

**PROJECT MANAGEMENT PLANS TO SUPPORT SUCCESSFUL  
DELIVERY OF ACCELERATED BRIDGE CONSTRUCTION PROJECTS**

**Quarterly Progress Report  
For the period ending May 31, 2021**

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**ACCELERATED BRIDGE CONSTRUCTION  
UNIVERSITY TRANSPORTATION CENTER**

Submitted to:  
ABC-UTC  
Florida International University  
Miami, FL

**Program Progress Performance Report**  
**University Transportation Centers**

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# 1. Background and Introduction

There are about 600,000 bridges on public roads spread out across the US. Maintaining these assets represents a sizable investment of resources. The ABC approach is currently being utilized in some states for rapid construction of the bridges. However, not all DOTs are using the ABC approach. This can be linked to the hesitation of contractors to implement the ABC approach due to lack of training, incentives, and culture of respective DOTs to rely on traditional methods. Having a formal Project Management Plan (PMP) crafted specifically for the ABC projects will guide contractors during the life of the projects and encourage higher adoption of the approach. While there is guidance for how to complete these PMPs for the major projects that they are required on, the specifics of developing a PMP for an ABC project are not addressed in the guidance provided by the Federal Highway Administration or in the SHRP 2 R10 report.

## 2. Problem Statement

Projects designated as major projects in the 23 U.S.C. 106(h) and funded by federal assistance are required to submit a Project Management Plan (PMP) to the Federal Highway Administration (FHWA). These major projects are dynamic in nature with high levels of uncertainty. Having a PMP provides guidance to the project managers to make decisions that keep the project moving smoothly. In general, the Strategic Highway Research Program 2 (SHRP 2) R10 provides a five-dimensional project management to handle the uncertainties of the complex projects. However, the R10 did not specifically address the implementation of PMP in Accelerated Bridge Construction (ABC) projects.

## 3. Objectives and Research Approach

The research team will adopt an exploratory approach to develop a framework for implementation of PMP in ABC projects (similar format as provided in SHRP2 R10). The framework will be categorized by different ABC tiers such as tier 1, tier 2, etc. The framework of the PMP will address items such as incentives/disincentives, public information plans, work zone control, off-site fabrication, etc.

## 4. Description of Research Project Objectives

The following is a description of tasks carried out to date.

### Task 1 – Literature Review

**Proposed Task Description:** The objective of this task is to investigate the components of ABC projects through review of literature, focusing on the following topics:

- Current practices in ABC projects
- Advantages and disadvantages of ABC
- Components of ABC to include in the PMP

**Progress to Date:** For this part of the project, the team understood the ABC practices including the pros and cons of the method. The team then selected some ABC Projects to analyze and some

key information was determined. The information belows is an example of the findings which helped the team understand how the ABC projects are categorized.

1. Onsite construction time: The period of time from when a contractor alters the project site location until all construction-related activity is removed. This includes, but is not limited to, the removal of Maintenance of Traffic, materials, equipment, and personnel.

2. Mobility impact time: Any period of time the traffic flow of the transportation network is reduced due to onsite construction activities.

Tier 1: Traffic impacts within 1 day

Tier 2: Traffic impacts within 3 days

Tier 3: Traffic impacts within 2 weeks

Tier 4: Traffic impacts within 1 month

Tier 5: Traffic impacts within 3 month

Tier 6: Overall project schedule is significantly reduced by months to years

3. Overall Project Time: Overall project time is the time beginning with planning/NEPA and ending with the completion of construction.

4. Project Development Time: Project development time is the time beginning with planning, including NEPA and contract plan development time, and ending on the date in which the project is advertised for construction.

Through research and skimming over about 60 ABC projects from the FIU ABC Data Base, Method 2 was found to be most documented and was used to group the ABC projects for further analysis in the development of the ABC PMP Framework .

## **Task 2 – Collect and Analyze PMPs of Large Projects**

***Proposed Task Description:*** The objective of this task is to study the components of PMPs in general and specific to the ABC projects. The following are the specific tasks:

- Find and Investigating existing project PMPs including PMPs for ABC projects
- Study the information contained in PMPs. PMP information includes but not limited to advantages, disadvantages, work zone controls etc.
- Identify SHRP 2 R10 5DPM recommendations for PMPs
- Find and compile information to be addressed by PMPs including
- Analyze Contents of collected PMPs
- Compare analysis of PMPs to the Guide to Project Management R10 reports

***Progress to Date:*** For this part of the project, the team found a FHWA Project Management Plan guide and compiled a couple of PMP examples found on the FHWA website. The team analyzed the PMP guide and the example PMPs to identify the major components needed to be addressed in a PMP. From this information, a master list was created with the key findings from the large project PMP examples. The research done in Task 1 was used to add information to the master list which addressed the key components of ABC projects, making the master list unique to ABC projects. The team identified the SHRP 2 R10 5DPM recommendations for PMPs and

implemented them in the masterlist. This task is still under way as the team is still gathering more information and examples of PMPs. The team obtained samples of past ABC projects reports and this information was analyzed and added to the PMP collection Masterlist.

### **Task 3 - Conduct Interviews for Evaluating the Framework**

***Proposed Task Description:*** The objective of this task is to evaluate the initial framework. Two DOT officials and two industry practitioners knowledgeable about the ABC projects will be recruited and informed about the initial framework. Subsequent structured interviews will be conducted to evaluate the framework. The research team will reach out to experts within their network (for instance personnel from ODOT and industry partners like Austin Bridge & Road). Feedback from the interviews will be used to make adjustments to the initial framework to finalize it. This task is scheduled for completion in the second quarter and these are the action items.

- Create an initial framework from the information collected from task 1 and two
- Schedule and conduct interviews with officials and individuals knowledgeable o Project Management Plans
- Review the recommendations and make amendments to initial framework
- Send out final draft to the panel for final feedback

***Progress to Date:*** The prerequisite for this task, Task 2, is still under completion. Once task 2 is complete, then Task 3 will begin.

### **Task 4: Prepare Final Report**

***Proposed Task Description:*** The team will draft a final report with the details of the study along with the benefits and challenges of the current management practices in ABC projects. The report will include the details of the finalized framework for the implementation of PMPs for ABC projects, and validation of the framework by experts. In addition to the final report, the team will produce a three-minute video. This task has not been started and will be completed after task 3. The action items for this task are as follows:

- Prepare final framework from Task three feedback
- Final Framework Submission
- Video submission

***Progress to Date:*** The prerequisite for this task, Task 3, is still under completion. Once task 3 is complete, then Task 4 will begin.

## **5. Expected Results and Specific Deliverables**

Quarterly reports are due.

Final report is due on Feb 28, 2022.

## 6. Schedule

Progress of tasks in this project is shown in the table below.

Project	25% Completed
Task 1 - Literature Review	75%
Task 2 - Interview DOT and Industry Personnel	30%
Task 3 - Develop Initial Framework	0%
Task 4 - Prepare Final Report	0%

AS OF 05.31.21														
RESEARCH TASK	2021												2022	
	M	A	M	J	J	A	S	O	N	D	J	F		
Task 1 - Literature Review	■	■	■	■	■									
Task 2 - Collect & Analyze PMPs of ABC project			■	■	■	■								
Task 3 - Compare collected PMPs to R10					■	■	■							
Task 4 - Interview DOT and Industry Personnel							■	■	■					
Task 5 - Develop Initial Framework								■	■	■	■			
Task 6 - Finalize the Framework and Develop Final Report												■	■	
	■	Planned Task												
	■	Task Accomplished												
	■	Additional Time												