circulate the design to the appropriate stakeholders within the right-of-way to ensure compliance. Stakeholder review is facilitated by the level of detail which accompanies the design. Regulations, codes, standards and other design documents generally specify depth of cover, and horizontal and vertical clearances between adjacent facilities.

The designer should consider the protection and temporary support of adjacent facilities, and any interference with existing cathodic protection and grounding systems. Consequently, the designer has to provide specifications on safety measures to be taken and procedures for emergency notification and repairs in the case of any damage to an adjacent facility. Designers and facility owners should make all parties aware of new and revised standards and codes that may affect the project.

Benefits: By reviewing applicable regulations, codes, and standards, the designer minimizes potential conflicts/damages, and facilitates future locates.

References:
- CSA S250-11, Mapping of Underground Utility Infrastructure

1-10: Constructability Review

Practice Statement: Although constructability reviews should occur throughout the design stage, prior to the finalization of the design, the project should be subjected to a constructability review. The participants in this process should include a constructor, the project designer/engineer, and the project owner. Other participants could include the owners affected by the project. This process should result in a final design which can be circulated as appropriate for approvals.

Practice Description: This practice will allow the designer/engineer, constructor, project owner, and facility owners to assess the constructability of the project design, assess project alternatives, review proposed schedules, and to facilitate smoother, less costly, more efficient and safer construction.

Benefits: The application of constructability reviews will result in more efficient construction, more effective design, reduced costs, and improved safety.

PRE-BID/BID

1-11: Use of Qualified Contractors

Practice Statement: Qualified contractors should be used to excavate on and near underground facilities.

Practice Description: Contractors that excavate on and near underground facilities should possess the qualifications necessary to conduct such activities in a manner that is both safe and reliable, and ensures a quality product. The use of qualified contractors ensures that contractors retained to work on a project are capable of performing the work required, and operate safely. By requiring contractors to be qualified, public safety is protected as is the integrity of the underground facilities in the area of the excavation. Allowing a competitive bidding process from qualified, competent, and experienced contractors should assure both quality and price, and should minimize the risk of damage to underground facilities.

Example of Practice: Most large organizations involved in capital works have developed policies to qualify contractors. These policies often involve establishing criteria in such areas as financing, insurance, occupational

health and safety, and performance which must be met prior to participating in the bid process.

Benefits:

- Quality of work;
- Improved safety; and
- Minimized Risk

1-12: Pre-Bid Conferences

Practice Statement: Depending on the size and scope of a project, a prebid conference involving all stakeholders, should be held and bids should be accepted from only those qualified contractors attending the pre-bid conference.

Practice Description: The project owner should require that all potential qualified contractors attend a pre-bid conference involving the facility owners whose facilities might be affected by the proposed excavation and project design. The pre-bid conference should address, as a minimum, the requirements of the project in relation to the protection, support, and safe maintenance of the facilities during the excavation and construction. Pre-bid conference proceedings should be recorded and minutes circulated to all those in attendance.

Examples of Practice: Pre-bid conferences normally involve the project owner, the project design staff, the owners, and the potential contractors. During the pre-bid conference, the contractors are made aware of the special requirements of the project with respect to certification, safety, and the regulatory environment.

Benefits: Pre-bid conferences afford the opportunity for discussion among the owner, contractor, designer, and other interested parties of the many aspects of a proposed project, including:

1. Scope clarifications;
2. The review of contract documents;
3. Regulatory requirements;
4. Schedules; and
5. Damage Prevention.

Pre-bid conferences ensure that all potential participants in the project possess the same understanding of the project requirements, and complexities.

1-13: Contact between the Designer/Engineer and Potential Contractors during the Pre-Bid/Bid Phase

Practice Statement: Once a project design is completed, the designer/engineer should be available to answer questions and clarify aspects during the pre-bid/bid process.

Practice Description: The designer's continuing involvement with potential contractors during the pre-bid/bid phase ensures more effective communications between all the stakeholders. The designer will be available to communicate to the interested bidders the scope and complexity of the project and the proper understanding of the intended design. Additional information should be documented and communicated to all bidding contractors.

Example of Practice: Contract documents should contain contact information for purpose of design clarification.

Benefits: This practice provides quality assurance and minimizes potential safety concerns and delays to project completion as well as the protection, support, and safe maintenance of the facilities during the excavation and construction. It also affords the designer the opportunity to relay information to potential contractors that is not readily shown on the contract drawings.

CONSTRUCTION/POST-CONSTRUCTION

1-14: Contact between the Designer and the Contractor during Construction

Practice Statement: The designer/engineer should be available during the entire construction.

Practice Description: This practice ensures that design support is available for pre-construction conferences, unforeseen conditions, site meetings, design changes, and post-construction conferences.

Benefits: Potential concerns are resolved more expeditiously, thereby minimizing subsequent modifications to the project design, costs, and completion. The designer's progress inspections of the project are also facilitated.

Current Practice: When an undesignated or otherwise unknown underground facility and/or condition is discovered within a work area, the contractor advises the project owner and the designer. If the discovery is made during the construction locates phase of the work, the designer can assess whether or not there is an impact on the design.

Such discoveries can impact on the project by requiring additional work, increasing hazards from the facility, or conflicting with the installation of the new facility.

1-15: As-Built Drawings

Practice Statement: As-built drawings that depict the features and asconstructed location of newly installed or modified underground utilities should be specified as a contract/project deliverable and should be prepared as soon as practicable after completion of construction.

Practice Description: Installation(s) should be made in accordance with the approved construction plans and any deviation from those plans should be recorded on as-built drawings. The as-built drawings should be completed as soon as practicable and retained by the owner of the utility. The information should be made available for future projects and to aid in future locates and construction.

As-Built Drawings generally include:

- Utility owner company name;
- Utility type or function;
- A location description of the project referenced to the title description or geographic location; Any deviations in construction from the approved design with a reference to the construction drawing;
- The horizontal and vertical locations of the centreline of the underground utility;
- The level of accuracy of the horizontal and vertical locations of the underground utility;
- The methodology used to measure the accuracy of the horizontal and vertical locations, e.g. geodetic survey, or relationship to topographical/ physical features at the time of construction;
- Extent of the object (width, height, length and diameter as applicable);
- Notation of the material of the outside structure;
- A reference to the source of the as-built measurements by company name, file number and date of the measurements;
- A north arrow, scale bar and scale ratio;
- Legend depicting all items on the drawing
- The method of construction, e.g. directional drilling.

Current Practice: During and after completion of construction and prior to final acceptance of the installation by the Owner, all "as-built" measurements should be made and recorded on as-built drawing(s). Typically these measurements note any deviation in horizontal and/or vertical alignment from the established baseline, the location of valves, access chambers, manholes, service boxes and stub connections for services. In addition they should note final invert elevations, pipe size, grade changes, any applicable structural details of manholes/chambers and any other information as deemed necessary that may affect future maintenance of the utility. All drawings should note these changes "As Recorded" with date on the drawings in a prominent location.

This updated information should be circulated among the pertinent parties involved in the project as soon as practicable, (i.e. municipalities, utilities, public works authorities, Utility Coordination Committees) and those parties should update their records accordingly. In this way, utility records can be maintained as current as possible.

Benefits: Accurate as-built drawings serve as an integral initial information source for future projects, and minimize the risk of damage to existing underground facilities.

1-16: Sewer/Water Main Service Connections

Practice Statement: Sewer laterals and water main service connections should be installed and locatable from the main to 1.5m beyond the property line in new subdivisions.

Practice Description: For the purpose of health & safety, damage prevention and construction efficiency, sewer laterals and water service connections installed in new subdivisions should be extended from the main to 1.5m beyond the property line and plugged with a water tight plug. This allows workers installing the connections from the stubs to the homes to establish a safe stable work environment and minimizes impact to the existing facility infrastructure.

1-17: Sewer Main and Lateral Infrastructure

Practice Statement: Project and facility owners should use all reasonable and available means to share sewer main and lateral information including, but no limited to, location.

Project and facility owners should assess the potential risk and create an appropriate mitigation plan with regards to utilities installed by trenchless methods that may have inadvertently intersected sewer infrastructure.

Practice Description: In the planning phase of a project, the designer should request all sewer main and lateral information including Foundation Drain Collectors (FDC's) pertaining to the project area from the sewer infrastructure owners . The sewer infrastructure owners should provide the sewer main and lateral information if available.

If the project owner completes private sewer locates, the project owner should forward all documentation to the sewer infrastructure owners. The sewer infrastructure owners should retain this information and make it available upon request.

Benefits: Sharing information will allow both parties to effectively communicate sewer main, lateral and FDC locations so underground infrastructure can be installed without damaging sewer laterals. This initiative also provides the sewer infrastructure owners with updated information of sewer line locations.

This practice should reduce the likelihood of damaging sewer mains or laterals when installing underground infrastructure.

It has been found that sewer mains and laterals can be damaged during the installation process of underground infrastructure. Damage can remain undetected until a sewer cleaning process is initiated. The cleaning process can potentially lead to an incident if a utility had penetrated the sewer main or lateral during installation

1-18: Demolition Permit Application Process

Practice statement: The Municipality shall have a process requesting that the demolition permit applicant receives confirmation of all utility disconnects prior to issuing the demolition permit.

Practice Description: The Municipality shall request that the applicant makes arrangements with the appropriate utilities for the termination and capping of all the water, sewer, gas, electric, telephone, cable or other facilities/services. Furthermore, the Municipality should indicate on the demolition permit that locates should be obtained from utilities prior to the demolition beginning.