



**MANAGEMENT OF UTILITIES IN AND ADJACENT TO THE
PUBLIC RIGHT-OF-WAY:
SURVEY OF PRACTICES**



August 2008

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EXECUTIVE SUMMARY

In Canada, road authorities are charged with ensuring the safety and convenience of road users. It is in the public interest to accommodate others, notably utility companies, within the right-of-way whenever practical. Management of utilities in the right-of-way is the responsibility of the road authority and it has become increasingly complex in recent years as growth continues at a rapid pace in most regions.

This documents the management, coordination and placement of utilities in the right-of-way as they relate to the needs of the road authorities. One must consider the long term needs of utility companies to install, operate and repair their facilities in a coherent, safe and efficient manner while minimizing the disruption to road users and other utility infrastructure.

The intention of this effort was to gather practices from across Canada supplemented by a project-specific questionnaire distributed to the road authorities of each province and territory as well as one municipality in each province. The data gathered through this study were not comprehensive and rather limited to the information obtained from six provinces and three municipalities.

Study results show that the approach to coordinating work with utility companies varies between each jurisdiction. Most provinces coordinate work on a district basis and only a few supplement that with higher level discussions of broader issues. The limitation of coordination on a project by project basis precludes working on broad policy issues and leads to inconsistencies in approaches and standards. These results in the effectiveness of the coordination being dependent on the personal relationships and negotiating skills of those involved.

There is a broad consensus about the utility issues facing road authorities:

- Utility relocations delay road projects and increase costs;
- The quality of data, either for field locates or as built drawings is often poor;
- Costs are incurred due to the decrease in road service life as a result of utilities cutting newly constructed pavements; and
- Significant effort is required to obtain equitable sharing of costs for administering the management of the right-of-way, pavement degradation and utility relocation.

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More work is required in developing collaborative approaches, data standards and common data systems. Research on data management could be structured on asset management theories. Practices including permitting, utility marking and inspections seem well-developed and consistent across authorities. In general, municipalities make use of standard line assignments, which may lead to greater predictability. Provincial approaches to locating utilities in the right-of-way is less structured. In order to save the administrative costs, in researching the transfer of some approval activities to the utilities, the issues of ensuring *duty of care* should be addressed.

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1. INTRODUCTION

1.1 Purpose of Study

The purpose of the study was to document the management, coordination and placement of utilities in the right-of-way as they relate to the needs of the road authorities. The intention was to gather practices from across Canada supplemented by a project-specific questionnaire distributed to the road authorities of each province and territory as well as one municipality in each province. The data gathered through this study were not comprehensive but rather limited to the information obtained from six provinces and three municipalities.

1.2 Statement of the Problem

In Canada, road authorities are charged with ensuring the safety of road users and the efficiency and convenience of the road system. It is in the public interest to accommodate others, notably utility companies, within the right-of-way where practical. The accommodation of utilities is recognized in federal and provincial legislation. There is an obvious potential for the needs of the travelling public, the road authority and the utility company to be in conflict. Certainly, the presence of a utility within the road right-of-way can lead to increased costs when relocation of the utility is required to accommodate any changes to the road. Costs and inconvenience may occur when utilities are installed or modified. The presence of utility facilities, such as poles, may affect safety. It is incumbent on the road authorities to develop policies, procedures and designs to manage challenges when utilities are present within the right-of-way.

1.3 Organization of the Document

The document begins with a description of the methodology and a review of the available literature, organizational approaches and legislation. It includes the summary of the survey results. Some general conclusions are drawn about the similarities and differences in the approach to management of utilities by road authorities and suggestions for further work.

The document addresses all utilities, both public and private, including hydro (transmission and distribution), natural gas (transmission and distribution), telecommunications (telephone, cable, cell systems and fibre optics), water and sewer including emerging technologies, specifically cell systems and fibre optics. All public road systems from freeways to local roads, both urban and rural are discussed.

2. METHODOLOGY

A work plan was developed to address all aspects of the interaction of the road authorities and the utility companies including the relationships between parties, the legislative and policy context, planning, project development, utility placement, and working in the road. The study methodology includes literature review and survey of Canadian road authorities. After a review of the literature, a survey was conducted to probe all aspects of managing utilities in the road right-of-way. Because of the large number of potential respondents and the breadth of the data sought, it was decided to use a comprehensive survey to gather data. Questions were developed to examine:

- the relationship and issues between road authorities and utility companies,
- legislation and policy,
- project planning,
- land acquisition,
- design and construction,
- standard utility alignments,
- working in the right-of-way, and
- provision for new technology.

The data collected was analysed and is discussed by sector: relationships, policy, planning, design, construction and operation in the right-of-way.

The transportation departments from all provinces and two territories were contacted. Twenty-three municipal road authorities were also contacted. The responses were provided by the following organizations:

Provincial:

- Alberta Transportation
- New Brunswick Department of Transportation
- Nova Scotia Transportation and Infrastructure Renewal
- Ministry of Transportation Ontario
- Saskatchewan Highways and Infrastructure
- Ministère des Transports du Québec

Municipal:

- City of Hamilton
- City of Surrey
- City of Toronto

Literature review and summary of the survey results are presented and discussed in the following chapters.

3. LITERATURE REVIEW

3.1 American Practices

American policy regarding utilities in freeway rights-of-way is useful because of their extensive network and long experience. Few publications concerning on road rights-of-way other than freeways were discovered. Four documents were reviewed that summarize the historical and current practice:

- Williams, Ronald, NCHRP Synthesis 224, *Longitudinal Occupancy of Controlled Access Right-of-Way by Utilities*, Transportation Research Board, NRC, 1996, Washington, DC;
- American Association of State Highway and Transportation Officials (AASHTO), *Guidance on Sharing Freeway and Highway Rights-of-Way for Telecommunications*, 1996. Washington, DC;
- American Association of State Highway and Transportation Officials (AASHTO), *A Policy on the Accommodation of Utilities within the Freeway Right-of-Way*, 2005, Washington, DC;
- American Association of State Highway and Transportation Officials (AASHTO), *A Guide for the Accommodation of Utilities within the Freeway Right-of-Way*, 2005, Washington, DC.

A national freeway expansion initiative in the United States began in the fifties with massive federal support. The critical priorities considered were the safety and efficiency of the highway with utilities being restricted and gradually relocated to minimize conflicts. The result, after fifty years, was rights-of-way largely free of utilities. Congress revised the 1959 legislation restricting utility occupation in 1998 for broad issues of public policy¹. They did not want restrictions on utilities to limit development, encouraged expansion of the telecommunications system and also recognized the cost savings from joint use of the right-of-way. Authority over accommodation of utilities was turned over to the States, albeit with significant oversight by the Federal Highway Administration (FHWA) in 1998.

There was broad consensus between state highway officials that utilities other than telecommunications could not be accommodated safely and that it would be folly to reverse years

¹ TRB NCHRP 224, p 3

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of practice and allow utilities to re-enter the right-of-way. Their reasoning was primarily based on their assessment of the consequences of utility work on safety and efficiency. Some also believed that administrative costs and relocation costs would be excessive and that if one utility was allowed that others could not be excluded.

The FHWA is of the view “that fibre-optic cable is not materially different from any other low maintenance underground facility.”² The legislation is less restrictive than American Association of State Highway and Transportation Officials’ (AASHTO) guidelines and policies which are used by the states.

In 2005, the AASHTO policy on utilities in the freeway right-of-way was updated. Its key conditions are that utilities are prohibited except in special cases where:

- The accommodation will not adversely affect the safety, design, construction, traffic operations, maintenance or stability of the freeway.
- Alternate locations are not available or are cost prohibited.
- It will not impair the present use or future expansion.
- Location outside of the right-of-way would result in the loss of productive agricultural capacity
- General guidelines are also presented covering crossings, access, documentation and related issues.

All states allow utility occupation in hardship cases.³ A survey of practise was reported by AASHTO in 1996. Whereas the policy addressed all utilities, in practice, accommodation was made for only fibre-optic cable and only in seven states. Five states allowed transmission lines under certain conditions. All others do not normally allow utility accommodation. The report on practices found that there had been no negative experience documented for those states that had allowed telecommunications to occupy freeway right-of-way.⁴

Pressure to include utilities within road rights-of-way continues and the Federal Energy Regulation Commission (FERC) is considering the placement of high voltage direct current

² TRB NCHRP 224, p 8

³ TRB NCHRP 224, p 9

⁴ TRB NCHRP 224, p 12

transmission on road rights-of-way albeit with input from states and the public. In 2008, the Government Accountability Office (GAO) issued a report on the risks and benefits of such action.⁵

3.2 Related Research

3.2.1 European Experience

In 2000, three national transportation organizations in the United States, the FHWA, AASHTO and Transportation Research Board (TRB), sponsored a screening study of the management of utilities in road rights-of-way in four European cities.⁶ A number of practices were identified as different from the North American approach and worthy of consideration:

The European approach to land acquisition is more coordinated and flexible than the study team had experienced before. Property owners are often approached before design begins. An attempt is made to have one person, representing the road authorities and the utility, deal with the landowner for appraisal, negotiation, acquisition and relocation. There appears to be more flexibility in allowing costs of disruption including disruption of business. There were also examples where land disrupted by construction was re-consolidated and re-distributed back to affected landowners. The team concluded that the flexible land acquisition process resulted in fewer delays to the project. Payments are often made in advance or for access to a site in order to avoid delays. It may be that the greater extent of public ownership of utilities makes this more practical than may be the case in North America.

Coordination and cooperation between road authorities and utility companies was found to be very good with master agreements being common. Utility corridors were often provided and these included installation of extra conduit for future use. Overhead utilities were very rare with a resultant improvement in safety⁷.

Multi-disciplinary teams are often used on projects with significant time budgeted for land acquisition. Land owners are involved in developing options. Design-build contracts are common in England with the scope including utility relocation.

⁵ GAO, 2008

⁶ Moeller, 2002

⁷ Moeller, p 18.

3.2.2 Utilities and Roadside Safety

The Transportation Research Board has published a report on the status of safety programs and technologies concerned with utility poles along the roadway. The report describes solutions and countermeasures for dealing with collisions. They also provide a technique for cost-benefit analysis.

The authors propose a strategy which will:

1. Prevent the recurrence of a fatality or injury at sites where collisions have already occurred.
2. Prevent the occurrence of a fatality or injury at sites where collisions are likely to occur.
3. Save utility maintenance funds.
4. Put a utility in the best position to defend the clearly random collision⁸.

The authors found that the objectives could be met by a combination of crash data analysis and use of equations to predict high crash locations. Use of analysis to predict high collision locations and incorporate that information in a capital program of countermeasures would form the core of a strategy to demonstrate *Duty of Care* and limit liability.

The authors found that this approach was rarely used in America but they did review a number of programs by states and utility companies. Approaches vary but generally involve data collection and prediction with more or less coercive pressure on utilities to address problem locations and meet targets for improvement.

3.2.3. Natural Gas Pipeline Safety

The safety of natural gas pipelines placed in the road right-of-way was assessed in the TAC *Study of Natural Gas Pipelines in Rural Road Rights-of-Way* (2001)⁹. Historical failure rates for pipelines from a variety of causes were modeled and risk calculated by combining failure rates with exposure, which is the likelihood of a highway user or worker being in the vicinity of a pipeline accident. The analysis was repeated with assumptions that various measures were taken to minimize risk (day-lighting procedures, increased depth of cover, etc). The study concluded that the presence of a natural gas pipeline would increase costs to construct and maintain the highway. They concluded that pipeline failures along a highway would be higher

⁸ TRB p 18.

⁹ Transportation Association of Canada (TAC), 2001

than elsewhere because of the increased activity (road construction, installing poles, signs, guardrails, etc). They also conditionally concluded that the risks would be acceptable with all safety measures in place if road maintenance and construction firms developed attitudes and approaches to work that are standard practice in the pipeline industry. The implication is that safety could be maintained if the construction and maintenance community changed their culture of work.

3.3 Managing Data

3.3.1. Asset Management

The report *An Integrated Approach to Assessment and Evaluation of Municipal Road, Sewer and Water Networks*¹⁰ was prepared for public road, sewer and water systems. The National Research Council (NRC) recommends that municipalities adopt an integrated approach to plan the renewal of their road, sewer and water systems. A systematic and proactive model is developed to ensure that renewal programs are based on sound data and are adequately funded.

The five stages to the suggested approach are: inventory, investigation, condition assessment, performance evaluation and renewal plan.

Municipalities should compile utility-based data in accordance with the guidelines presented in the Best Practices for Utility-Based Data¹¹. The data format and content will vary among municipalities, but should allow for proactive management and be integrated. An inspection program should be developed to collect information about the road, sewer and water systems to ensure decisions are based on the proper information. The results on the inspection program need to be properly documented and stored. Condition assessments should be used to identify and prioritize renewal requirements for each system. Once the assessment is complete, a performance evaluation should be made to project the required investment over the next 10 to 20 years. Finally, once a component of a system has been identified for renewal an economic analysis should be used to select the most cost-effective renewal method and the timing for renewal.

The following study is presented because its conclusions should apply to roads and it has implications for management of utilities. It suggests possible approaches and requirements which may be imposed on utilities. A significant portion of water and wastewater

¹⁰ NRC 2003

¹¹ NRC November 2003

utilities in the United States report that they were not generating enough revenue from user rates and other local sources to cover their full cost of service. Additionally, about one third of the utilities deferred maintenance, they had 20% or more of their pipelines nearing the end of their useful life and lacked plans for managing their capital assets. Concerns about the condition of the infrastructure has prompted calls for the federal government to increase funding to the utilities while at the same time ensure that the investment is protected. The government has been considering a number of plans including requirements that local utilities implement an asset management plan. Some utilities are using comprehensive asset management. A study, entitled *Water Infrastructure, Comprehensive Asset Management has Potential to Help Utilities Better Identify Needs and Plan Future Investments*¹² by the United States General Accounting Office (GAO), examined the potential benefits of comprehensive asset management for water and wastewater utilities and the role that the federal government can play in encouraging utilities to implement asset management.

The GAO interviewed 46 water and wastewater utility companies in the United States that had implemented asset management as well as 6 utilities and 5 government agencies from Australia and New Zealand as they are considered leaders in implementing comprehensive asset management in their utilities.

The interviewed utility companies reported seeing benefits from improved decision making process, because they have more accurate and integrated information as well as more productive relationships with governing authorities, ratepayer and other stakeholders, which can provide better information in a more transparent way. They also encountered challenges with implementation including collecting and managing the needed data and making cultural changes necessary to integrate information and decision making across departments.

3.3.2. Utility Data Best Practice

The best practice guide created by the National Research Council (NRC) and the Federation of Canadian Municipalities (FCM) was created as a resource for municipalities wishing to begin the process of identifying, storing and managing utility-based information¹³. It is based on the practices of public utility companies and private organizations that have been proven successful. A common framework for the utility-based information is presented. Seven data categories are

¹² USGAO 2004

¹³ NRC, 2003

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suggested and these are: system attributes, operations and maintenance, performance, meteorological, customer, financial and environmental.

The practice stresses that the requirement for a good decision making process are reliable, current and well understood data. Data collection process must be repeatable. Information on the data collection process should be well kept. Proper data management is key to the project's success.

The best practice does not recommend specific software or hardware but states that the best choice varies depending on the size of the municipality. It is expected that as the best practices are put in place municipalities will eventually arrive at a common data standard or framework. The work started with this best practice is not complete. It is viewed as an evolving, on-going process. This last statement seems born out by our discussions for the current project. In general, road authorities were not aware of the approach (few road authorities practice asset management) but it was known by the municipalities.

4. ORGANIZATIONAL APPROACHES TO MANAGING UTILITIES IN THE RIGHT-OF-WAY

In addition to the relevant literature, organizational approaches to managing utilities within the right-of-way were reviewed.

4.1.1 Collaborative Approaches

The Ministère des Transports du Québec (MTQ) has initiated a collaborative approach to work with utility companies in response to high costs of relocating facilities along roadways. They have developed framework agreements which resolve many issues across the province and set procedures for managing work. A committee, including the staff from MTQ and utility companies meet three times per year to deal with the agreement and with issues arising from the agreement. It is the intention that this vehicle would be a means for innovation and flexibility. The group has sponsored research supported by the parties. One interesting issue dealt with is the problem of regionalization. Many provincial road authorities are dispersed and operated with much autonomy in relatively small districts. It is difficult to manage the relationship consistently across the organization. This problem was solved by instituting a multi-disciplinary committee with one representative from each of fourteen districts. This group keeps all of the regions informed on the framework agreement.

Recently, the MTQ has cooperated with the work of the *Alliance pour la protection des infrastructures souterraines du Québec* (APISQ) which is a regional partner of the Common Ground Alliance (see 4.1.2).

It is known that the British Columbia Ministry of Transportation and Infrastructure has been working with utility companies on a project to coordinate work within the right-of-way and reduce the need for relocations through improved communications, however no details were provided. The Ontario Ministry of Transportation meets with the major utility companies twice per year to address outstanding issues. The New Brunswick Department of Transportation has annual tri-agency meetings, which address coordination of upcoming work. Except for Québec, the focus of these approaches appears to be coordination of the relocation process rather than research and joint problem solving.

4.1.2 Ontario Regional Common Ground Alliance

The Ontario Regional Common Ground Alliance (ORCGA) has developed best practices to help prevent damage to underground infrastructure. The ORCGA is an organization promoting efficient and effective damage prevention for Ontario's vital underground infrastructure. They have been developed through the commitment and consensus of its wide cross section of members including utility owners, contractors, engineers, insurers, locators and municipalities. The Best Practices document was adopted and developed based on the Common Ground Alliance (CGA), which is a US based entity. The current version 3.0 was published in March 2007.

The guide has a number of statements regarding practice. These include: planning and design best practices, one-call centre best practices, locating and marking best practices, excavation best practices, mapping best practices, compliance best practices, public education best practices and reporting and evaluation best practices.

The ORCGA was the first organized branch in Canada, however recent actions have brought on additional provinces including British Columbia, Alberta, Manitoba, Québec and New Brunswick; which are in the process of forming a unified Canadian Common Ground Alliance.

A study was prepared for the ORCGA to quantify the costs of excavation damages to the underground infrastructure in Ontario. It analyzed data from 2000-2003. Costs for damage due to excavation were grouped into either corporate costs or societal costs. The study found that there is strong evidence of a significant problem in Ontario. The rising costs of excavation related

damage to underground utilities are attributable to the increased construction and development activity, combined with an increasing share of buried networks to above-ground infrastructure and restructuring of the utility markets. The study concluded that there is substantial evidence that the non-located excavation damages are a significant risk to public safety and the integrity of Ontario's buried infrastructure, as well as a growing financial burden. They also concluded that there was a need for greater cooperation in the development of a common approach to damage prevention.

4.1.3 Subsurface Utility Engineering (SUE)

A key component in any utility coordination effort should be an accurate understanding of the existing conditions. Without an accurate map of what utility plant is presently in and above the ground, it is impossible to effectively design and coordinate the necessary provisions that must take place to accommodate the project. Subsurface Utility Engineering (SUE) has been developed over the past 10-20 years to address this type of utility related issue. The American Society of Civil Engineers recently published a guideline CI/ASCE 38-02, which acknowledges SUE and sets forth the basis for the use of the various techniques and has become quite widely used particularly in Ontario and more recently Alberta. The big advantage of completing the SUE investigation early in the design is that there is a solid level of understanding about what is present and therefore meaningful decisions can be made to deal with those utilities.

The fundamental aspect of the CI/ASCE – 38-02 Standard is the notion of assigning quality levels to the information shown on a drawing. The quality levels provide an indication as to how the information was collected, and therefore an idea of its accuracy and reliability. Utilization of SUE principles and the CI/ASCE 38-02 Standard is recognized by many groups and agencies including the Common Ground Alliance as a best practice document. Its use is improving the overall utility coordination process, and therefore is expected to increase in the future.

4.1.4 Experience from New Zealand

Road authorities and utility companies in New Zealand have formed the New Zealand Utilities Advisory Group. They have developed a program called Roadshare, which is similar to Canadian Common Ground organizations¹⁴. They have developed a comprehensive standard for work in the road.¹⁵ Details such as working around trees, specifics of pavement cutting, recompaction standards are included among others. They have also developed operating principles and

¹⁴ <http://www.nzuag.org.nz/roadshare/>

¹⁵ Standards New Zealand HB

dispute resolution processes. The scope has extended to include compensation agreements. At least two aspects of the organization are worth noting: coordination activity begins very early in the planning process and standard forms and standards are used by all road authorities and utility companies. This last point has made training and certification of workers a practical objective.

5. LEGISLATION AND GOVERNANCE

5.1. Provincial Legislation

Each province has legislation governing the operation of the road system:

- Alberta: Alberta Highway Development Act <http://www.canlii.org/ab/laws/sta/p-38/20071213/whole.html>
- Saskatchewan: The Highways and Transportation Act <http://www.qp.gov.sk.ca/documents/English/Statutes/Statutes/H3-01.pdf>
- Ontario: Public Service Works on Highways Act http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90p49_e.htm and The Public Transportation and Highway Improvement Act . http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90p50_e.htm
- Québec: Loi sur la voirie http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=3&file=/V_9/V9.htm
- New Brunswick: The Highway Act <http://www.canadalegal.com/gosite.asp?s=3446> ; the Highway Usage Regulation <http://www.canlii.org/nb/laws/regu/1997r.137/20071015/whole.html> and the Use of Highways Regulation <http://www.canlii.org/nb/laws/sta/h-5/index.html> (sets out location of poles and gas and water lines(1.5 meters from edge of right-of-way).
- Nova Scotia: Public Highways Act <http://www.gov.ns.ca/legislature/legc/statutes/pubhighw.htm>

There are many common aspects of these statutes:

- They establish a duty of care wherein the Crown is responsible for the safety and convenience of the highway users.
- They empower the Crown to control the occupation on the right-of-way by a utility.
- They provide for the extension of these powers to municipalities.

The Public Service Works on Highways Act is quite different from the others. It makes provision for the road authority and the utility to agree on the apportionment of costs, but, in the case where

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there isn't agreement, costs are shared equally. There is also the possibility of applying to the Ontario Municipal Board to obtain an equitable sharing of costs. The Public Transportation and Highway Improvement Act makes provision for charging a permit fee.

British Columbia, Alberta and Saskatchewan have legislation regulating hydrocarbon pipelines. These set out standards for construction and operation of pipelines including conditions for road crossings. They typically reference the standard CSA Z622.

The Ontario Energy Board regulates transmission lines including electrical lines and hydrocarbon pipelines. They manage the standards and approval process but recognize that road authorities have some restrictions in place limiting the location of transmission lines. Projects are reviewed by the Ontario Pipeline Coordinating Committee (OPCC) which includes representation from the Ministry of Transportation and the Ministry for Municipal Affairs and Housing. Provision is made for representation by affected municipalities. The Board publishes procedures and guidelines which require the proponent of a pipeline to contact road authorities as well as regional and local municipalities. They also address the technical requirements of a crossing and restrictions for operating in a road right-of-way.

The OPCC reviews facilities projects in Ontario requiring approval from the Ontario Energy Board or the National Energy Board, with the goal of minimizing negative impacts. In effect, the OPCC provides a single contact for identifying provincial concerns related to transmission and storage proposals. In addition to the OPCC representatives, affected regional and local municipalities, and conservation authorities are involved in the OPCC review. The Guidelines have been developed in consultation with representatives of the OPCC. Therefore, the Guidelines are consistent with the mandates of the above ministries and agencies.

Finally, many provinces and municipalities refer to Occupational Health and Safety Regulations for standards regarding power lines and work near buried utilities.

5.2 Municipal Legislation

Municipal road authorities operate under provincial legislation. Two are referenced here by way of example:

- The British Columbia Local Government Act
http://www.qp.gov.bc.ca/statreg/stat/L/96323_00.htm
- The City of Toronto Act http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_06c11_e.htm#BK9

Typical powers extended are to control utility companies operating on a right-of-way and to allow municipalities to enter a roadway for work on their own utilities. Legislation also allows for rights of municipalities and regional governments to work on roads that may be under the authority of another government in the region.

Municipalities report having little influence over the operation of nationally managed utility companies, particularly telecoms. Telecoms were singled out because of their need to splice thousands of lines and the cost pressure due to deregulation (fewer available crews) have made them a particular source of delay and cost. Improvement was suggested for forecasting capital works since they are entirely driven by customer demand. Another obstacle is the conflict over ownership of the right-of-way.

5.3 Federal Legislation

Federal legislation governs those utility companies which cross provincial boundaries:

- The National Energy Board Act http://laws.justice.gc.ca/en/showdoc/cr/SOR-88-529/bo-ga:s_3::bo-ga:s_4?page=1 This Act governs the crossing of a pipeline by a road or other facility. The National Energy Board website says that these regulations are to be replaced with new regulations intended to reduce damage to underground utilities.
- The Telecommunications Act <http://laws.justice.gc.ca/en/T-3.4/index.html> governs telephone and telecommunications including cable.

The legislation directs the pipeline or telecommunication operator to apply to the road authority for approval for work in the right-of-way. However, if an agreement cannot be reached, a reference can be made to the Canadian Radio and Telecommunication Commission or the National Energy Board for a ruling on the allocation of costs.

Normally the road authority owns the right-of-way and makes space available for utilities to cross or occupy longitudinally under a permit of occupation. In some jurisdictions certain inter-provincial carriers may insist on maintaining ownership over right-of-way where a new road is to cross the utility. This means that the highway is located on land that it is not owned by the road authority. This issue is known as the *Lot X Issue* and has implications for the ability of the road authority to control the right-of-way. For example, if the roadway needs to be altered, permission of the utility would be required and the utility company's costs may be ascribed to the road authority.

5.4. Disputes

Respondents reported that litigation was not viewed as useful by road authorities where the utility was publicly owned. Alberta reported having disputes settled outside of the courtroom but with the help of the Justice Department. The City of Surrey's respondent referred to the Oil and Gas Commission for dispute resolution but noted that they were still proceeding to court.

A few disputes were discovered in the study, all with federally chartered utility companies. New Brunswick has the power to charge those using the highway right-of-way and had levied rather small charges against the Rogers Cable Communications. The Rogers refused to pay and applied to the CRTC for relief under Section 43(4) of the Act. The Rogers claimed and charges must be based on the incremental cost incurred by the province as a result of the cable being in the right-of-way. Since the cable was hung on poles belonging to others, and since those owners did pay for occupying the right-of-way, there could be no incremental cost to the province. This application was denied. The ruling upheld the notion and the principle of causal costs was important and did apply, but in this case the expenditure to determine the extent of damage caused by the Rogers' trucks working in ditches would be unreasonable in light of the small fees and the large revenues flowing to the cable company. The Rogers was instructed to negotiate an agreement with the province.¹⁶

In case of the City of Surrey and the Terasen Gas, a roadway was to be widened over a gas line. The Terasen Gas insisted that the City covers all costs. The City wanted some sharing of costs and has applied for a resolution in court.

Alberta and a pipeline company had a similar case to the one in the City of Surrey. However, the line in question was fifty years old and the province wanted some consideration for the depreciated value of the facility. The issue has been negotiated.

6. SURVEY RESULTS

6.1 Relationships: Utility-Road Authority

It was postulated that an important aspect concerning the effectiveness of the system was the relationship developed between the various utility companies and the road authorities. Specific questions were asked during the survey to determine the nature of that relationship.

¹⁶ Cited at <http://www.crtc.gc.ca/archive/ENG/Decisions/2007/dt2007-8.htm> - 97.0KB

Respondents were asked to rate the quality of the relationship with utility companies in respect of six characteristics: cooperativeness, efficiency, professionalism, lack of coordination, amount of conflict and intrusion of bureaucratic processes. Possible responses were: very true, usually true, rarely true and not true.

It is worth noting that a few respondents indicated “*very true*” for any of the characteristics except professionalism. Cooperation and coordination were also reviewed positively. The efficiency and bureaucratic process involved were viewed less positively. There is also a wide divergence in the responses suggesting that some authorities have either more efficient procedures or more flexible partners. One can conclude that respondents believe that the efficiency of the joint work could be improved. Some specific comments are discussed in this report.

6.2. Issues of Concern

In order to focus the investigation as well as determine the similarities and differences across the country, the road authorities were asked what they consider as key issues.

There was some consensus about issues and concerns and these are summarized in a general order of the frequency of their appearance (number of mentions shown in bold):

- Delay of road construction due to relocations **6**
- Quality and timeliness of as-built drawings **4**
- Losses due to utilities being installed in newly constructed roads **3**
- The ability of utility companies to identify the exact location of their facilities **3**
- Cost allocations of relocation work **3**
- Maintaining coordination and communication **2**
- Ensuring utilities are placed in correct location **1**
- Issues of policy such as accommodation of utilities on structures or allowing occupation across freeways **1**

The survey suggests that the paramount concern, one expressed by a large majority of respondents, is the cost associated with delays to construction or utility work soon after new construction. Municipalities mentioned degradation of pavement due to cuts for utilities more often than did provincial authorities. The second common concern was the general poor quality of drawings and location data and difficulties with field locations. Related to this point was

concern with the availability of quality of as-built drawings. Finally there was a general concern about difficulties maintaining coordination.

6.3. Policy, Cost Sharing and New Technology

6.3.1 Policy

Six respondents reported having policies for utilities occupying the road right-of-way. Some standard cross-sections are available from municipalities. Saskatchewan and the City of Surrey did not have a written policy. Some common policies include:

- Utilities are generally not permitted along freeways unless no other reasonable option is available.
- Natural gas transmission lines were not permitted within rights-of-way unless no reasonable alternative was available. In Alberta they must be 30 meters outside of the right-of-way. In Nova Scotia they must be 30 meters beyond the right-of-way. In a few cases they may be permitted but never closer than six meters from the roadway. In Saskatchewan they must be beyond 100 meters.
- Power lines and telecommunication lines, whether above or below ground, are normally restricted to a strip of either 1.5 or 2 meters along the edge of the right-of-way.
- Depth of cover varied somewhat, probably dictated by climate.
- Municipalities generally have a particular location which they assign to a utility. Provincial authorities seemed not to assign location for gas, water or sewer lines except that water lines are not normally placed under a road in rural areas. Some provinces indicate that they start at the edge of the right-of-way and move in toward the road with each additional utility line.
- All report having procedures for the issuance of permits for utility companies working in the road.

Only municipalities are direct participants in One-Call systems but road authorities were, of course, users of such systems which exist in participating provinces. The City of Toronto sewer, water and traffic signal departments do not participate in a *First-Call* system.

City of Toronto along with the City of Calgary, City of Hamilton, Ontario and Alberta are members of the Common Ground Alliance.

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The City of Surrey and Nova Scotia have not developed master operating agreements. The City of Toronto has some master agreements with newer (smaller) Telco's based utilities on a sliding scale using the FCM recommendations. However, most established utilities follow Ontario's Public Service Works on Highways Act. Québec stands out by having agreements signed with all major utility partners.

6.3.2 Fees and Compensation

In most cases utility companies are not charged for occupying the right-of-way. The major exception is Ontario (both the Ministry and the municipalities). Fees are charged to utility companies on an annual, per kilometre basis, although this does not cover the Bell, telecommunications company. The City of Toronto also does final restoration on utility work and charges the utility company the restoration costs plus a fee to cover the permitting and administration of the restoration. This is done in New Brunswick as well. A few organizations have charged fibre-optic providers and two respondents reported charging cell phone companies for cell towers within the right-of-way. This latter point mirrors experience in the United States where cell phone facilities are treated as commercial operations and a fee is charged for leased land.

Respondents from Québec elaborated: *"The MTQ does not charge public utility providers (whether public or private firms) for having their equipment installed within roadway rights-of-way (including autoroute rights-of-way). The main reason for this is that the government taxes the equipment value of telecommunications, gas, and electricity (TSP: "taxes sur les services publics") network operators. This tax is collected by the Ministère du Revenu du Québec, and some of the proceeds are distributed to the municipalities (revenue treated as property taxes) that initially collected it. The only exceptions are cellular phone network operators, who pay rent for occupying roadway rights-of-way. This rent is collected annually, and deposited into the Québec government's consolidated revenue fund. These firms are not subject to the TSP tax (they pay property taxes directly to municipalities)."*

Payment for costs of relocation due to road work varied. Generally, provinces paid fewer utility companies and municipalities paid more. Utility companies responsible to the national government (Telecoms and inter-provincial pipelines) received compensation while local utilities usually do not.

Some specific comments received from respondents are cited here:

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- Saskatchewan Highways and Infrastructure - “Most utilities in Saskatchewan are publicly owned. As such compensation is not an issue. A policy decision has been taken to treat utility companies the same. So for instance, the private telephone companies are treated in the same way as is Sasktel”.
- Alberta Transportation - “ Alberta described a policy where the utility occupies the right-of-way for free but then they try to negotiate agreements for cost sharing when relocations are required. Gas distribution lines have received compensation due to an old agreement. There is a dispute regarding gas transmission lines as discussed above”.
- Ontario Ministry of Transportation - “Most compensation is governed by the Public Service Works on Highways Act”.
- City of Toronto - “Most compensation is governed by the Public Service Works on Highways Act. They are also working to implement a policy whereby if a utility company has submitted an inaccurate as-built, they would be responsible for any relocations that arise as a result of this inaccuracy”.
- Ministère des Transports du Québec - “Generally, MTQ shares relocation costs 50-50 with utility companies except for utilities installed on bridge or inside freeway right-of-way, for these cases utility companies pay 100%”.
- “City of Surrey provides compensation for gas transmission, telephone and hydro”.
- New Brunswick Department of Transportation – “If relocation due to construction, it is cost shared. Temporary relocations are at full cost. Relocations on easements owned by utility are full cost. If the utility is forced underground, DoT is responsible for design, installation and the cost of ductwork. Hydro is also reimbursed for the cost of replacing an equivalent amount of aerial plant. The cost sharing is set out in an agreement. Transmission lines are not normally on the right-of-way. If they are, the utility acquires an easement. If highway work affects an easement, DoT is totally responsible. If the hydro line were placed in an improper position, compensation would not be provided. Compensation is not paid on customer owned services, on municipal services or on new bridge construction (where the utility reimburses DoT). New Brunswick is attempting to negotiate rates governing compensation”.
- “Nova Scotia Department of Transportation and Infrastructure Renewal does not normally pay compensation for relocation costs”.

6.3.3 New Technology

The part of the project scope was to determine if new technologies were specifically addressed by road authority policy. The respondents did not report any specific policy for

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accommodating fibre optic cable in the right-of-way. This is interpreted to mean that there is no accommodation for fibre optics along freeways as was discussed previously and it is assumed that it is treated in the same way as telecommunication cable. Similarly, there was no special accommodation of cell phone towers. MTQ has a master operating agreement with Bell Mobilité. MTO (Ontario) has a master agreement with Bell Canada for fibre optic cable along Highway 401. MTO also has a master agreement with TELUS, Rogers Cable and Bell Mobility for the placement of cell towers on the highway right-of-way. This may be an area to be further explored in part because these technologies may be useful in design of “intelligent” highways.

6.4 Project Planning, Coordination, Land Acquisition and Management

6.4.1 Data Sharing

All respondents reported maintaining the records of utilities. There was no clarity discovered on the media with most organizations using a combination of CAD drawings, GIS systems and paper.

Three authorities reported using *CI/ASCE Standard 38-02 – Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (Subsurface Utility Engineering - SUE)*: City of Hamilton, City of Toronto and MTO.

Only City of Hamilton and City of Toronto reported being aware of the CSA Draft Seed document: S250-07 Mapping of Underground Utility Infrastructure

A majority of organization reported acquiring utility data early in the project development phase:

- Preliminary design – Alberta, New Brunswick, City of Hamilton and City of Surrey
- 10% design – Saskatchewan.
- 30% design – Ontario.
- 50% design - Québec.
- Other – Nova Scotia and City of Toronto.

A majority of locations exchange data on paper drawings although a large minority reported using various formats. Two authorities reported using CAD files. For their downtown, the City of Toronto uses a CAD based utility database which is shared and maintained by members of the Public Utilities Coordinating Committee. Early requests for data allow for changes in design to

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avoid costs. On the other hand, since little detailed design is complete, the effect on utilities might not be clear however, the utility companies are expected to develop firm cost estimates. The utility companies prefer to see more detailed design. The later decisions regarding relocations are made, the less time there is for effecting those changes and more likely the road project schedule will be compromised.

Alberta and Ontario reported that they record costs of damage to utilities due to working in the road. No other respondents reported keeping such records.

6.4.2 Communication and Coordination

All organizations reported sharing planning information with utility companies. Specific comments made are:

- *“We try our best to share our long term plans with the utility companies when they ask about specific roadways, however, our department seems reluctant to publish long term construction plans for our entire highway network”. (e.g. 5 year plan.) (Saskatchewan Highways and Infrastructure)*
- *“5 year road development program is on the web for anyone”. (Alberta Transportation, Ontario Ministry of Transportation)*
- *“Through Utility Coordination Committee meetings we share long term planning documents and current design schedule”. (City of Hamilton)*
- *“The local MTO area office conducts annual utility meetings with the various utility companies”. (Ontario Ministry of Transportation)*
- *“Two annual meetings (autumn and spring) scheduled by each of MTQ's 14 regional units”. (Ministère des Transports du Québec)*
- *“Transportation Services distributes their long term plans to all utility companies. Our Public Utilities Coordinating Committee includes a sub-committee devoted to co-ordination of capital works, mainly to have utility work completed ahead of our road program”. (City of Toronto)*
- *“On-going coordination meetings and exchange of information” (City of Surrey)*

To a large extent utility coordination by provinces appears to be done on a district basis. To the extent that this is true, there does not seem to be a mechanism to manage the global issues such as joint problem solving, development of standards and procedures, and development of new business processes. Another implication of coordination limited to the district basis is the likelihood that procedures and interpretation of standards will also vary across the regions.

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Coordination appears to be almost completely driven by projects rather than as part of an ongoing relationship amongst the parties. This approach means that the success of the coordination will very much depend on the skills and attitudes of those involved rather than on a more logical approach based on asset management or quality management processes.

Sixty percent of respondents reported that utility companies do share plans with the road authority. Some specific remarks are:

- *“For the most part the utility companies do not provide us with their as-built or installed plans, although in some cases some utilities will provide us with location plans at specific locations when we are re-constructing a roadway”. (Saskatchewan Highways and Infrastructure)*
- *“They try, but there is no formal capital submission process”. (City of Hamilton)*
- *Two annual meetings (autumn and spring) scheduled by each of MTQ's 14 regional units. (Ministère des Transports du Québec)*
- *“Yes and no. As per above, all companies submit their capital plans and they are all plotted on a master map. The issue is that many of the utility companies (mainly the telecoms) do not have capital plans since they are entirely driven by responding to customer requests”. (City of Toronto)*
- *“They submit to our Utility Coordinator for review and permits”. (City of Surrey)*

Two thirds of respondents reported participation on a utility coordinating committee. Some highlights are:

- *MTO (Head Office) meets with the major utility companies twice a year to discuss outstanding issues.*
- *MTQ takes part in the selection committee for projects to bury portions of the cable network.*
- *The Toronto Public Utilities Coordinating Committee website contains the terms of reference which outlines the mandate and format of the committee. www.tpucc.com*
- *Telus & BC Hydro design and construction representatives meet with the City's design and construction representatives, to coordinate and expedite relocations and installations.*

6.4.3 Land Acquisition

Saskatchewan and Alberta as well as Cities of Hamilton and Surrey reported that they consider utility needs when acquiring right-of-way. Saskatchewan and Alberta reported advising utility companies while City of Surrey and City of Hamilton reported that they would make a provision for utilities identified at the time. No one reported deeper coordination such as using one land agent and making one approach to the landowner. The following comment is from MTQ: “Under the terms of the Law on the Ministry for Transport, the MTQ cannot acquire goods (influences) intended for the use of private company.” Similarly, the Ontario Ministry of Transportation reported not having the authority to acquire additional land for utilities.

Alberta has designated specific corridors through Calgary and Edmonton where extra land has been protected for utilities alongside a highway. Three others responded positively that utilities were able to use the arterial rights-of-way.

6.4.4 Underground Utilities

In general, provinces leave the decision for placing utilities underground to the utility companies. A respondent from the Ontario Ministry of Transportation clarified that district offices may direct utilities to be placed underground for aesthetic or safety reasons. Ministère des Transports du Québec stated that utilities were placed underground if aerial utilities were not technically

A comment from the City of Toronto: “The decision is generally made by the utility companies. Typically, overhead remains overhead and underground remains underground. This is usually due to economic reasons. On some high profile projects, for reason of aesthetics, the City has entered into agreements with the utilities to relocate overhead plant to underground. This would be initiated by the City”.

A comment from the City of Surrey: “Council policy requires that all new services for new subdivisions are placed underground. For existing infrastructure, that is road widening project, a decision is made based on affordability”.

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Municipalities generally stated that the Council or local bylaws direct utilities underground in specified areas.

Only one organization reported not planning for expansion when locating or relocating utilities.

6.4.5. Management Systems

No organization reported use of a quality management system (QMS). The City of Toronto did not report using QMS but does have a system of distributing base maps to utilities and acquiring data on their facilities.

Four respondents indicated using an asset management system including Alberta, City of Hamilton, City of Toronto and City of Surrey.

6.5. Design and Construction

The respondents did not provide much detail on the schedule of utility relocations beyond the work of coordinating committees. One has the impression of a significant amount of negotiating between the contractor, the road authority and the utility. Most prefer to have the utility off site by the time the contractor begins work and many report significant delays due to the inability of the utility companies to provide a good date and to complete their work.

All, except one of respondents reported not including utility relocation work in the road contract. The City of Surrey stated that they may have the road contractor install conduit, manholes and junction boxes.

Most respondents (City of Surrey, City of Toronto, Alberta, Ontario, Quebec and New Brunswick) required detailed cost estimates prior to beginning relocation work. The others either did not require detailed cost estimate or did not answer. Some specific comments are:

- *“We do require ‘total value’ cost estimates. In very rare cases where disputes occur we may ask for a detailed cost estimate.” (Saskatchewan Highways and Infrastructure)*
- *“The utility companies are not providing MTO with enough information.” (Ministry of Transportation Ontario)*
- *“Since relocations are typically paid for under the Act, we ask for a detailed cost estimate ahead of time so we can budget appropriately.” (City of Toronto)*

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Almost all road authorities reported encountering delays and high costs caused by relocation of utilities. Some specific comments were:

- *“Depending on the complexity of the relocation and the availability of forces from the utility companies, the relocations can have a significant impact on our construction start dates. In these cases, we might look at co-ordinating the utility relocation during the actual road construction work. One of the biggest problems on recent projects is when more than one company has plant mounted on a single pole line and the major owner (usually Hydro) puts in new poles and moves their plant but the third-party attachments take longer to move their plant and holds up the work”. (City of Toronto)*
- *“In general no. In a few rare cases this may an issue when we don't give the utility companies enough lead time.” (Saskatchewan Highways and Infrastructure)*
- *“From time to time, extra costs are charged by the contractors and after, transferred to the utility.” (Ministère des Transports du Québec)*
- *“This is a major problem.” (Ontario Ministry of Transportation)*
- *“We have experienced significant delays in completing projects due to the length of time taken by utility companies in carrying out their relocations.” (City of Surrey)*
- *“Lack of scheduling by utility companies can impact the work on construction sites. It could affect the completion of the project or delay the work which could result in a claim for delay by the contractor.” (New Brunswick Department of Transportation)*
- *“In one case we paid a claim by a contractor because utilities were not removed on time.” (Nova Scotia Transportation and Infrastructure Renewal)*

Four organizations (Alberta, New Brunswick, Toronto, and Surrey) reported conducting audit checks on invoices received from utility companies, while others did not indicate so.

Alberta and Nova Scotia reported not inspecting utility installations. New Brunswick reported that they “inspect the installation of concrete encased ductwork in the road or the placement of ductwork on structures but not the actual installation of the poles...” City of Hamilton inspects work undertaken by the utility companies. The City of Toronto clarified:

“The City has a dedicated inspector for each of the four City districts; additionally, spot-checks are performed by our capital works construction inspectors if they drive by utility work. There are tens of thousands of utility permits issued every year, so not every single one can be inspected, however the utility companies are required to notify the City dispatch when they start work and our inspectors ensure that they inspect all sites that are particularly complex and/or have a major impact on traffic and the residents”.

There was a marked difference in the policy for as-built drawings. Saskatchewan, Ontario, Quebec and Nova Scotia as well as the City of Hamilton obtain them at the discretion of their staff, while Alberta, and Cities of Toronto and Surrey obtain drawings for every project. Nova Scotia does not obtain as-built drawings.

6.6 Working in the Right-of-Way

All respondents require permits for ground disturbance in the right-of-way.

Only Province of Alberta requires certification for workers excavating in the right-of-way. Five agencies reported that they have no training requirements and three did not respond.

6.7. Other suggestions

One suggestion was submitted for a change in legislation that would give municipalities greater powers to manage the occupation of the right-of-way by utilities.

7. CONCLUSIONS

Although the response rate to the survey was relatively low and there was a lack of detail in some areas, the information collected and reviewed provided some insight into the practices for managing utilities within public rights-of-way in Canada. There is a general sense amongst road authorities across the country that this topic is of concern and requires additional investigation to determine what steps can be taken to improve the efficiency of common practices as well as provide some consistency in key areas.

The review of literature and practice from elsewhere shows two trends:

- There are new, collaborative approaches to managing utilities within the right-of-way emerging in the Province of Québec, Europe and New Zealand. Features of these approaches include a high level of commitment from senior management and cooperation in the development of policies, standards and procedures. In Canada, the *Common Ground Alliance* is growing and focusing its effort on the avoidance of damage to underground utilities. Most road authorities are developing master agreements with utility companies to manage common concerns more efficiently.
- There is also an emergence of more systematic approaches such as asset management and quality management systems. An important component of such efforts is the

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management of data exemplified by the adoption of data standards such as CI/ASCE 38-02.

The study found a high level of consistency in the concerns expressed by practitioners. Leading among these were:

- the cost and delay associated with utility relocation,
- the inconvenience and loss of road integrity due to utility installation below pavement and
- problems with the quality of data on utility infrastructure.

There was also consistency in the legislative and policy framework across the country.

All road authorities have comparable procedures which permit work in the right-of-way (Alberta alone has established standards for workers performing ground disturbance). Differences were found in the procedures for coordinating work with some authorities having a utility coordinator or district level utility coordinating committee focused on road or utility construction work. Others, generally larger provinces or municipalities, have a more deterministic coordination structure. Differences were also found in the sophistication of drawing and data management. Another area where marked differences were found was in compensation for use of the right-of-way and for relocations. Most federally chartered utility companies receive compensation for relocations while others may or may not be compensated depending on the authority. Compensation was also an issue because of the time and effort spent on negotiation.

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Appendix A – Survey Instrument

MANAGING UTILITIES IN THE RIGHT-OF-WAY

The Transportation Association of Canada is conducting research on the best means of accommodating utilities within road rights-of-way. This work will lead to a sharing of experience and eventually to guidelines for best practices. Your help in this initial data collection phase is greatly appreciated. We would very much appreciate your submission by August 7, 2007. If you have questions of clarification about the survey please contact Jim Hemstock at 250-388-9877 or at jhemstock@blvdgroup.ca or Lawrence Arcand at 905-668-8822 or larcand@tsh.ca. For questions about TAC or the research program contact Sandra Majkic at 613-736-1350 ext.228 or SMajkic@tac-atc.ca.

Instructions

The survey is five pages with each page dealing with a specific area. You may wish to have different individuals complete different parts of the survey. After completing each page click 'Submit This Page'. Your response will come to us via e-mail. Once you have submitted each page, click on 'Proceed to Next Page' to continue. You can submit as often as you like and there is no limit on the number of submitters or submissions from your organization.

Contacts

1. What is the name of your organization?

Contact information

2. Please provide contact information:

For questions on compensation, policy or legislation

Name _____ Position _____

Phone _____ e-mail _____

For questions on design, planning and construction

Name _____ Position _____

Phone _____ e-mail _____

For questions on operations and work in the right-of-way

Name _____ Position _____

Phone _____ e-mail _____

Relationships

3. How would you characterize your relationship with utility companies?

Cooperative Select Efficient Select Professional Select

Uncoordinated Select Confrontational Select Bureaucratic Select

(Choices are Very True, Usually True, Sometimes True and Never True.)

4. What are the most important issues concerning utilities in the road right-of-way (these issues may vary by utility and any input would be appreciated)?

Policy, Legislation, Compensation

5. What legislation is relevant in your work with Utility Companies? (i.e. Public Service Works on Highways Act, Canada Transportation Act, etc)

Please describe _____

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6. Has there been any litigation of issues concerning the right-of-way between your organization and a utility?

Yes No

Please describe the nature of the dispute and the court decision.

7. Do you have a policy for utilities occupying a road right-of-way (for example, a policy for utilities along freeways, a policy for crossings, a policy for vegetation management, etc)?

Yes No

If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

8. Is your organization a member of *The Common Ground Alliance*?

Yes No

9. Does your organization participate in a *First Call* (or *Call Before You Dig*) system?

Yes No

10. Have you signed Master Operating Agreements with any utilities?

Yes No

If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

11. Does your organization charge utilities for occupying the right-of-way?

Hydro Yes No

Sewer, water Yes No

Natural Gas Yes No

Telephone Yes No

Fibre optics Yes No

Cell phone Yes No

Other Yes No

Please describe (rent, property tax, annual permit fees, etc) _____

12. Does your organization compensate utilities for relocations in the right-of-way?

Hydro Yes No

Sewer, water Yes No

Natural Gas Yes No

Telephone Yes No

Fibre optics Yes No

Cell phone Yes No

Other Yes No

Please describe _____

13. Do you have a specific policy for fibre optic cable?

Yes No

Please describe _____

14. Do you have a specific policy for cell phone towers?

Yes No

Please describe _____

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Planning, Standards, Data

15. Do you have a procedure manual or guidelines for utilities occupying a road right-of-way?

Yes No

If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

16. Do you have design standards for utilities occupying a road right-of-way?

Yes No

If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

17. Does your organization maintain utility records?

Yes No

18. Do you follow the CI/ASCE Standard 38-02 – Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (Subsurface Utility Engineering - SUE) - as a guide for your utility investigations during planning and design?

Yes No

19. Is your organization aware of the CSA Draft Seed document: S250-07 Mapping of Underground Utility Infrastructure?

Yes No

20. Does your organization record damage of utilities cause by work in the right-of-way?

Yes No

21. Do you share long term road plans with utility companies?

Yes No

Please describe _____

22. Do utilities share their plans with your organization?

Yes No

Please describe _____

23. Does your organization participate in a Utility Coordination Committee?

Yes No

Please describe the organization and mandate of the Committee. _____

24. Does your organization consider utilities when acquiring right-of-way (advising in advance, contacting landowners together, using one land agent, etc)?

Yes No

Please describe _____

25. Has your organization developed joint transportation-utility corridors?

Yes No

Please describe _____

26. How is a decision made to construct utilities underground rather than overhead?

Please describe _____

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27. Does your organization make provision for future expansion when accommodating utilities (mandating provision of extra conduit, joint use of poles, etc)?
Yes No

Design and Construction

28. Does your organization use a Quality Management System approach to utility issues related to design and construction?
Yes No
If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

29. Does your organization have an Asset Management system related to utility infrastructure?
Yes No

If yes:

a) Does it contain information only on your organizations utility assets?
Yes No
b) Does it contain information on other utilities within your ROW or property?
Yes No
c) What format/software are the records kept in? Select

30. At what point do you acquire data on the location of utilities? Select

31. In what form is the data supplied to the utilities?

32. In what form is data received from the utilities?

33. How is the schedule for relocation of utilities determined?

Please describe _____

34. Do you include utility relocation work in the road construction contract?
Yes No

Please describe _____

35. Do you require detailed cost estimates at the point of approval of a relocation?

Yes No
Please describe _____

36. Is your organization encountering problems where the costs and timing of road projects are significantly affected by the relocation of utilities?

Yes No

Please describe _____

37. Does your organization conduct audit checks on invoices received from utility companies?

Yes No

38. Does your organization inspect installation of utility facilities?

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Yes No

Please describe _____

39. When are as built drawings required? Select

Working in the Right-of-Way

40. Does your organization require a permit for utilities to work in the right-of-way?

Yes No

If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

Or describe _____

41. Does your organization require a permit for ground disturbance in the right-of-way?

Yes No

If so, can you include a web address? Or if it is not available online, please send a copy to jhemstock@blvdgroup.ca

Or describe _____

42. Does your organization require special training for workers excavating in the right-of-way?

Yes, we require training No

Yes, we require certification

General

Please provide your suggestions or comments that would be helpful in directing this research or in improving management of utilities in the right-of-way.

