Environmental factors to consider when scoping for a road project

The major factors that require consideration during the project scoping process consist of the facts, existing or potential circumstances and conditions in the project area that will influence the magnitude of the project scope, schedule duration and size of the fee. The major environmental factors that require consideration during the project scoping process are discussed below. These factors consist of the facts and existing or potential circumstances and conditions in the project area that will influence the magnitude of the project scope, schedule duration and size of the fee.

The Bartlett and West environmental department has more than 22 years of experience performing environmental investigations and analyses for road projects ranging from minor shoulder widening projects to multiple interchange freeway projects.

What is the project type?

Knowing the project type helps determine the environmental classification, level of effort, extent of agency coordination and applicable public involvement. A few examples are listed below:

- Bridge replacement
- Two-lane undivided to a four- to six-lane divided
- Freeway addition of lanes and ramp reversal
- Bypass/new location

Where is the project location?

Knowing where the project is located can help identify potential project issues. Projects in urban locations may have a different set of issues than a rural project.

- Urban or Rural
    - Urban example issues:
        - Displacements, parking lots

        - Adjacent parks
        - Hazardous materials
    - Rural example issues:
        - Loss of access to left turn movements
        - Vegetation and waters impacts

Are there project planning inconsistencies?

A project with planning inconsistencies can adversely affect the project schedule and potentially delay the project. Some considerations are listed below:

- Air quality attainment vs non-attainment
- The project must match (i.e., be in conformance with) the project description in the Metropolitan Transportation Plan (MTP), Transportation Improvement Program (TIP) or Statewide Transportation Improvement Program (STIP), otherwise the project cannot be constructed.
- Verify the project is in the MTP and TIP
- During the actual project:
    - Confirm the project has a solid need and purpose
    - Inform DOT of inconsistencies and issues to the MTP and TIP so there is adequate time for revisions, if possible.

What are the engineering and environmental constraints?

Constraints analysis helps to identify the physical constraints, and associated avoidance and mitigation activities, that potentially could affect the magnitude of the scope, schedule duration and project cost. Some constraint examples are listed below:

- Right-of-way (ROW) limitations and constraints related to resources and cost
    - Billboards (expensive to replace, may not be relocatable)
    - Businesses and residential neighborhoods
    - Disenfranchised EJ/LEP populations
    - Floodplains
    - Historic resources
    - Jurisdictional waters
    - Oil/gas wells
    - Section 4(f) (public park and recreation areas) and 6(f) sites (Land and Water Conservation Act funded)
    - Utilities
- Identify initial environmental constraints using desktop research. Assume a worst-case scenario for scope and schedule.

- During actual project:
    - Coordinate early with the engineer to avoid, minimize and/or mitigate impacts
    - Minimize the need for Best Management Practices (BMPs) per design modifications

What will be the environmental classification?

Under the National Environmental Policy Act (NEPA), there are three classes of environmental actions: Categorical Exclusion (CE), Environmental Assessment (EA) and Environmental Impact Statement (EIS). Each requires varying levels of environmental review and documentation. CEs are actions that are unlikely to have significant environmental impacts and therefore do not require an EA or EIS. An EA is a more in-depth level of analysis that determines if a proposed action might have a significant impact on the environment. If the EA determines that there are no significant impacts, a Finding of No Significant Impact (FONSI) is issued. If significant impacts are found, an EIS is required. The EIS provides a comprehensive analysis of potential impacts and mitigation measures.

- Depends on the project complexity and the potential impacts
- CE – shortest time and smallest cost
- EA – longer time and larger cost
- EIS – longest time and largest cost
- During actual project:
    - For Texas Department of Transportation projects, you should conduct Environmental Compliance Oversight System (ECOS) scoping activities to determine the required environmental documentation (e.g., CE).

Identify and schedule adequate coordination time for high-risk and critical path items

It is important to identify the project's known or potential high-risk and critical path items so adequate coordination time can be incorporated into the schedule and fee. Otherwise, project milestone dates, environmental clearance and project construction risk being delayed.

- Culture resources investigations/clearances
    - For example, review historic site/bridge survey databases prior to field surveys to:
        - Determine site locations within the Area of Potential Effect (APE)
        - Determine significance and historical eligibility assessment
        - Determine potential impact evaluations on known archeological resources commonly found along waterways.

- Right of entry
    - Timely communication is imperative
- Threatened/endangered species investigations/clearance
- Permitting

Public involvement and stakeholder interests

Public involvement can strongly influence the success of a project. Failure to provide adequate public involvement communication opportunities can lead to public opposition and potential project cancellation. Public involvement provides the opportunity for project designers to interact with the affected community in a productive, informative and direct manner, leading to changes within the project to better fit the community needs.

- Know your target audience and their concerns ASAP
    - Agencies and municipalities
    - Businesses
    - Community facilities
    - Public services
    - Schools
    - Special interests (e.g., law enforcement, access, safety, vehicle type accommodations, utilities, etc.)
- Example public concerns include:
    - ROW acquisition
    - Loss of access
    - Traffic noise
    - Safety
    - “Not in my backyard” mentality

Conclusion

The project type, location, planning inconsistencies, constraints, environmental classification, coordination time and public involvement are all factors that influence a project’s scope, schedule and fee.

Bartlett & West’s environmental department understands the environmental components and complexities of roadway projects and how to provide on-time, within-budget deliverables to our clients.