

UTILITY CONFLICT MANAGEMENT (UCM)

INTRODUCTION

Utility conflict management is a comprehensive multi-stage process that involves the systematic identification and resolution of utility conflicts as part of the overall process to deliver transportation projects. UCM is one of five sets of interconnected processes that make up the utility process. The five processes are utility investigation, utility conflict management, utility coordination, utility design, and utility relocation management.

Potential for utility conflicts exist on most road construction projects, such as in the following situations:

- Interference between utility facilities and transportation design features (existing or proposed).
- Interference between utility facilities and transportation construction activities or phasing.
- Interference between planned utility facilities and existing utility facilities.
- Noncompliance of utility facilities with utility accommodation policies.
- Noncompliance of utility facilities with safety and accessibility regulations.

Detection of utility conflicts as early as possible facilitates the identification and implementation of optimum strategies to resolve those conflicts. The goal of these strategies is to avoid conflicts first, minimize impacts second, and, if neither of these two strategies is feasible (practically or economically), then consider relocating the utility facility.

A standalone UCM Utility Conflict List (UCL) template is available to manage utility conflicts. This tool is available at [\[insert hyperlink\]](#). The standalone UCL is a compact tool in Microsoft® Excel® format, which includes a main utility conflict table (Figure 1) and a supporting worksheet to analyze utility conflict resolution alternatives (Figure 2). This tool serves the dual purpose of (a) documenting utility conflicts and their resolution process and (b) providing a mechanism for exchange of information between a DOT and utility owners. The standard UCL sheets are designed to be printed on 11x17-inch paper.

UCM ACTIVITIES

Figure 3 provides a graphical representation of UCM activities for Point 25 projects.

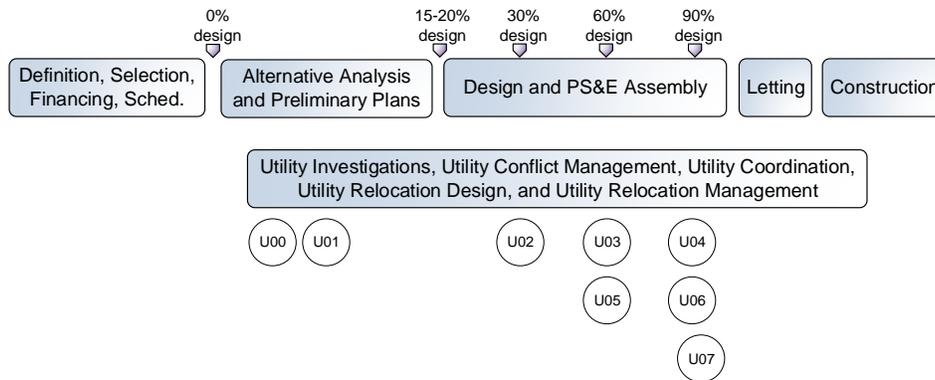


Figure 3. Utility Process within the Project Delivery Process (Traditional Design-Bid-Build Project Delivery Method).

U00- Preliminary Utility Review (five years prior to letting for large projects)

Definition:

Perform preliminary review of utilities in the project area and update Project Scheduling System (PSS) to reflect information obtained. [Notify utility of project concept, request facility location, enter basic information in Utility Coordination List.](#)

Action:

- Obtain draft concept when available.
- Conduct preliminary investigation based on existing records. This include:
 - Run Design Request System (DRS) (One Call) to determine extent of [probable](#) utilities in the project area and put the reports in the project folder [\(DUC\)](#).
 - [Look at electronic data such as Google Earth to look for overhead utilities that may not show up in the One Call records \(DUC\).](#)
 - [Enter the utilities determined to potentially be in the project area in PSS and answer basic questions, including local contact person \(DUC\).](#)
 - Send a copy of the draft concept to utilities [\(Central Office\)](#) and request basic information (provided [to DOT](#) through Web Portal) including plan sheets.
 - [Look at electronic data such as Google Earth to look for overhead utilities that may not show up in the One Call records.](#)
 - While requesting information from utility owners about existing records, request information about physical constraints and other major limitations that might affect the identification of potential utility conflict resolution strategies.

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~~Enter the utilities determined to potentially be in the project area in PSS and answer basic questions, including local contact person.~~

- Schedule a coordination meeting for major utilities within the project limits, i.e., pipelines, electric transmission lines, major fiber lines, and switching facilities, if warranted.
- Use the UCLM conflict list (Figure 1) and a composite utility plan to document possible utility conflict information.
- Put all information obtained in the project folders and update PSS (DUC).

Purpose:

Alert utilities to upcoming project, determine possible utility conflicts, utilities in the area. Involve the utilities at the earliest stage and begin to cooperatively avoid or minimize possible impacts. Gather utility information that is easily obtained with project limits and concept statement. Include information gathered in the utilities section of the concept, determine if major utilities might affect the project design, and begin collecting information in the UCL.

U01 Major Utility Impact Analysis (five years before letting)

Definition:

Perform ~~preliminary~~ early detailed information gathering for design to use to avoid or minimize conflicts ~~with avoidance of~~ major utilities. Major utilities include pipelines, electric transmission lines, major fiber lines, and switching facilities.

Action:

- Have utilities ~~Enter~~ detailed~~needed~~ information in the UCL and obtain plans from the major utilities to eliminate or minimize impacts before horizontal alignments are chosen.
- Conduct meetings with utilities as needed to determine best minimization ~~options~~methods ~~this~~ early in the process.
- Enter all information obtained in the project folders and update PSS and the UCL.
- Provide information collected to design.

Purpose:

Investigate utility location data so design has it early in the process. Discover possible costly utility impacts early enough ~~so~~ that design can make modifications to eliminate conflicts with the project through design considerations.

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U02 Utility Review – 30% Plans (three years prior to letting just after field review)

First Notification required by Iowa Administrative Code (IAC)

Definition:

Perform utility review when the design is at 30% ~~-(basic horizontal and cross sections developed).~~
Update PSS to reflect information obtained. Required by IAC for Point 25 projects. Utility has 90 days to reply with the status (affected, not affected etc.) per Iowa Administrative Code.

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Action:

- Send plans to utilities ([Central Office](#)).
- Request utilities to enter possible conflict locations in the UCL (station and offset).
- Enter general PSS information: No facilities, affected, not affected, abandoned, or no facilities.
- ~~Utility is requested to review plans and assess possible utility conflicts and corresponding impacts. The utility has the primary responsibility to determine the locations of possible conflicts. It is really the utility's responsibility to determine possible conflicts.~~ Assess utility conflict impacts including constructability challenges.
- Work with the designers to minimize conflicts through redesign if possible.
- Conduct a detailed utility investigation using appropriate geophysical methods at QLB or QLA if needed for the location and soil conditions of the project to produce a map of horizontal locations of below ground utility installations if warranted based on case specific parameters for major impacts, not common practice at this point.
- Analyze and review utility conflict resolution strategies, with an emphasis on practices that avoid or minimize utility conflicts first.
- Schedule a utility coordination meeting to discuss utility conflict resolution strategies. This can be meeting of one or all.
- Use the UCLM conflict list (Figure 1, Figure 2) and a composite utility plan to document and update utility conflict information, as well as potential utility conflict resolution strategies.
- For each potential conflict, determine whether the utility is in conflict or whether if QLB or QLA test hole data are needed to better determine or confirm the depth of utility facilities that may be in conflict.

Commented [QC1]: The way this sentence reads, it could be interpreted that only the utility company is responsible for determining utility conflicts. While utilities can play a critical role confirming whether a utility conflict is indeed a conflict (and if is a conflict, how it affects the utility), the responsibility for identifying conflicts should be a team effort, including the project manager, designers, utility coordinator, utility company, etc. My recommendation is to rephrase the sentence.

Commented [QC2]: I don't think if this text is really needed. I think it's unnecessary (a) because the "warrant" condition already covers it and (b) because if the agency decides in the future to increase the use of QLB, you would not need to modify the manual.

Purpose:

Determine possible utility conflicts, utilities in the area, and alert utilities to upcoming project. Gather utility information within project limits to begin the conflict resolution process. Begin the utility conflict resolution process, working through to resolution in cooperation with the utilities.

U03 Utility Review (First Plan Submittal) – 60% Plans (two years prior to letting)
Plan and profile design is complete and cross sections are detailed, the need line is established, and the new ROW (if needed) is determined.

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Definition:

Perform utility review when the design is at 60%. Send right of way and design files to utilities. Record information from utility companies (reply detailing if they are affected and a general their work plan if they are) within 90 days of DOT drawing submittal. Required for Point 25 projects by IAC.

Action:

- Send plans to utilities after the project need lines and new ROW limits are established ([Central Office](#)).
- Request utilities to provide plan sheets showing their facility locations if they have not yet done so.

~~Request input from utility owners to confirm utility conflict locations and assess utility conflict impacts including constructability challenges, avoid or minimize utility conflicts first.~~

~~Request utilities to enter possible conflict points and pertinent information in the UCL.~~
~~Assess utility conflicts and corresponding impacts. For each conflict location, determine whether the utility is in conflict or not.~~

- Schedule at least one utility coordination meeting to discuss utility conflict resolution strategies.
- [Begin to C](#)coordinate utility relocation design with utility owners if relocating a utility facility is the most effective conflict resolution strategy.
- Conduct detailed utility investigations at QLA at specific locations to gather accurate depth data and other critical facility information. Prepare utility relocation plans and utility relocation schedule for inclusion in utility agreements. The utility relocation plans and schedule should reflect UCM analysis and outcome. In addition to proposed utility relocation information, utility relocation plans should show utility excavation and fill zones, overhead spacing requirements, relocation phasing, and other field requirements. Utility relocation schedules should show activities and duration by phase or location of work, work to be completed prior to the utility relocation, access and coordination requirements with others, and advance notices to utility owners.
- Assemble composite utility plans showing all existing and relocated utility installations, and proposed utility conflict resolution strategies.

Purpose:

Confirm utility conflicts, continue examining [possible](#) design changes where possible, and proceed with utility relocation designs.

U04 Utility Review ([Final Plan Submittal](#))– 90% Plans (one year prior to letting)
[Final Plans sheets, including storm sewer and other specialty plans](#)

Definition:

Perform utility review when the design is at 90%. Send right of way and design files to utilities and note if revisions have been made. Record information from utility companies (reply detailing if they are affected and their work plan if they are). Utility companies have 60 days to reply after DOT drawing submittal. Required for Point 25 projects.

Action:

- Assess any remaining utility conflicts and corresponding impacts. At this point in the design phase, the number of new utility conflicts should be low if UCM practices have been followed systematically in previous stages.
- Request input from utility owners to confirm utility conflict locations, assess utility conflict impacts including constructability challenges, and discuss potential conflict resolution strategies.
- Analyze and review utility conflict resolution strategies, with an emphasis on practices that avoid or minimize utility conflicts first.

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- Coordinate utility relocation design with utility owners if relocating a utility facility is the most effective conflict resolution strategy.
- Use the UCM conflict list (Figure 1, Figure 2) and a composite utility plan to document and update utility conflict information, as well as potential utility conflict resolution strategies.
- Prepare utility relocation plans and utility relocation schedule for inclusion in utility agreements.
- Ask utilities to produce permit quality plans and submit permit applications.
- Assemble composite utility plans showing all existing and relocated utility installations, and proposed utility conflict resolution strategies.

Purpose:

Determine final plans and schedule for utilities that require relocation due to project.

U05 Utility Agreements (from two years prior to letting to construction phase)

Definition:

Action:

- Prepare and execute utility agreements using the utility relocation plans and schedules prepared as part of Activities U03 and U04.

Purpose:

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U06 Notice to Proceed (from one year prior to letting to construction phase)

Definition:

Give official notice to utilities to proceed with their relocations. Required for Point 25 projects. In practice, notices to proceed begin once the right of way is acquired.

Action:

- Give each utility notice to proceed at least 30 days before the utility is to move per its utility relocation plan.

Purpose:

Give utilities a notice to proceed with their relocations.

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U07 Utility Bid Attachment (3 months prior to letting)

Definition:

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Prepare and submit the Utility Bid Attachment (UBA) to the Office of Contracts. Required for Point 25 projects.

Action:

- ~~Assemble composite utility plans showing all existing and relocated utility installations, and proposed utility conflict resolution strategies.~~
- Prepare the UBA for inclusion in the bid package, showing the status of utility work completed prior to construction, utilities that are not in conflict with the project, and utility work that must be completed during construction, with expected completion dates.
- Include the UCL with resolved issues and unresolved items noted. The document is a living document that changes as construction proceeds.
- Submit the UBA to the Office of Contracts.

Purpose:

Give contractors useful information they can use to bid on jobs where utilities may impact their costs.