UTC Project Information	
Project Title	Understanding Critical Impacting Factors and Trends on Bridge Design, Construction, and Maintenance for Future Planning
University	FIU
Principal Investigator	Dr. Lu Zhang
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Funding Source(s) and Amounts Provided (by each agency or organization)	ABC-UTC Funds: $55,000 Match Funds: $23,075
Total Project Cost	Total Funds: $78,075
Agency ID or Contract Number	Accelerated Bridge Construction University Transportation Center (ABC-UTC) 69A3551747121
Start and End Dates	12/01/2019– 12/31/2020
Brief Description of Research Project	Various impacting factors, such as economic growth, demographic trends, climate change, and technology advancement have driven the changes in the infrastructure sector at an unprecedented speed. Bridges are an integral and important part of transportation infrastructure systems and are inevitably being affected by these factors. As a delivery solution to build and repair bridges with reduced traffic disruption and increased safety, accelerated bridge construction (ABC) is confronted with many challenges imposed by these factors. In this project, critical impacting factors are defined as the factors that may be considered unproven, lacking refinement, relatively unknown, but have the potential to affect bridge design, construction, and maintenance (DCM) in the short- or long-term. Some examples of critical impacting factors include connected and autonomous vehicles (CAVs), electrical vehicles, passenger drones, extreme weather events, sea level rise, and E-commerce, etc. These factors are occurring and evolving at an ever-increasing pace, and there is a growing awareness that these changes will reshape the way that bridges are being designed, constructed, and maintained over the next decades. It is thus imperative to understand these factors and their impact on bridge DCM in order to better fulfill the vision of ABC in the context of future infrastructure system. However, there is a lack of understanding on how these changes will affect bridge DCM and/or ABC in both the near term and long term, due to two challenges: (1) the difficulty in predicting the trends of these factors – whether it is a long-term lasting force or a temporary

	phenomenon, and (2) the challenge in understanding the interplay between these factors and bridge DCM and/or ABC. The main objective of this project is to understand the trends of critical impacting factors and examine how these factors may impact the way that bridges are designed, constructed, and maintained.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	This is an active research project. Upon completion, outcomes will be reported.
Impacts/Benefits of Implementation (actual, not anticipated)	This is an active research project. Upon completion, impacts/benefits will be reported.
Web Links • Reports • Project website	https://abc-utc.fiu.edu/research-projects/fiu-research-projects/laminated-wood-deck-system-for-folded-plate-girder/