

Identifying and Managing Utility Conflicts

A comprehensive methodology and tools to identify, mitigate, and resolve utility conflicts during design

State departments of transportation (DOTs) and local agencies have developed many innovative approaches to minimize construction-related delays and congestion. Unfortunately, costly changes related to utilities continue to plague owner agencies, slowing construction and adding significantly to project costs. Utility conflicts identified at the end of the project design or during construction can cause damage to utilities which can lead to disruptions in utility services, environmental damage, and increased risk to the health and safety of workers and the public.

New tools developed through the second Strategic Highway Research Program (SHRP2) to document and manage utility conflict data will help alleviate many of these problems. Utility conflict management is an engineering process that includes coordination and data management, as well as the application of sound engineering principles to analyze and resolve utility conflicts effectively.

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The Solution

The SHRP2 product, *Identifying and Managing Utility Conflicts (R15B)*, provides **concepts and procedures to identify and resolve utility conflicts**

that public agencies and utilities can use to help improve the highway project development process. Two versions of a utility conflict matrix have been developed: a stand-alone, spreadsheet-based matrix (“UCM lite”), and an advanced UCM prototype that enables the management of conflicts in a database environment. These matrices enable users to organize, track, and manage the conflicts that can frequently arise when utility lines are located under highways. They are scalable, support a range of project sizes and conditions, and generate easily accessible information to help all parties make more informed decisions.

Additionally, a one-day training course has been developed to help agencies incorporate the UCM in existing business practices so that utility conflicts are identified throughout the design process. The tools feature a description of best practices from selected DOTs already using Utility Conflict Matrices as well as training

Reducing the impact of utility conflicts on transportation projects

FOCUS AREA:
Renewal (R15B)

Easy-to-use tools, including a stand-alone utility conflict matrix, a prototype of a data model/database, one-day training sessions for users, and a set of guidelines.

Save Lives

- Timely location of underground lines minimizes potential safety issues



Save Money

- Earlier and more effective coordination reduces costs from construction delays.



Save Time

- Standard procedures and easy-to-use tools save time in identifying and solving utility conflicts early and throughout the entire design process.



materials, a procedural manual, and implementation guidelines. This SHRP2 Solution includes data from surveys of DOTs and utility companies and offers successful practices and case studies that identify prevailing issues and proven solutions.

The Benefits

The immediate benefits of the UCM process are simplified and earlier identification of conflicts and solutions as well as effective management of utility conflicts throughout the project development and delivery process. The products provide a comprehensive, coordinated approach to working with utility providers during pre-construction design. Benefits of using UCM on roadway and bridge construction include:

- ▶ Fewer contractor change orders and delay claims;
- ▶ Reduced costs from construction delays;
- ▶ Improved project development procedures based on anticipating and resolving utility conflicts early in the process;
- ▶ Better communication among transportation agencies and utilities; and
- ▶ Reduced impacts on the public from construction-related delays;
- ▶ Improved worker and public safety from construction-related hazards.



Photo Credit: Chris Zolowski, Gas Technology Institute

Who is using these tools?

California, Delaware, Indiana, Iowa, Kentucky, Maryland, Michigan, Montana, New Hampshire, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, and Washington are currently using *Identifying and Managing Utility Conflicts* through the FHWA/AASHTO Implementation Assistance Program.

How can you learn more?

For more information, contact Ken Leuderalbert at FHWA, Ken.Leuderalbert@dot.gov, or Keith Platte at AASHTO, kplatte@aaashto.org. For helpful tools and information, visit: <http://shrp2.transportation.org/Pages/UtilityRelated-Products.aspx>. Updates on the SHRP2 program can be found at www.fhwa.dot.gov/GoSHRP2 or <http://SHRP2.transportation.org>. Both the standalone UCM and the data model and database are available at <http://www.trb.org/main/blurbs/166731.aspx> along with companion documentation that describes their structure and usability.

About SHRP2 Implementation



The second Strategic Highway Research Program is a national partnership of key transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners conduct research and deploy products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system.

Strategic Highway Research Program

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