

Development of an Accelerated Bridge Construction (ABC) Design and Construction Guide Specification; NCHRP 12-102

Description

Meta Fields

Project Completion Year : 2017

Project Starting Year : 2014

Project Length : 27

Budget : 370000.00

Abstract :

Many state DOTs and the Federal Highway Administration (FHWA) are actively promoting accelerated bridge construction (ABC) to reduce traffic impacts, onsite construction time, environmental impacts, and life-cycle costs; and to improve work-zone safety, site constructability, material quality, and product durability while replacing the nation's transportation infrastructure. FHWA currently defines ABC components as:

- Prefabricated bridge elements and systems (PBES);
- Structural placement methods;
- Foundation and wall elements;
- Rapid embankment construction; and
- Fast track contracting (not to be considered under this project).

The PBES are structural components of a bridge that are built offsite or near-site of a bridge and include features that reduce the onsite construction time and the mobility impact time that occurs when building new bridges or rehabilitating or replacing existing bridges relative to conventional construction methods. The PBES have two categories:

1. Prefabricated elements comprise a single structural component of a bridge. Under the context of ABC, prefabricated elements reduce or eliminate the onsite construction time that is needed to build a similar structural component using conventional construction methods.
2. Prefabricated systems consist of an entire superstructure, an entire superstructure and substructure, or a total bridge that is procured in a modular manner such that traffic operations can be allowed to resume after placement.

As the use of ABC increases, a growing body of recommended ABC design and construction practices has been developed from various research and demonstration projects, including performance in seismic regions. FHWA, state DOTs, and industries have developed their own products (e.g., manuals, guides, and tools) as resources for ABC projects. There is now a need to compile these products into a guide specification on the use of ABC. This guide specification will lead to (1) efficient design and construction of ABC projects, (2) cost reductions, (3) greater acceptance of ABC, and (4) more efficient and effective ABC applications as owners address the challenges of renewing the nation's aging highway infrastructure.

Subject : Design & Construction Spec

Group : Design Specifications

Category : Ongoing Projects