

Improving the Constructability of Highway Design Plans

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Abstract : The U.S. Federal Highway Administration (FHWA) Every Day Counts Program (EDC) has resulted in state DOTs putting evermore emphasis on speeding up the delivery of highway and bridge construction projects for use by the driving public. This has resulted in an increase in the use of alternative construction delivery systems such as design-build (D-B), construction manager at-risk (CMR) or construction manager/general contractor (CM/GC), and adding alternative technical concepts (ATCs) to traditional design-bid-build (DBB) contracts. ATCs have exhibited great potential for delivering substantial benefits like cost savings, increased constructability, and quicker project delivery. Previous research has found that knowledge of project constructability was lacking in state Department of Transportation (DOT) planning, programming, and environmental staffs. Many agencies have therefore relied on a set of 'acceptable' design solutions over the years of working with their local resource agencies. The result is that the permitting process for several government agencies has become increasingly restrictive with the result that the DOTs and their industry partners lose the ability to innovate after a permit is approved. The intent of this paper is to report on the research team's progress in this ongoing effort furnish the United States government with a uniform set of guidelines for the application of constructability reviews during all phases of project development and delivery. The research uses surveys and interviews to determine which states have implemented formal programs to ensure that the constructor is furnished with a set of contract documents that affords said constructor with the best possible opportunity to successfully construct the project with the highest quality standards, within the contract duration and without exceeding the construction budget. Once these states are identified, workshops are held all over the nation, resulting in the team learning the best current practices and giving the team the ability to recommend new practices that will improve the process. The plan is for the FHWA to encourage or require state DOTs to use these practices on all federally funded highway and bridge construction projects. The project deliverable is a Guidebook for FHWA to use in disseminating the recommended practices to the states.

Keywords : alternative construction delivery, alternative technical concepts, constructability, construction design plans

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