



ACCELERATED BRIDGE CONSTRUCTION
UNIVERSITY TRANSPORTATION CENTER

UTC Project Information	
Project Title	Performance of Existing ABC Projects: Inspection Case Studies (Florida International University)
University	FIU
Principal Investigator	Mehrabi, Armin
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Funding Source(s) and Amounts Provided (by each agency or organization)	ABC-UTC Funds: \$30,000 Match Funds: \$15,000
Total Project Cost	Total Funds: \$45,000
Agency ID or Contract Number	Accelerated Bridge Construction University Transportation Center (ABC-UTC) 69A3551747121
Start and End Dates	June 2018- July 2020
Brief Description of Research Project	<p>Accelerated Bridge Construction (ABC) employs prefabricated bridge elements moved to the bridge location and installed in place. Accordingly, ABC reduces many uncertainties associated with construction processes and performance during service life. It also improves the life cycle cost by reducing construction time and traffic interruptions, better control over schedule, and normally by the higher quality of elements resulting in better life-cycle performance. Nevertheless, prefabricated elements need to be made continuous using cast-in-place joints. ABC “closure joints” connecting deck elements to each other and to the bridge girders have greater exposure to degrading environmental effects, and often there is more focus on their evaluation. These joints, expected to become serviceable quickly can therefore be viewed as critical elements of the ABC bridges. Instances of defective (leaky) joints have been reported, and concerns have been raised about the long-term durability of the joints. The long-term deflections and environmental loading can only exacerbate this situation. These may overshadow the many advantages of ABC specifically as life-cycle performance and costs are concerned. Hence, there have been questions on the long-term performance of ABC bridges. There have been limited investigations by some states to monitor the ABC bridges for determining their performance. ABC-UTC, through a collaborative effort by partner universities, is planning to embark on a coordinated and extensive inspection program to inspect several bridges in various states. The inspection protocol will be prepared by ISU, and all five partner universities will inspect a minimum of two bridges in their respective state. The results will be compiled and published on ABC-UTC website</p>

	<p>and will become available to outside users and researchers. The primary objective of this project is to collect much needed information on performance of two in-service ABC bridges. It is envisioned that inspection will include routine visual inspection, special inspection of certain details, and application of NDT methods wherever needed. The results will be compiled in a format for effective recording and will be reported accordingly.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here</p>	<ul style="list-style-type: none"> • Florida DOT District 6 provided boat, operator, and technician for inspections • University of Miami invited FIU to join their research team to evaluate ABC bridge on UM campus • Work on University of Miami bridge set the foundation for proposing the concept to FHWA; FHWA invited FIU to submit a full research proposal for the concept
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>Florida DOT strongly interested in inspection outputs; ABC-UTC provided report</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project website 	<p>https://abc-utc.fiu.edu/research-projects/fiu-research-projects/performance-of-existing-abc-projects-inspection-case-studies/</p>