SHRP2 R15B:
Identifying and Managing Utility Conflicts

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What is Utility Coordination?

- Communication and coordination with utility owners, consultants, designers, other stakeholders
- Activities include:
  - Utility data collection planning and coordination
  - Coordination of utility conflict resolution process
  - Notifications, meeting scheduling
  - Utility work plan coordination
  - Permits and rights of entry
  - Utility agreement assemblies
  - Funding and escrow agreements

Utility Conflict Matrix (UCM)

The UCM provides concepts and procedures to identify and resolve utility conflicts allowing public agencies and utilities to improve the highway project development process. UCMs are designed to help agencies and utility companies identify the best and most cost-effective solutions. The SHRP2 UCM is also scalable to support a range of project sizes and conditions, in varying levels of project design..

UCM and SUE Benefits

The immediate benefits of the use of SUE and the implementation of the UCM process include proactive identification of both utility conflicts and alternative design solutions to minimize costs and foster greater communication among affected parties, both VTrans and Utility. Together, these improvements lead to more cost-effective processes with reduced risks.

Effective and Efficient Utility Conflict Management

A critical factor that contributes to inefficiencies in the project development and delivery process is the lack of adequate information about the location and other characteristics of utility facilities that might be affected by a transportation project. Inaccurate and/or incomplete utility data can result in a number of problems, including the following:

- Disruptions when utility installations are encountered unexpectedly during construction, either because there was no previous information about those installations or because their stated location on the construction plans was incorrect.
- Damage to utility installations, which can lead to disruptions in utility service, environmental damage, and increased risk to the health and safety of construction workers and the public.
- Delays that can extend the period of project development and/or delivery and increase total project costs through higher bids, change orders and/or damage or delay claims, redesign, and litigation by utility owners or agencies. These delays also result in frustration by the traveling public and negative public perception about the project.
- Unplanned environmental corrective actions.
- Unnecessary utility relocations and project delivery inefficiencies that occur because adequate information about existing utility facilities was not available to enable stakeholders to apply alternative utility conflict resolution strategies.

Subsurface Utility Engineering (SUE)

SUE is an engineering process that has evolved considerably over the past few decades. It has been used primarily by State transportation departments (DOTs), local highway agencies, utility companies, and highway design consultants. The SUE process combines civil engineering, surveying, and geophysics. It utilizes several technologies, including vacuum excavation and surface geophysics. Its use has become a routine requirement on highway projects in many states.

Purdue University's study *Cost Savings on Highway Projects Utilizing Subsurface Engineering*, was published and distributed in 2000. A total of 71 projects from Virginia, North Carolina, Texas, and Ohio had been studied. These projects involved a mix of interstate, arterial, and collector roads in urban, suburban, and rural settings. Two broad categories of savings emerged: quantifiable savings and qualitative savings. A total of $4.62 in avoided costs for every $1.00 spent on SUE was quantified. Qualitative savings were non-measurable, but it was clear to the researchers that those savings were also significant and were possibly many times more valuable than the quantifiable savings. It was concluded that SUE was a viable technologic practice that reduced project costs related to the risks associated with existing subsurface utilities and should be used in a systemic manner.