



BEST PRACTICES: COORDINATING WITH UNION PACIFIC IN ALTERNATIVE DELIVERY PROJECTS

PURPOSE

The purpose of this document is to recommend best practices for how public entities can achieve optimal results when coordinating with Union Pacific Railroad Company (UP) in implementing infrastructure projects that use alternative delivery methods. These best practices will help public entities achieve their desired objective of accelerating project delivery while recognizing UP's primary focus on safely moving freight with minimal impact to operational efficiency.

For public entities, alternative delivery methods – whether design-build or more complex public-private partnership structures – can confer many benefits, from transferring construction and operational risk to bringing needed infrastructure online earlier than would be possible using traditional project planning and delivery methods. With backlogs of infrastructure projects waiting for funding, public entities are increasingly turning to these alternative delivery methods to benefit their communities.

While public entities and their private sector developers are accustomed to working with a wide variety of government regulatory agencies involved in typical infrastructure projects, and generally have a thorough understanding of the lead times and processes involved in obtaining necessary approvals, fewer public entities – and even fewer developers – are experienced in working with railroads. Railroads are a universe unto themselves, with unique regulatory frameworks, processes, labor agreements and operational flashpoints.

This paper is intended as an introduction to how UP and public entities, and the developers engaged to deliver public infrastructure, can best work together to facilitate efficient project delivery in the context of alternative design and delivery models.

CONTEXT

The complexity of UP's size, assets, operations, hierarchy and processes is similar in many ways to that of federal agencies. Like other railroads, UP is organized to focus on its highest priority: moving freight as safely and efficiently as possible for its customers. It is not organized to rapidly scale up for matrixed project teams or to deploy resources on short notice. UP is deliberate in its planning, typically planning resources at least a year in advance, and is oriented primarily to safety and to protecting and preserving its right-of-way for rail operations. It has a robust hierarchy and, in keeping with its stewardship of significant infrastructure and its culture of "safety first," requires multiple approvals for project plans and other project components.

In addition, UP's labor agreements with its workforce require particular thoughtfulness regarding the lead time required for scheduling UP work crews. Work crews are typically scheduled up to a year in advance, and missing a project milestone can mean significant delays and additional costs if UP work crews need to be rescheduled. Effectively, this means UP often has significantly less flexibility in conducting its project-related work than is often the case for typical infrastructure construction work, where crews can be added, rescheduled or relocated as needed based on project demands.

RECOMMENDED APPROACHES

Planning

Although expedited delivery is one of the critical advantages of such alternative delivery methods as design-build, UP's turnaround times may not match private sector developer timelines and expectations. Often, project work can advance more efficiently when public entities and developers better understand UP's requirements and constraints, and approach UP as they would other regulatory bodies when setting realistic project milestones and planning the work. When speed of delivery is paramount, UP recommends public sector entities utilize the following approaches to enable UP to better support a quick delivery project model:

- Consider contracting with an engineering firm highly experienced with railroad work, to facilitate project communications and minimize design rework.
- Work with the developer to phase the work such that UP's work can be done in discrete phases, requiring less overall project coordination for UP's work.
- Include additional consulting resources in the budget to supplement UP's engineering staff with dedicated project staff for the duration of the project.
- Include a UP-specific contingency to reflect UP's higher costs and more complex work components, similar to the approach taken for any other complicated project with similar opportunities for unknown issues and delays (e.g., environmental challenges).

In UP's experience, public entities that understand UP's culture and work environment and deploy the following approaches will generally experience the highest level of certainty regarding project costs and timely execution:

- Avoid work within UP's right-of-way to the greatest extent feasible, thereby eliminating a significant amount of coordination, expense and elapsed work time.
- Understand that before UP approves any individual project component, it requires complete plans for any work affecting the railroad, including detailed mapping that reflects the planned sequencing of work and how the sequencing affects UP's tracks by milepost.
- Fully design and obtain UP's approval of any track plans (whether for temporary or permanent changes) before the public entity enters into a contract with a project developer to provide the developer with the most accurate scope and cost for the rail portion of the project and to reduce the need for costly changes and delays once the project is underway.
- Approach work with UP as you would any federal entity with long lead times, e.g. U.S. Army Corps of Engineers, EPA, FAA, etc.
- Collaborate with UP to identify and document all known issues and constraints that will affect project execution, including labor resources, work schedule limitations, track windows and the like, to enable interested developers to submit more accurate schedules and pricing in their proposals to do the work.
- Anticipate and plan for the significant lead time required to design, procure and implement technology, particularly in light of "Buy America" compliance requirements. Examples include: signal design, procurement and construction for wayside and at grade crossings; Positive Train Control (PTC) for automatic braking, which involves extensive geo-location

work and software and hardware modifications; and compatibility of signal system technologies.

- Anticipate and budget for UP's higher engineering costs (often double what might be considered "normal", given the complexity of the work and the multiple review interactions UP undertakes with the public entity and private developer throughout the design approval process). In most cases, when modifications to UP's tracks are required for a project, those costs will be borne by the public entity and its private developer, rather than UP, which can significantly increase project budgets.

PROJECT MANAGEMENT

Where public entities adopt design-build and other streamlined project delivery models, the following project management best practices will help foster the collaborative process needed for UP to engage successfully with the project team:

GENERAL

- Maintain continuity of key project personnel on the public entity and developer teams throughout the project, to avoid delays and challenges that arise with turnover-related loss of historical project knowledge.
- Consider requiring the developer to implement a document management system compatible with UP's existing systems and processes that facilitates ease of tracking changes and maintaining quality control across an extremely high volume of plan sheets.
- Implement rigorous quality assurance and quality control procedures for project design and construction to ensure adherence to UP's standards and to avoid unnecessary oversight and consumption of UP's resources.
- Coordinate with UP so that the appropriate systems and processes are in place to ensure the developer and public entity can maintain compliance with the terms of the agreements.
- Devote substantial time to "on board" key project personnel to increase their understanding of UP's planning requirements, additional costs, approval processes, and operational constraints, including:
 - Scheduling work crews and required timelines and recognizing that UP's labor agreements require certain work to be performed by UP labor forces;
 - Understanding UP operations and the absence of work windows/curfews. A unique characteristic of rail related work is that trains cannot simply be re-routed to deal with unexpected project delays or changes. In general, getting curfews of more than a few hours per day or week is difficult on most of UP's network;
 - Impact on UP operations and scheduling of natural disasters;
 - UP-specific safety requirements; and
 - Federal regulatory framework governing UP and other railroad operators.

SCHEDULING

- Identify critical path issues early and initiate discussions with UP team members as soon as practicable to allow sufficient lead time for planning, work crew scheduling, utility

relocations and modifications, protecting any impacted rail-served customers, railroad materials sourcing, and right-of-way acquisitions. Significant delays arise when such critical path issues are not addressed in early planning stages. Planning track construction activities at least a year in advance is prudent.

- Plan for a maximum number of design submittals per week or month, which is intended to efficiently utilize UP's available resources for design review and project oversight.
- Allow substantial lead time for utility locations and corresponding utility relocations and modifications. In particular, provide for additional lead time and resources if relocations and modifications of fiber optics will be required in connection with the project. Utility work typically includes reimbursement of third-party utility companies for engineering and construction work, which may be subject to seasonal work moratoriums and long lead times for materials.
- Understand UP's submission response timeframes are typically more like large regulatory bodies than quick-turn private developments.
- Anticipate and allow sufficient time for contractor certifications and orientation.
- Allow substantial lead time for construction occurring over or near UP's tracks to give UP sufficient time to manage flagging and safety issues and to allow for the work to be performed in compliance with such flagging and safety issues.

COMMUNICATIONS

Because UP's agreements are virtually always with the public sector entity rather than the private developer, alternative delivery methods typically require a higher level of active public entity involvement to coordinate the project team and to facilitate communications between UP and the private developer. Approaches for promoting effective project team communication include:

- Designating a lead point of contact with both the public agency and the private development partner, through whom all project communications are required to flow.
- Emphasizing consistent, frequent communication across the entire project team to anticipate and address potential challenges and known issues.
- Providing team-wide access to project communications logs that enable easy reference and faster integration of new personnel.
- Including UP's project engineers in project meetings, to the extent UP's infrastructure is implicated in the project scope.

SUMMARY

The most successful outcomes are obtained when the public entity ensures that its developer partner works collaboratively with UP and when all parties at the project planning table understand the constraints and processes driving how the work is approached and delivered.

ADDITIONAL RESOURCES

- Industry and Public Projects:
 - https://www.up.com/real_estate/roadxng/industry/index.htm
 - https://www.up.com/real_estate/roadxng/index.htm

- Real Estate & Utility Installations:
 - https://www.up.com/real_estate/index.htm
- UP Engineering Project Specifications:
 - <https://www.up.com/customers/ind-dev/operations/specs/index.htm>