CONSTRUCTION MANAGEMENT AND TECHNOLOGY

Project Development and Utility Coordination as a Partnership

tech transfer summary

Partnerships with utility stakeholders can enhance alignment between the utility coordination and project development processes and ultimately reduce utility-related delays and cost overruns.

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RESEARCH PROJECT TITLE
Project Development and Utility Coordination as a Partnership

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Objectives

The primary purpose of this research was to develop and propose procedures for incorporating partnerships with utility stakeholders into the early stages of the project development process at the Iowa Department of Transportation (Iowa DOT), with the broader goal of streamlining workflows to reduce utility-related delays and cost overruns.

Background and Problem Statement

Utility relocation at the Iowa DOT is frequently cited as a cause for delayed construction and increased highway project costs. Current design and coordination methods tend to prioritize utility relocation over the fostering of early partnerships with utility companies during the design phase, which hinders more timely and effective resolutions.

In many states, it is a common practice to dictate relocations to utility companies late in the highway design process, which contributes significantly to utility-related delays. Inaccurate or unavailable utility location information, insufficient coordination among utility companies, strained relationships with stakeholders, supply chain issues for utility components, and other factors also contribute to delays and introduce inefficiencies into the project development process.

Research and practice suggest that introducing early coordination and conflict identification, better aligning the project development and utility coordination processes, fostering partnerships, and enhancing communication can help mitigate these delays and inefficiencies. Improved procedures—and, critically, stakeholder buy-in—are essential for acquiring and utilizing precise utility location and attribute information, identifying and managing conflicts early, and fostering partnerships with utility companies throughout the project development process.

Research Description

The research team reviewed state, national, and international studies as well as utility guidance from state transportation agencies to identify best practices that could be implemented at the Iowa DOT. The research team also assessed the Iowa DOT's current utility coordination approach through qualitative research methods, including a review of existing policies and guidance manuals as well as surveys of and discussions with Iowa DOT internal staff, Iowa DOT consultants, and utility company representatives.

Based on the collected data, the research team developed a series of recommendations aimed at fostering a more cohesive and collaborative approach and synchronizing project development with utility coordination efforts. The proposed recommendations were shaped by feedback from key Iowa DOT stakeholders, who understand current improvement needs and whose buy-in is essential for successful implementation in the future.

Findings and Recommendations

Overall Vision: The Partnership Approach

Based on an analysis of the Iowa DOT's current utility coordination process and the feedback from key stakeholders, the research team suggests that all stakeholders first embrace certain foundational principles to ensure successful implementation of the proposed recommendations. Achieving buy-in from all key stakeholders is essential for these principles to be accepted and to drive the necessary improvements to utility coordination efforts in Iowa DOT projects.

The research team formulated the proposed Partnership Approach to encompass eight core principles:

- **Positive and Collaborative Relationships:** Transform adversarial dynamics into collaborative business relationships centered around shared goals.
- **Avoid, Minimize, Accommodate when Feasible:** Address utility impacts through a prioritized approach: (1) attempt to avoid conflicts, (2) minimize conflicts when avoidance is not feasible, and (3) accommodate utilities, such as through relocation.
- **Reliable Utility Data for Better Project Decisions:** Collect the data necessary for reliable project delivery and integrate it into design decisions.
- **Timely and Proactive Engagement of Utility Coordination Stakeholders:** Engage stakeholders proactively and in a timely manner to increase coordination and collaboration opportunities.
- **Normalize Treating Utilities as Business Partners:** Encourage greater participation and responsiveness from utility owners by treating them as collaborative business partners rather than as obstacles.
- **Everyone Knows Where Everyone Goes:** Engage proactively with utility partners to discuss suggested alignments for relocations, particularly within the public right of way (ROW).
- **Reinforce the 3Cs: Communication, Coordination, and Cooperation:** Develop collaborative relationships among stakeholders by exchanging project and utility information and knowledge, aligning their actions and timelines, and working collectively to achieve common goals.
- **Shared Vision and Accountability for Success:** Foster a shared sense of purpose among utility coordination stakeholders.

Principles of the Partnership Approach

Implementing the Partnership Approach

The following recommendations support adoption of the Partnership Approach:

- Begin proactive utility coordination early in the project development process, as it is critical to refine the project scope, budget, and schedule with utility awareness.
- Integrate the utility coordination and environmental review and approval processes.
- Integrate the utility coordination and ROW engineering and acquisition processes, focusing on their alignment within the broader project development process.
- Understand utility location and attribute information through subsurface utility engineering (SUE) investigations, as determined appropriate to fit project needs.
- Implement utility conflict management (UCM) to systematically identify and resolve utility conflicts throughout the project life cycle.
- Manage and engage utility coordination stakeholders through identifying stakeholders and understanding their needs, prioritizing stakeholders, and planning engagement strategies.
- Conduct constructability reviews at multiple stages within the project development process, considering utility impacts. Approach the utility coordination process as a utility risk assessment and management practice throughout the project development process to mitigate the significant risks that utilities and their complex interactions with transportation infrastructure can pose to a project's scope, schedule, and budget.
- Adopt a value engineering (VE) approach to generate and evaluate alternatives, design variations, or methods to avoid unnecessary utility relocations and/or to minimize impacts on existing utilities when feasible.
- Develop and deliver training programs for Iowa DOT utility coordination stakeholders—including designers, project managers, and ROW staff—and utility company staff on various aspects of utility coordination.

Recommended Revisions to Iowa DOT Guidance Manuals and Policy

To support the recommendations summarized above, changes are recommended to various Iowa DOT guidance documents, including the *Project Development Process Manual: Guidelines for Implementing Iowa Department of Transportation's Project Development Process* (PDP guidance manual) and the Iowa Guide to Utility Coordination. These recommendations are summarized as follows:

- The terminology used for different events in the project development process should be made consistent across different documents.
- The principles that guide the project development process, outlined in Chapter 1 of the PDP guidance manual, should be reflected in utility coordination guidance documents, or the importance of considering utilities should be emphasized in the PDP guidance manual.
- Emphasizing the importance of considering utilities from the earliest stages of project development, similar to how environmental efforts are approached in the PDP guidance manual, can improve the utility coordination mindset within the Iowa DOT.
- In Chapter 5 of the PDP guidance manual, it would be beneficial to highlight that the participation of utility coordinators should be considered when assembling the project management team.
- The information presented in Chapter 5 of the PDP guidance manual should align with the descriptions of the roles and responsibilities of utility coordinators in other Iowa DOT documents.
- In Chapter 6 of the PDP guidance manual, it should be emphasized that considering utilities within the context-sensitive design approach can help avoid unnecessary utility conflicts.
- It would be beneficial to either include utility owners as stakeholders in Project Involvement Plans (PIPs) where applicable or reflect the stakeholder involvement approach presented in Chapter 7 of the PDP guidance manual in utility coordination guidance manuals and policies.

Implementation Readiness and Benefits

A thoroughly detailed outline of the recommendations developed in this research are outlined in the final report for this project.

Designers, utility coordinators, and project managers can begin implementing the recommendations in Iowa DOT projects immediately, while training programs and updates to the Iowa DOT's guidance manuals and policies can help implement the recommendations more systematically. The core principles of the Partnership Approach can help guide these implementation efforts and inform changes to the Iowa DOT's utility coordination culture.

By implementing these recommendations, the Iowa DOT can streamline its project development processes, reduce utility-related delays, and foster a more collaborative environment with utility stakeholders. This will ultimately benefit project managers, designers, utility coordinators, and the public by ensuring more efficient and cost-effective highway projects.