A SURVEY OF UTILITY COORDINATION PRACTICES IN THE TORONTO AREA

HARUNA MONRI, UNIVERSITY OF TORONTO

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ABSTRACT

Due to the many uses and the resulting lack of space within a municipally owned right-of-way, utility companies are often required to accommodate requests to relocate their assets. These requests come from external agencies such as the City of Toronto, Ontario Ministry of Transportation, Metrolinx, as well as private developers, to name a few. Relocation requests can be difficult to coordinate and cause frequent project delays and cost overruns.

While it is important for the requesting agencies to clearly define the requirements of the relocation that is required, it is also important for utility companies to have a process that sufficiently meets the needs of the requesting agency. This report aims to identify best practices for processing relocation requests among utility companies from the Greater Toronto Area (GTA) by interviewing representatives from utility companies who are responsible for coordinating relocation projects.

Data collected from these interviews determined that the process that each company uses is generally a combination of common implementation methods, depending on the overall structure of the utility company. Despite these differences, successful utility companies ensure that they are able to determine the horizontal alignments to where they are relocating early in the coordination, and maintain a project timeline within one year. Utility companies that do not already incorporate these steps should strive to meet these goals. Requesting agencies must also take into consideration that coordinating relocation projects is not the primary line of business for utility companies, and that there are due processes that must be followed to execute a relocation project. As such, it is recommended that utility companies work with external agencies that frequently request relocation work, to devise a process that is mutually beneficial and agreeable.

TABLE OF CONTENTS

1 INTRODUCTION

A municipal right-of-way provides space for utility companies to distribute its services to its customers, through the use of both underground and at-grade space. As space within the municipal right-of-way is limited, it is inevitable that spatial conflicts will arise through the following scenarios:

1) The proposed work is set to occupy the same physical space within which a facility already exists; or,
2) There is not enough clearance between what is proposed and the existing infrastructure, creating a situation where safety cannot be ensured.

When such conflicts arise, the agency that is proposing the work that is causing the conflict has the option to change their design to eliminate the conflict, or request that the owner of the existing infrastructure relocate their assets elsewhere. While relocation projects can vary wildly in scope, the requesting agency's project cannot move forward unless the conflict has been resolved.

While it is important for the requesting agency to provide quality project management to mitigate these impacts, it is also in the interest of the utility companies to ensure that their coordination process for executing relocation projects is efficient internally and effectively meets the needs of the requesting agencies. This research aims to identify aspects of the process that contribute to the overall success by interviewing coordinators from a selection of utility companies within the Greater Toronto Area (GTA). As the interview questions were qualitative in nature, this analysis is more qualitative than it is quantitative, and thus, the measurement of success relies on the experience of the coordinators from the utility companies that were interviewed. Finally, the report concludes with recommendations for utility companies and requesting agencies on how to improve the facilitation of a relocation project.

2 EXISTING LITERATURE

While few academics have researched the process surrounding utility coordination and relocation work, many municipalities, transportation boards and associations, and state/provincial transportation bodies have. However, these studies research the problem from the standpoint of the municipality or the state/provincial government, in which the emphasis is on improving the efficiency from their perspective, and the utility companies are regarded as a problem that must be overcome for the success of the overall project.

2.1 Literature on Canadian Studies

Only one study was found where the focus was on the Canadian market. This study focused on all facets of the interaction between utility companies and the road authority, including the coordination and implementation phases (Transportation Association of Canada 2008). Some of the report’s key findings are:

- When a road authority and the utility companies take a collaborative approach to the coordination, as implemented in Quebec by developing a framework for managing the work, many of the issues that were commonly experienced were subsequently resolved (Transportation Association of Canada 2008)

- The Ontario Regional Common Ground Alliance found that excavation damages are a significant issue in Ontario, especially with the recent increase in construction and development activity. As such, it concluded that project owners should have a thorough and accurate understanding of the utility companies' infrastructure that exist within the project area. This can be improved by using a subsurface utility engineering (SUE) investigation, which is able to accurately map the location of subsurface utility infrastructure using non-destructive locating techniques (Transportation Association of Canada 2008)

- The report lists common issues with the relocations process, as summarized from their survey results and are as follows (Transportation Association of Canada 2008):

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

2.2 Literature on Studies in the U.S.

Departments of Transportation in various U.S. states as well as the Transportation Research Board have pursued studies relating to the coordination of utility work. While most of these reports focus on the perspective of the requesting agency, they discuss their impacts to the utility companies as well. Most studies are based on statewide surveys on municipalities and utility companies, and represent issues and concerns raised from both sides of the negotiating table.

The following table provides a summary of the issues that were most frequently mentioned in these reports, ordered from the highest incidence of mention to the lowest.

TABLE 1: SUMMARY OF ISSUES FROM LITERATURE

Issue	1*	2*	3*	4*	5*	6*	7*	8*	9*	SUM
Lack of Coordination		×	×	×	×	×	×		×	7
Poor quality of drawings and/or locates	×				×	×	×	×	×	6
Costs associated with delay to utility work	×				×	×	×			4
Road authorities do not do their due diligence of avoiding relocations						×	×	×	×	4
Lack of space in ROW						×	×	×	×	4
Turnaround time allowed for utility companies is too short	×			×	×				×	4
Utility companies are requested to create firm estimates from preliminary design of the overall project	×				×			×		3
Lack of funding and personnel		×				×			×	3
Lack of penalties for relocations not completed on time						×	×		×	3
Reliance on institutional knowledge					×		×			2

*Sources are numbered as follows:

1. (Transportation Association of Canada 2008)
2. (Venner 2009)
3. (Donovan 2011)
4. (Marti et al. 2002)
5. (Lees 2002)
6. (Utility Relocation Task Force 2004)
7. (Vidalis and Najafi 2002)
8. (Anspach 2010)
9. (Ellis et al. 2009)

While these studies were based on a variety of geographic areas, many of the issues that were encountered in one location were also encountered in another. In addition, it is interesting to note the different improvement methods that were suggested as part of these studies, reflecting the overall climate of the coordination process within the study area. These suggestions are summarized in Table 2.

TABLE 2: SUMMARY OF SUGGESTED IMPROVEMENT METHODS

Improvement Suggestions	1*	2*	3*	4*	5*	6*	7*	8*	9*	SUM
Provide ongoing coordination meetings for all projects		×	×	×	×		×	×	×	7
Involve planners from early on		×	×	×	×	×		×		6
Assign a Utility Coordinator for the overall project team		×	×			×		×	×	5
Use more accurate techniques for locating underground infrastructure					×	×	×	×	×	5
Complete utility works early on		×	×	×						3
Provide training for utility coordinators		×						×	×	3
Road authorities should not consider utility companies as secondary users of the public right-of-way			×		×				×	3
Improve accountability and define consequences for relocations not completed on time					×	×	×			3
Ensure coordination is done on an agency-wide basis, not project by project	×			×						2
Give utility companies a longer lead time				×				×		2

*Sources are numbered as follows:

1. (Transportation Association of Canada 2008)
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3 PROCEDURE

To survey relocation practices of utility companies across the City of Toronto, individual meetings were held with representatives of utility companies in various sectors. The representatives chosen from each company were those whom personally coordinated relocation projects. These interviews, which were approximately one hour in length, were held over a month-long period, starting from the middle of October, and ending in early November.

The questions asked during the interviews were developed to get a full understanding of how each utility company carries out their relocation work, starting from project intake until the end of construction. The questions addressed the internal processes within each company, as well as how they liaised externally with the requesting agency and other stakeholders. In addition, each interviewee was asked to identify common issues that they encountered during the relocations process, as well as any improvements they would like to see. The relative success of every company's process was evaluated based on the coordinator's opinion, rather than a hard measure, as all companies indicated that they do not measure the success of their company's relocation process. The list of questions can be found in Appendix A.

Upon completion of the interviews, the information was compiled to evaluate the success of different portions of each utility company's relocation process. Each variation of the steps within the process was evaluated based on the incremental increase in time and resources required to implement the initiative, and weighted against the benefits it would bring to the overall outcome of the relocation project. All of the data collected from the interviews were qualitative in nature, and in some situations, were the opinions that the coordinators had developed over their years of experience. In addition, the responses were based on what the coordinator considered as an "average" project, but may, by no means, reflect the statistical average.

4 DISCUSSION OF OUTCOMES

Data collected from the interviews indicate that no two utility companies operating within the GTA have identical processes. However, it was found that the process that each company uses is generally a combination of common implementation methods. To maintain the anonymity of the companies that were interviewed, each company was arbitrarily assigned a letter A, B, C, D, or E. These letter assignments remain consistent throughout the discussion to highlight the different combinations of processes that are being implemented by the utility companies.

4.1 Internal Processes of Utility Companies for Coordinating Relocation Projects

Each utility company must ensure that the process they have for coordinating relocation projects is compatible with the organizational structure of their company, as well as being able to interface with the requesting agencies. While each company has a unique process, there were similarities as well.

4.1.1 Receiving relocation requests

Utility companies responded that requests could be made in a variety of ways. In some cases, the agency carrying out the overall project will explicitly request a utility company to relocate, while in other cases, the requests are made indirectly. In other situations, the owner of the overall project may not be aware of the impacts it will cause on a utility company's assets, or whether a relocation is required at all. In such situations, the project owner may approach a utility company for a consultation. In rare situations, the project owner may not be aware of the many utility companies that operate in the area, and would only contact the major players. The larger utility companies may then inform the project owner to contact the smaller utility companies, or may contact the smaller utility companies themselves. Smaller utility companies feel that they are less likely to be contacted regarding potential relocation projects. Furthermore, every utility company has experienced situations where they are notified during construction of the overall project that their assets may require relocation. This situation is outside the scope of this project, and such discussion will be omitted.

In every case, the contact is made in writing and happens before construction for the overall project has started. While companies C, D, and E have formal means of receiving relocation requests, there were varying levels of how strictly this was enforced, with company D being the most strict. For all five (5) companies, the interviewee was unable to estimate the proportion of projects that were a request of another utility company versus that of a public sector agency, such as the City of Toronto, MTO, TTC, Metrolinx, Waterfront Toronto, etc. The consensus over the five (5) companies was that the number of relocation requests has been increasing in the past few years.

4.1.2 Coordinating and designing relocation requests

Once the utility company receives a relocation request, they coordinate and design the project to resolve the conflicts that were identified. To coordinate the projects, four (4) out of the five (5) utility companies have planners that liaise with the external agency. In general, a planner is an employee who is responsible for ensuring that the overall network for the utility company remains connected to its source and the reliability of service to any nearby service connections remains intact. These planners were all internal employees of the utility companies. Only one company mentioned that their internal designers are responsible for the coordination with the requesting agency. Designers are typically engineering technicians who receive information provided by the planner through the use of sketches or verbal descriptions of the proposed work, and are responsible for producing detailed CAD drawings, material specifications, and any permit applications required to complete a construction package. The critical work of determining the proposed alignment within the right-of-way may be the duty of the planner or the designer, depending on the company. Each company had between three (3) to six (6) coordinators (planners or designers as appropriate) available.

Two (2) of the five (5) companies (Companies A and B) do not have internal design staff and therefore contract out the design work to third party design firms. These firms can generally be brought on board to the project within a few weeks of the project initiation, and are able to complete their work quickly to meet the needs of the planner. The remaining three (3) companies have internal staff that complete designs, however, their role differs between the companies.

- For company C, the designer was responsible for the coordination and completes all of the necessary design work as part of his/her role
- For company D, the content of the design work is divided between the planner responsible for the coordination and a CAD technician, who can either be an internal or a third-party contract staff. The planner is responsible for determining final alignments, material specifications, and permit applications, while the CAD technician is only responsible for finalizing the design drawings using CAD software. Similar to the third party design firms, these technicians work closely with the planner, are brought on board within one week, and can complete the necessary work as soon as the planner has finalized negotiations.
- Company E has internal design staff that does not work as closely with the planner as with all of the other utility companies. However, like the other utility companies, this designer is responsible for determining final alignments, material specification, permit applications, and creating construction packages.

While companies A, B, and C follow the same process for all projects, companies D and E have a separate process for large or complex projects. In both situations, the distinction between a project that follows the process outlined above and a major project is qualitative in nature, and is made on a case-by-case basis, generally based on factors including, but not limited to cost, timeline requirements, the amount of infrastructure being relocated, and the complexity of the coordination required.

4.1.3 Points of contact between the requesting agency and the utility

For companies B, C, and D, whether the coordinator is a designer or a planner, s/he is the single point of contact between the utility and the requesting agency until the design of the relocation is complete. Their visibility of the project within their company reflects this as well. However, with companies A and E, the planners are not as involved with the designers as other utility companies are, and thus the person responsible for the design work will liaise with the external agency if necessary, while the original planner will receive updates about the project from the design staff. However, if complications arise, the planner will be contacted again to resolve the issue.

In all situations, once the project enters construction, the construction lead for the utility company is responsible for liaising with the external agency, and the original coordinators will only be involved as needed to resolve complications.

4.1.4 Role of coordinators, designers, and construction crews within the company

The coordinators for companies A, B and D are not only responsible for relocations work, but also work as planners for internal capital improvement projects. However, the coordinators for companies C and E were not responsible for any work pertaining to internal capital improvement projects.

Aside from company C where the coordinator fully designs relocation projects, the staff responsible for design in all of the other utility companies also works on designing internal

capital improvement projects. This is true even for companies A and B in that the third party design firms regularly design internally initiated capital improvement projects as well.

Regardless of whether the coordinators took on projects for both internal projects and external requests, all but one (1) company has had a shortage of resources at one point or another. Generally, the shortage of resources is due to a conflict of priorities between the internal capital improvement projects and the external relocation requests. This somewhat reflects the results of the literature review in that only a small portion of studies have found the lack of personnel to be an issue in the relocations process.

4.1.5 Relocation timelines

All five (5) utility companies agreed that the timelines required for a relocation project depend heavily on the request and the scale of the request. Most interviewees provided their best estimate of how long a relocation request takes on average to process. This ranged between six (6) and 18 months. However, all were cautious to warn that this depended on a variety of factors, including, but not limited to:

- The length of time it takes for the requesting agency to finalize their design
- The length of time required to receive municipal consent approval and a construction permit
- Flexibility and cooperation of the coordinator of the requesting agency
- The scale and scope of the relocation work required

The first three are considered external factors and will be discussed next.

To avoid delays from the utility companies' internal processes, all companies except for one (1) are able to have a design started within a few weeks. This ensures that as soon as the coordination requirements are finalized between the requesting agency and the utility company, the relocation plans are ready to be submitted for approval and permits as soon as possible. In addition, this allows other utility companies that are relocating their assets, to design their plans to accommodate other utility companies in a timely manner.

While all five (5) utility companies endeavor to meet the deadline requested, they were unable to tell whether they amply satisfied the expectations of the requesting agency. In addition, there were mixed reactions as to whether the timelines requested for relocation projects were too short or not, as the root issue commonly cited was the fluctuating number of relocation requests that each company was processing at a specific point in time, as opposed to the timelines requested. This view of the utility companies contrasts to the views of the requesting agencies found in the literature review, as reports have cited that utility companies found the requested turnaround times to be too short, and causes delays to the project of the requesting agency.

4.2 External Influences to Coordinating Relocation Projects

While having a strong internal process for coordinating relocation projects is vital to success, there are also factors external to the utility company that affect relocation processes. While the

utility company is unable to control many of these factors, this discussion is intended to provide suggestions to the requesting agency to improve project success.

4.2.1 External agency's understanding of relocations process

All of the utility companies that were interviewed agreed that the coordination of relocation projects would be improved if the external agency requesting the relocation better understood the utility companies' processes for executing relocation work. While most utility companies agreed that they have built rapport with employees of the agencies that they worked with regularly, the bulk of the issues arise when utility companies are working with third-party consultants of the agencies requesting the relocations, as they have less experience. This is similarly reflected in the literature in that both parties involved in the coordination consider the lack of coordination as well as the reliance on institutional knowledge as a significant negative factor in the coordination process.

To improve this situation, many utility companies have found that when a project owner has a designated utility coordinator, the coordination will often run smoother. This is because the utility coordinator is experienced in working with utility companies, and is able to voice their concerns proactively to the project manager of the requesting agency, as s/he is a well-integrated member of the project team, as opposed to simply being an external stakeholder.

Although utility companies generally appreciate being contacted early about a potential relocation project, it is not helpful if the project owner continuously changes the design of the overall project after engaging the utility. Because the utility company is relocating their assets to resolve conflicts with the overarching project, every time the project owner changes their design, the utility company must review the changes and possibly redesign their own work. This results in using unnecessary design time, which further increases the costs incurred by the utility company.

It is these situations where projects are most likely to be delayed as construction approvals must happen after all of these design changes are in place. This tends to frustrate project owners, as the utility company is unable to start construction, even with the long lead-time given. This situation is especially pronounced in design-build situations where the advantage for the project constructor is supposed to be in that they are able to transition smoothly from the design to construction phases, but are interrupted by the relocation works.

Furthermore, many of the utility companies noted that project owners tend to do what is best for the owner's project without taking into consideration the burden on the utility companies, especially when the project owner is not required to reimburse the utility company for relocating. This results in situations where utility companies may undertake extensive relocations while a small change on the part of the project owner could have eliminated the need to relocate entirely. This sentiment is similarly reflected in the literature review where road authorities do not do their due diligence in avoiding relocations, and have suggested that they consider utility companies as more than a secondary user of the public right-of-way.

In addition, the utility companies all agreed that when the project owner performs a SUE investigation, they should fully investigate which utility companies operate in the area. Because the detailed study identifies what actually exists in the field as opposed to what each utility company's records show to exist, this step also mitigates unexpected situations during future phases. However, interviewees cautioned that it is likely not the SUE investigation itself that helps resolve these issues, but that project owners who are willing to make this added investment are more likely to coordinate positively with utility companies. While reports in the literature have also suggested the use of more accurate techniques for locating utility infrastructure, the Canadian study has also noted the inability of utility companies to find the exact location of their infrastructure as a common issue (Transportation Association of Canada 2008). In this statement, it is interesting to note that the municipalities participating in the study find it to be the responsibility of the utility companies to determine exact locations, while the utility companies that were interviewed see this as the responsibility of the requesting agency.

4.2.2 Timelines of external stakeholders

Aside from the requesting agency and the utility company whose assets are to be relocated, there are numerous other stakeholders in the relocation process that can impact the timelines of project delivery. In most cases, the approval of these stakeholders is required to proceed with construction. These stakeholders include but are not limited to:

- Member companies of the Toronto Public Utility Coordination Committee (TPUCC): Member companies of the TPUCC have 21 calendar days to respond to a drawing circulation, although this timeline is a recommendation, and is not mandated. As such, delayed responses from other utility companies will result in delays to the relocation work
- City of Toronto Transportation Services: Once all of the sign-offs from the various entities have been returned, the relocating utility company must submit an application for a permit to construct within the City of Toronto right-of-way. As this application requires the sign-offs from TPUCC member companies, this must be submitted *after* the circulation process, and cannot be completed concurrently as a means to shorten timelines (City of Toronto 2012).
- Ministry of Labour: The Ontario Ministry of Labour must approve a construction registration form before construction can begin, to ensure the health and safety of the workers and the public (Government of Ontario 1991)

The accumulated time required for each of these phases and other agencies to complete their review could easily add several months to the timeline of the relocation project. This is also a likely factor as to why utility relocation work frequently delays the construction of the overall project, as reported by the Transportation Association of Canada (Transportation Association of Canada 2008)

4.2.3 Costs and financial timelines

City of Toronto's capital budget policy states: "projects that are funded from the 'Capital from Current Funding' must be scheduled for completion within the budget year for which it is

approved" (City of Toronto 2014). This means that there are only 12 months between when the funding for a project has been approved and the completion of the construction. This can cause problems for utility companies in two ways.

- If the City of Toronto only notifies the utility company to relocate after the funding has been approved, then the utility company is given very short notice to coordinate, design, and construct their relocation project. In addition, this relocation must be completed far enough in advance that the City contractor is able to complete their overall work within the same 12-month timeframe
- If the City of Toronto contacts a utility company before the budget is passed in anticipation of the approval, then the utility company would have to undertake a project with the possibility that it would not materialize. Most utility companies are unwilling to take on relocation projects that pose a financial risk

Aside from the funding timelines, costs for relocating infrastructure are not covered. Many utility companies have mentioned that they would like to see at least partial compensation for the cost to relocate as they are undertaking the construction for the benefit of the project owner. In addition, this would provide incentive for the requesting agency to devise strategies that mitigate the amount of relocation required.

In contrast to this view from the utility companies, the requesting agencies surveyed in the literature find the cost of delay due to relocations work a common issue, and have also noted that utility companies lack penalties for not completing relocation projects on time. As can be expected, this finding is consistent with the mutual objective of minimizing cost responsibilities for the utility works.

5 CONCLUSIONS

There is no one method for utility companies to process relocation requests that works well for all companies. Rather, each company should use a specific method that is compatible with their overall organizational structure, while still being able to provide the information being requested by the requesting agency. Processes that have facilitated this objective for utility companies within the GTA include, but are not limited to:

- Ensuring that all utility companies receive notice of an impending relocation project with ample lead time. While this is mostly the responsibility of the requesting agency, the process for reaching out to companies should be clear;
- Allowing utility coordinators to engage designers within a short timeframe, preferably within one (1) month, or being able to complete enough of the design themselves. The most crucial part of any company's relocation work is the design as it will influence the work being performed by other utility companies in the area. As such, delaying the production of proposed horizontal alignments for the relocated infrastructure not only delays the utility company in question, but the overall project as well;
- Accounting for the possibility of resource shortages in all phases of the process. While this is not easily resolved, both the utility company and the requesting agency must

approach the discussion in a positive manner, but should also develop a long-term solution as it is likely to recur; and,
- Ensuring that the process for relocating infrastructure can, in most cases, be undertaken within one (1) year. While this may not be feasible for relocation projects involving a large scope, smaller projects should be completed within this timeframe to remain in line with the City of Toronto's budget cycles.

However, the coordination of relocation projects also depends heavily on the attitude of the requesting agency. Utility companies often find that requesting agency to fail to consider:

- That coordinating relocation projects is not the primary line of business for utility companies, and that there are due processes that must be followed to execute a relocation project;
- The time required for external stakeholders and processes outside of the utility company's control such as the time required to acquire the necessary permits; and,
- That the cost of relocating infrastructure can amount to a significant sum, and while utility companies are generally obliged by law to relocate when requested at their own expense, they would appreciate the consideration of cost mitigation techniques or remuneration.

It is clear that coordination for relocation projects between two agencies can only be improved if both sides of the table approach the issue in a positive light. In addition, the current climate of utility coordination within the City of Toronto could benefit from both short term and long term improvement strategies.

6 RECOMMENDATIONS

For both the utility companies and requesting agencies, improving the coordination of relocation requests begins by refining the understanding of each other’s project requirements and timelines. While both sides will have its due processes to follow, it is equally important to ensure that these processes can interface smoothly and adequately meet each company’s requirements.

6.1 Recommendations for Utility Companies

Utility companies should work proactively with requesting agencies that frequently request relocation work, by developing a relocation process that takes both the utility company and the requesting agency as inputs. Understanding what the requesting agency is aiming to achieve at each stage will facilitate the utility company's understanding of what is being requested, and would ensure that the requesting agency is receiving useful information relating to the project. In implementing this recommendation, utility companies would be able to maintain their current process for relocating infrastructure, and would not affect the roles or operations of other teams within the company. However, it is possible that changes to the current process would arise as a result of the discussion for coordinating a mutually beneficial relocations process with the requesting agency.

Utility companies should also ensure that the design of the proposed relocation work can be produced in a timely manner. Other utility companies that are relocating their infrastructure within the same project area would be required to design their relocation plans in a way that accommodates all users of the public right-of-way, and thus, would be negatively affected if one utility company is unable to produce a design within a similar timeline to the other utility companies. However, the utility companies must also ensure that resources are not being spent unnecessarily by entertaining frequent design changes to the overall project.

6.2 Recommendations for the Requesting Agency

The success of a utility relocation project can also be heavily influenced by the attitude of the requesting agencies. Many utility companies noted that utility coordinators have proven to be a useful resource for project managers as they are best suited for balancing the interests of the overall project with the utility stakeholders. In addition, they are able to significantly influence the design decisions made by the overall project manager in a stronger manner than the utility companies can themselves. Many utility companies have had positive experiences when a project has a designated utility coordinator and encourages project teams to incorporate them in as many projects as they can afford.

Finally, utility companies can be burdened by the financial responsibility associated with relocations work. It is in such situations where utility companies feel that the requesting agency should further their due diligence of mitigating relocation work. Although there are no direct financial benefits to a requesting agency that is not responsible for covering relocations costs, it will reduce the risk of schedule overruns due to delayed utility work, and minimize the amount of coordination required on a project.

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APPENDIX A: INTERVIEW QUESTIONS

PROCESSING RELOCATION REQUESTS:

1. In the ideal case, how would a relocation request be processed within your company from receiving the request to the finish of construction
    a. Who receives the request
    b. Who designs the relocations
    c. Who does the construction
2. How long does the relocations process generally take
    a. In general, are you able to finish relocation work within the timeframe given to the requesting agency?
3. Does the scope or scale of the relocation request change the process? If so, how?
4. Are there conflicting priorities between capital work and relocations work from a resource perspective
5. Is resource availability an issue?
6. Are there regional divisions for team members?

CONTENT OF RELOCATION WORK:

7. Is relocation work mostly the equipment, or are there civil structures as well
8. Have you found it more convenient to be told where to relocate to, as opposed to finding a solution from the plans received
9. How much visibility do you have throughout the process?
10. In general, how well do you think you satisfy the requesting agency's needs
11. What percentage of your relocation requests are from other utilities as opposed to agencies that are not utilities (i.e. City of Toronto, MTO, Metrolinx, etc.)?
12. For planners: when you are planning the network, would you be able to design the final alignments?
13. How comfortable is your company in doing non-standard designs?

STRUCTURE OF UTILITY COMPANY:

14. How many people work on relocation requests within your company?
15. Is there a division between people who do the coordination and the designing?
16. What are the titles of the people within the company?
17. Is there a single point of contact with your company, or do other people along the way also contact the requesting agency?

PROBLEMS ENCOUNTERED WITH RELOCATION PROJECTS:

18. In your opinion, what are some of the biggest problems with coordinating relocation requests?

19. Prompt these problems if unmentioned:
    a. Lack of coordination for projects
    b. Quality of drawings from requesting agency or their consultant
    c. Do requesting agencies do their due diligence of avoiding relocations if possible
    d. Who do you consider is responsible for performing locates of utilities?
    e. Have projects where the requesting agency used SUE resulted in less unforeseen situations?

POSSIBLE IMPROVEMENT STRATEGIES:

20. What are some improvements to the coordination process that you would like to see
21. Prompt these questions if unmentioned:
    a. In your experience, how beneficial has it been to involve planners from earlier on
    b. Would it be beneficial to have ongoing meetings for each project
    c. Should project owners be providing detailed results of UG investigations or is it up to each utility

GENERAL QUESTIONS:

22. Do you feel that there is a gap of expectations between coordinators from the requesting agency and the utilities
23. Do you feel that your company generally satisfies the customer's requests well?
24. Does your company measure the "success" of processing relocation requests? If so, how?
25. Have you ever turned down a request? Do you convince the agency that it is not a good idea?