

## UTILITY COORDINATION ON HIGHWAY PROJECTS

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### ABSTRACT

The Highway Department is working in a very speedy and vastly throughout the country which is a reason for very improved highways facilities and also causes utility conflicts. Utility conflicts caused within various highway construction projects can be resolved by proper utility risk management, professional judgments, and expert opinions. The term which justifies utility conflict management is Utility Coordination.

**Keywords:** *Highway departments, Project, transportation, traveling, Utility Coordination.*

### INTRODUCTION

Utility Coordination refers to the active effort to communicate, share information, and interact productively with all applicable stakeholders regarding the utility involvement, adjustment, and relocation during all phases (planning, design, construction, operation, and maintenance)

of the development and delivery of a transportation project<sup>1</sup>.

Within transportation, utility coordination encompasses the management, communication, and facilitation of avoidance, minimization, or relocation of utility facilities to mitigate impacts between utility facilities and highway projects. Utility coordination is ongoing throughout

the design and delivery of a project, and best practices are used to make sure it occurs efficiently<sup>2</sup>.

Common focal areas of utility coordination include:

- Communication
- Identification
- Minimizing utility and transportation project impact
- Determining and initiating relocation

Utility coordination can significantly affect timelines, budgets, risks, and stress associated with the delivery of a transportation project<sup>3</sup>. Due to a lack of uniform utility coordination terminology and process standardization across and within Highway Departments, utility coordination has become a very broad and ambiguous term. Utility coordination entails agreements, estimates, risk identification and management, reimbursements, and all other terms associated with these interactions. In its most effective approach,

utility coordination minimizes impacts on both the transportation project and utility facilities

## **RESEARCH METHODOLOGY**

This document presents that Transportation agencies will be able to use risk assessment to more accurately communicate and coordinate utility mitigation and relocation efforts on highway projects. This paper focuses on the most critical dimensions of utility-related risk because of their significant impact on project delivery costs and schedules. The purpose of this study was to propose process changes or present best practices for streamlining and expediting utility relocations. Specifically, it targets risks attributable to utility facility locations, coordination and relocation schedules, and utility relocation costs<sup>4</sup>.

### **Potential ways to improve the process include:**

- 1) Utility conflicts should be identified in the early stages and should be involved in the designing stage.

- 2) Subsurface Utility Engineering to promote utility avoidance should be utilized more.
  - 3) Latest software for utility relocation should be used.
  - 4) Offering utility relocation design and construction services via statewide contracts.
  - 5) Establishing term utility agreements.
  - 6) Clearing right-of-way prior to utility relocations.
  - 7) Forming utility coordination councils.
  - 8) Exploring the four C's (communication, cooperation, collaboration, coordination).
  - 9) Use of advanced sensing technologies to improve the accuracy of locating existing utility lines.
- Process of planning and executing utility relocation
  - Cost estimation of utility relocation
  - Review utility relocation
  - Approaching the concerned authorities for the approval, recommendation, and cost estimation
  - Develop new and recommended revisions plan for improved utility relocation
  - Prepare final report and drawings
  - Signoff by both the highway department and utility department on the final report and estimates
  - Regularly coordinating with the relocation contractors and updating progress

### **Utility Coordination planning and tasks**

Various tasks or steps can be taken to insure proper coordination and avoidance of conflicts in highway projects<sup>5</sup>. Some of which are:

### **Subsurface utility engineering**

Subsurface Utility Engineering (SUE)<sup>6</sup> is an engineering process used to accurately identify the quality of subsurface utility information/knowledge needed to construct

highway plans, execute ROW acquisitions, and manage different aspects of projects. The concept of SUE is gaining popularity worldwide as a framework to mitigate costs associated with project redesign and construction delays and to avoid risk and liability that can result from damaged underground utilities SUE can be used to locate existing underground utilities and identify potential conflicts. SUE is defined as a branch of engineering practice that involves managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design. The SUE process consists of a work plan that includes various parts like the scope of work, project schedule, levels/quality of service vs. risk allocation and management, and desired delivery method<sup>7</sup>.

Utility-related problems are a leading cause of delays for highway construction projects which can be avoided by the use of SUE<sup>8</sup>.

## **RESULT AND DISCUSSION**

While utility relocation has not been a major concern in the educational aspect the increase in the technologies and advancement in the field of science have caused the DOT to give an overview on this matter. From the above-issued problems, the advancement of any project can be delayed and also be the reason for financial loss.

Hence, there are some recommendations for facing such issues, details of which are explained in this paper.

- Training regarding Risk assessment in utility relocation
- Utility characterization
- Subsurface utility engineering
- Work on utility relocation planning.
- Improve communication and coordination within concerned departments.

- Use of technologies to eliminate the issue in the design period.
- Modern use of survey equipment for accuracy.

## CONCLUSION

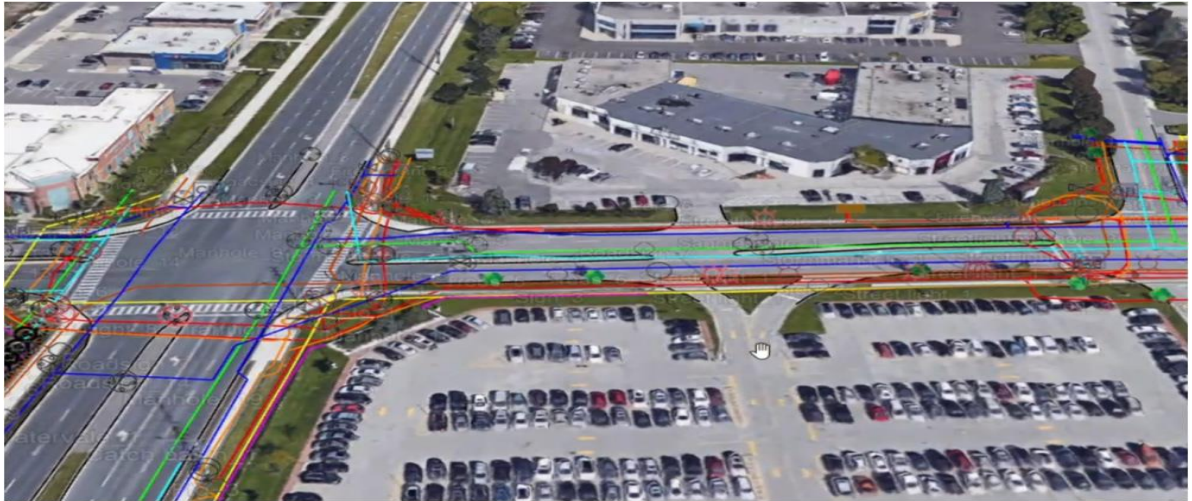
Utility coordination can suggestively disturb timelines, budgets, risks, and stress accompanying the delivery of a conveyance project. Utility-related glitches are a leading source of interruptions for highway construction projects that can be circumvented by the use of SUE. Therefore, several tasks could be taken to assure proper management and dodging of conflicts in highway projects.

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**Figure 1: Utility coordination mapping**