

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Iowa Department of Transportation

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # TPF-5(372)	Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input checked="" type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: Building Information Modeling (BIM) for Bridges and Structures		
Name of Project Manager(s): Julie Rivera, PM John Reese, Deputy PM	Phone Number: (773) 380-7930 (972) 732-2028	E-Mail Julie.Rivera@hdrinc.com John.Reese@hdrinc.com
Lead Agency Project ID: TPF-5(372)	Other Project ID (i.e., contract #): N/A	Project Start Date: November 28, 2018
Original Project End Date: November 27, 2019	Current Project End Date: January 31, 2020	Number of Extensions: 2

Project schedule status:

- On schedule
 On revised schedule
 Ahead of schedule
 Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$526,378	\$405,694	70%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$4,545 56% <i>direct expenses</i>	\$89,914	92%

Project Description:

The objective of this project is to provide technical support for the implementation of Building Information Modeling (BIM) for Bridges and Structures under the direction of AASHTO COBS Technical Committee on Technology and Software (T-19) and the Transportation Pooled Fund TPF-5(372) Technical Advisory Committee (AASHTO COBS T-19/Pooled Fund). BIM has been widely used in the commercial sector for vertical construction to manage projects from conception through design, fabrication, construction and future asset management and maintenance. Although some fabricators who perform work on both building construction and transportation structures have begun employing BIM tools in the fabrication of bridge components, BIM use in transportation infrastructure is severely limited due to the lack of standardization. To take advantage of the efficiencies associated with the use of BIM in transportation structures, a comprehensive strategic plan by AASHTO COBS T-19 is needed.

PROJECT SCOPE:

1 Investigation and Exploration

(University of Florida to Lead / Fair Cape Consulting to Support)

The consultant team is performing research to find comparative implementation efforts of common data standards within the infrastructure industry. These common efforts will require a shared vocabulary and definition of terms. The consultant team will document and report the common industry efforts and make terminology recommendations.

Current % complete for this task: 99%

2 IFC Development

(AEC3 / University of Florida)

The main technical achievements will be performed by the consultant team under "IFC Development" work package including developing interoperable solutions starting with process and use case definitions, continuing with the information delivery specification, formalizing the exchanges by creating a model view definition and by supporting the software industry through anticipation, deployment and certification of the IFC interfaces.

Current % complete for this task: 50%

3 Economic Analysis

(HDR Lead)

In order to support the decision-making process of each state DOT, an economic analysis will be performed, focusing on the benefits and costs of adopting standards for information modeling to facilitate the exchange of models and data. The team will explore how enhanced interoperability affects operational expenses, savings in information verification costs, improvements in workflows, and enhancements in collaboration.

Current % complete for this task: 0%

4 Industry Organization

(Jeff Ouellette Lead, HDR Support)

The current roadmap that AASHTO COBS T-19/Pooled Fund developed two years prior to the start of this project is in need of an update to show an achievable plan with actionable goals based on current industry activity. The consultant team will update the roadmap of BIM for bridges and structures. Involvement with bSI is critical for allowing AASHTO COBS T-19/Pooled Fund to have a voice in the development of this national standard. Recommendations and long-term strategies will be developed. Governance of this program will require the cooperative involvement of key industry stakeholders. The consultant team will review the current governance model to assure the structure and assignments are relevant. Recommendations on how to best maintain influence on direction and development of IFC will be developed. The leadership of the governance body will need to support key relationships with bSI, an international organization with chapters worldwide. The consultant team will work with AASHTO COBS T-19/Pooled Fund to create a plan to facilitate this engagement. Task 4.2 Governance and Stewardship Model will be completed in contract year 2 via contract amendment.

Current % complete for this task: 90%

5 Development and Implementation

(Fair Cape Consulting / HDR Co-Lead)

The consultant team will build an Engagement and Implementation Plan that is focused on design and development of industry tailored tools and tactics. Our team will identify and leverage the balance between the right message and the appropriate approach for engagement and meaningful dialogue. HDR will also support states implementing the national standard to clarify what that product is. Having a tangible, common end-goal will allow independent areas to mature

concurrently. HDR will develop an implementation plan that supports this goal. Tasks 5.2 Engagement Tool Kit Development and 5.3 Implementation Support will be completed in future contract years due to budget constraints.
Current % complete for this task: 95%

6 Management and Coordination

(HDR Lead)

This task includes management of budget and schedule, project reporting, coordination with AASHTO COBS T-19/Pooled Fund, internal coordination with consultant team, and quality control review of deliverables.

Current % complete for this task: 96%

Note: The percentage completion values shown correspond to the percent complete of year 1 effort under the current one-year contract. The project is anticipated to last through 2022 with contract renewals at the end of each calendar year.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

Q4 2019

Progress Achieved:

Task 1 Investigation and Exploration

- Issued updated draft report to full pooled fund for review and addressed comments.

Task 2: IFC Development and Verification

- Validation of Bridge Lifecycle Process map
- Working Group 2 review of interactive pdf for the Bridge Lifecycle Process Map
- Assessment of the impact of the international Bridge Design Transfer View (DTV) MVD to the project
- Gap analysis between Bridge DTV MVD and US Design to Construction MVD
- Verification of NSBA Fabrication Process Map
- Aggregation of relevant IDM terminology in a database
- Assessment of exchange requirements from AASHTO/NSBA BrIM data dictionary

Task 3: Economic Analysis

No activity (This task is due to start in 2022.)

Task 4: Industry Organization

- Held webinar for pooled fund members to review the Software Vendor Engagement Plan
- Released updated Software Vendor Engagement Plan for final review by pooled fund members and software vendors
- Developed updated AASHTO-buildingSMART engagement memo

Task 5: Implementation and Collaboration

- Development of standard email response for pooled fund members to send to interested stakeholders
- Development and internal review of Stakeholder Engagement Plan
- Development of content for Collaboration Site

Task 6: Project Management and Coordination

- Coordination with executive committee and pooled fund members on significant scope changes related to international Bridge DTV MVD and shifting focus to MVD related to fabrication processes
- Scope development and coordination with executive committee for contract Year 2
- Quarterly online meeting with full pooled fund on 12/11/19

Anticipated work next quarter (subject to change pending finalization of contract Year 2 scope):

Task 1: Investigation and Exploration

- Finalization of aggregation of common terminology.
- Issuance of final Task 1 report.

Task 2: IFC Development and Verification

- Finalize gap analysis between Bridge DTV MVD and US Design to Construction MVD
- Continue developing Design to Fabrication IDM (terminology, exchanges, etc.)
- Complete a use case for exchange model requirements to be mapped to IFC
- Complete and submit plain language narrative for the Design to Fabrication IDM
- Continue analysis of current IFC 4.2 Effort

Task 3: Economic Analysis

No activity (This task is due to start in 2022)

Task 4: Industry Organization

- Hold prioritization workshop with pooled fund members to prioritize future goals in the updated Roadmap
- Submit one-page summary sheet of the Roadmap
- Hold software vendor engagement quarterly meeting
- Incorporate pooled fund and vendor comments on the Software Vendor Engagement Plan and issue final document
- Review vendor roadmaps to support IFC and development of Draft Vendor Roadmap Alignment Report

Task 5: Implementation and Collaboration

- Finalize and submit Stakeholder Engagement Plan
- Continue development of content for Collaboration Site

Task 6: Project Management and Coordination

- Internal meetings and pooled fund/working group meetings as needed
- Finalize Year 2 scope
- Attend in-person meeting with AASHTO COBS T-19/Pooled Fund in February 2020

Significant Results:

- None at this time

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).

None at this time.

Potential Implementation:

Nothing to report at this time.