

Report Title

*The Future of
Rapid Bridge Deck
Replacement*

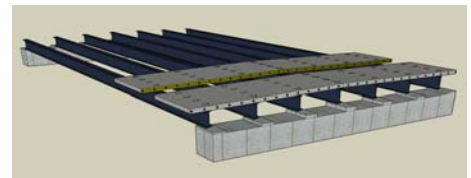


Why was it studied?

Our infrastructure is aging and many bridges will need to be replaced or rehabilitated in the near future. Work on these bridges often requires road closures and detours. Accelerated Bridge Construction (ABC) methods can reduce how long roads and bridges are closed and would save time and money lost to traffic delays and inconvenience. Because bridge decks are made of concrete, on site construction takes more time to ensure curing of the concrete.

What was done?

This project evaluated the process to building a bridge deck offsite and the necessary measures of transporting it to the project location. Building the new deck off site reduces the amount of the time the existing bridge would be out service. The constructed deck would be full-width slabs that would run across the girders of the bridge. The study considered a variety of challenges relating to cost, safety, and technical feasibility.



Principal Investigator

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Report Link

<http://www.nh.gov/dot/org/projectdevelopment/materials/research/projects/documents/15680X-FINALREPORT.pdf>

What did we learn?

It is technically feasible to build a bridge deck specific to the project location off site that has the strength needed. Transporting the deck to the bridge location requires special handling and equipment. Using a complete road closure, a bridge can be removed and replaced during a short-time frame (e.g. < 3 days). With a complete closure, there is no traffic immediately adjacent to the construction. This is safer for both the travelling public and the construction crew. This non-traditional technique may cost more to construct, but it reduces costs put on the traveling public and neighborhood in the form of traffic delay and inconvenience respectively.

How can we use it?

Bridges to be replaced in the same location are candidates for ABC methods. This replacement option saves costs for detours and is less disruptive to the local community. This new method takes advantage of all that pre-cast concrete has offer.



Massachusetts' example of a different method of rapid bridge construction.

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