

TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Iowa DOT

INSTRUCTIONS:

Lead Agency contacts 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 # <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i> TPF-5(480)	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 checked="" type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
TPF Study Number and Title: Building Information Modeling (BIM) for Infrastructure		
Lead Agency Contact: John Wilkerson & Abhishek Bhargava, BIM Launch Alliance	Lead Agency Phone Number: 517-610-6736	Lead Agency E-Mail: john.wilkerson@mbakerintl.com; Abhishek.Bhargava@wsp.com
Lead Agency Project ID:	Other Project ID (i.e., contract #):	Project Start Date: 4/12/2023
Original Project Start Date: 12/31/2023	Original Project End Date: 12/31/2027	If Extension has been requested, updated project End Date: 0

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
\$2,600,000	\$1,167,583 (incl. Work in Progress)	44.9

Quarterly Project Statistics:

Total Project Budget And Percentage This Quarter	Total Funds Expended This Quarter	Total Percentage of Time to Date
	\$80,600	44.9

Project Description:

Activities that advance the short and medium term goals of the BIM National Strategic Work Plan will be prioritized and carried out by the pooled fund participants. Meetings will serve as a forum to facilitate knowledge sharing among participants. Proposed activities include:

- Develop BIM foundational use cases and workflows. Highlight more effective digital exchange of information (e.g. survey to design, design to construction, construction to asset management, etc.). This kind of exchange will increase collaboration and automation, reduce duplication of effort and avoid errors.
- Establish BIM Processes (e.g. Develop contract model language to guide BIM procurements.)
- Identify and Execute Capacity-Building Activities (e.g. Establish project selection criteria for BIM implementation; Identify project types and use cases for early pilot projects phase).
- Enhance Skills and Collaboration (e.g. Establish workforce training curriculum to set expectations about required BIM qualifications. Understand organizational roles and responsibilities to connect data silos).
- Deploy Standards-Based Data Management Tools and Techniques (e.g. Develop catalog of information model requirements to define what data should be created and why. Develop standard information delivery specifications for data exchange between systems).
- Lessons Learned - Identify issues with current implementation efforts and share potential solutions to help move toward to greater BIM maturity.
- Research Priorities - Identify short-term and long-term research needs and strategically prioritize the needs so the most urgent and impactful opportunities are addressed first.
- Information Exchange - Establish a forum/expert hub for practitioners in the highway industry to understand the various tools and technologies being used, promote the common modeling formats and share experiences.

The objective will be to increase the BIM maturity of each state by one as it relates to the FHWA BIM NSWP. This will be accomplished by publishing artifacts (living and evidence based versions) through the BIM Implementation Guidebook and creating BIM Deployment Tools related to openBIM data exchanges. The BIM Clearinghouse will be the hub for agencies to access these useful tools to help the mature on their journey toward BIM for Infrastructure.

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

COORDINATION AND OUTREACH ACTIVITIES

AASHTO COD and COC presentations

Area C and D work group meetings

Organized and attended Monthly Project Sprint Meetings

Deliverable Status:

The first video was developed for review.

Task 0:

Year	Deliverable	Description	D-C	DABs	Total	Comments
3	1	Project kickoff meeting and work plan	N/A	N/A	100%	Year 3 work plan and monthly meeting overview
3	2	Monthly progress meetings (12), workgroup meetings (24), and Technical meetings with BIM for Bridges & Structures Pooled Fund (3)	N/A	N/A	0%	
3	3	Quarterly progress reports (4)	N/A	N/A	0%	
3	4	Three-day, in-person meeting (1)	N/A	N/A	0%	
3	5	Virtual, end-of-the-year meeting (1)	N/A	N/A		

Task 1:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	10	Continued development of marketing & communications collateral (6 flyers; 6 short videos)	N/A	N/A	30%	Videos
3	6	Maintain, support and enhance the TPF-5(480) website.	N/A	N/A	0%	
3	7	Conference/event presentations (6)	N/A	N/A	50%	COD, COC, COB
3	8	Project-specific stakeholder with industry (2) and software vendors (2)	N/A	N/A	0%	
3	9	White paper: CDE Requirements to Enable open BIM Workflows.	N/A	N/A	0%	

Task 2:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	11	Scope of DABs IDM	100%	90%	96%	DABs Scope Early January 2026
2	12	Baseline report DABs	100%	50%	80%	DABs January 2026
3	10	Scope of IDS and mapping of IDS elements to the IDM	0%	0%	0%	
3	11	Scan of design authoring and CDE tools and plan for use on project	0%	0%	0%	

3	12	Scan of IDS development and testing tools and recommendations for project	0%	0%	0%	
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Task 3:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	13	Detailed digital workflow/process models for DABs data exchange	100%	40%	70%	Appendix B Detailed Process Maps Design to Construction.pdf
2	14	Preliminary Information Architecture for D-C and DABs data exchanges– (a) Information Requirements Database (b) Data Dictionary to support IDMs	95%	60%	68%	TAC Review
2	15	Guidance to link information requirements to BIM execution plan for D-C and DABs	0%	0%	0%	
3	13	Gap analysis spreadsheet showing differences in the data models from various States and the data in the US roads data dictionary	0%	0%	0%	
3	14	Level of development matrix for the models acquired from each of the States, and, LOD specification mapping requirements in the BEP	0%	0%	0%	
3	15	Prototype design models that reflect the data in D-C & DABs data dictionary	0%	0%	0%	
3	16	Models loaded in the BIM TPF CDE with metadata	0%	0%	0%	

Task 4:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	16	Beta Info Architecture for D-C process model	33%	N/A	33%	
2	17	Beta Info Architecture for IFC-Aligned Data Dictionary (D-C)	33%	N/A	33%	REVIEW-US-RoadsDD-v1.3.xlsx
2	18	Draft IDM for the D-C Information Exchange	33%	N/A	33%	REVIEW D-C Information Delivery Manual v1.3.docx
3	17	Beta Info Architecture for DABs process model	N/A	0%	0%	
3	18	Draft DABs IDM	N/A	0%	0%	
3	19	Draft IDS (XML) for D-C Exchange	N/A	0%	0%	

Task 5:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	19	Final Year 2 Data Dictionary to cover the process models and information architecture	0%	N/A	0%	
2	20	Final IDM for the D-C Exchange	0%	N/A	0%	
3	20	Final IDM for the DABs Exchange.	N/A	0%	0%	
3	21	Unit Test Scripts and Test Results from IDS Unit Testing, along with Final IDS		0%	0%	

Anticipated work next quarter:

COORDINATION AND OUTREACH ACTIVITIES

AASHTO COD and COC presentations

BIM TPF winter in-person and collaboration meeting

Task 0:

Year	Deliverable	Description	D-C	DABs	Total	Comments
3	1	Project kickoff meeting and work plan	N/A	N/A	100%	Year 3 work plan and monthly meeting overview
3	2	Monthly progress meetings (12), workgroup meetings (24), and Technical meetings with BIM for Bridges & Structures Pooled Fund (3)	N/A	N/A	40%	3 monthly meetings, 12 work group meetings, 1 Technical Meeting
3	3	Quarterly progress reports (4)	N/A	N/A	50%	2025 Q3 and Q4 pending
3	4	Three-day, in-person meeting (1)	N/A	N/A	100%	2024 12 03 BIM Week 2024
3	5	Virtual, end-of-the-year meeting (1)	N/A	N/A		

Task 1:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	10	Continued development of marketing & communications collateral (6 flyers; 6 short videos)	N/A	N/A	35%	Videos
3	6	Maintain, support and enhance the TPF-5(480) website.	N/A	N/A	0%	
3	7	Conference/event presentations (6)	N/A	N/A	60%	COD, COC, IHEEP, COB
3	8	Project-specific stakeholder with industry (2) and software vendors (2)	N/A	N/A	0%	
3	9	White paper: CDE Requirements to Enable open BIM Workflows.	N/A	N/A	0%	

Task 2:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	11	Scope of DABs IDM	100%	90%	96%	DABs Scope Early January 2026
2	12	Baseline report DABs	100%	50%	80%	DABs January 2026
3	10	Scope of IDS and mapping of IDS elements to the IDM	0%	0%	0%	
3	11	Scan of design authoring and CDE tools and plan for use on project	0%	0%	0%	
3	12	Scan of IDS development and testing tools and recommendations for project	0%	0%	0%	

Task 3:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	13	Detailed digital workflow/process models for DABs data exchange	100%	40%	70%	Appendix B Detailed Process Maps Design to Construction.pdf
2	14	Preliminary Information Architecture for D-C and DABs data exchanges– (a) Information Requirements Database (b) Data Dictionary to support IDMs	95%	80%	88%	TAC Review
2	15	Guidance to link information requirements to BIM execution plan for D-C and DABs	98%	90%	0%	Create draft document for review
3	13	Gap analysis spreadsheet showing differences in the data models from various States and the data in the US roads data dictionary	0%	0%	0%	
3	14	Level of development matrix for the models acquired from each of the States, and, LOD specification mapping requirements in the BEP	0%	0%	0%	
3	15	Prototype design models that reflect the data in D-C & DABs data dictionary	0%	0%	0%	
3	16	Models loaded in the BIM TPF CDE with metadata	0%	0%	0%	

Task 4:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	16	Beta Info Architecture for D-C process model	33%	N/A	33%	
2	17	Beta Info Architecture for IFC-Aligned Data Dictionary (D-C)	33%	N/A	33%	REVIEW-US-RoadsDD-v1.3.xlsx
2	18	Draft IDM for the D-C Information Exchange	33%	N/A	33%	REVIEW D-C Information Delivery Manual v1.3.docx
3	17	Beta Info Architecture for DABs process model	N/A	50%	50%	Complete SME work group meetings.
3	18	Draft DABs IDM	N/A	0%	0%	
3	19	Draft IDS (XML) for D-C Exchange	N/A	0%	0%	

Task 5:

Year	Deliverable	Description	D-C	DABs	Total	Comments
2	19	Final Year 2 Data Dictionary to cover the process models and information architecture	0%	N/A	0%	

2	20	Final IDM for the D-C Exchange	0%	N/A	0%	
3	20	Final IDM for the DABs Exchange.	N/A	0%	0%	
3	21	Unit Test Scripts and Test Results from IDS Unit Testing, along with Final IDS		0%	0%	

Significant Results:

Deliverables completed are available for immediate use.

These include the Current Practices for MALD (L) that highlights the current practices used by State DOTs to deliver MALD with additional examples to be used in conjunction with the AASHTO JTCEES MALD Maturity Guidance.

BIM State of Practice – Legal Issues that provides documentation on the legal issues related to implementing BIM for Infrastructure.

IFC and Role in BIM – Provides a high-level understanding of how IFC can help state DOTs implement BIM4I.

BLA Website – This will house the project deliverables and the Clearinghouse.

State DOT Tools Report and Field Tools/Resources – Highlights the tools currently in use by actor and phase of the asset lifecycle.

Workflow for Digital Delivery – Explains the Digital Workflow Infographic and how it can be used to move toward a BIM based digital workflow.

IDM for a Digital Workflow – Provides the process to be used to develop a US based data dictionary and IDM based on the ISO standards.

Enterprise-wide Asset Inventory – Provides guidance on how to establish and maintain a data driven asset inventory.

Digital Information for Design to Construction/Fabrication – Provides a process to gather the information required for roadway items from Design to Construction/Fabrication. Working with the pooled fund states consensus was reached for the majority of the information requirements for this exchange.

Data Governance and GIS in BIM – Explains how to leverage ISO 19650 to establish data governance.

BIM4I Clearinghouse Knowledge Platform in Draft: <https://bimclearinghouse.com/clearinghouse/>

Scope of the Information Delivery Manual (IDM) has been finalized for collaboration with industry partners and stakeholders.

Initial draft of D-C

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).

The BIM for Infrastructure Guidebook was originally planned to go through balloting with the AASHTO COD JTCEES. Due to the need for the Guidebook to be dynamic to allow for the continuing evolution of BIM for Infrastructure and to make it a web-based document the conventional AASHTO Publication process cannot be used. The TPF-5(480) Executive team is coordinating with AASTHO COD to determine a path forward.

Task 2 Initiation and Planning IDM Development has been delayed to December 2024 as establishing 4 of the 7 discipline/functional areas took longer than expected. The other 3 discipline/functional areas have proceeded to Task 3 activities so the efforts will run in parallel to minimize the delay.

Task 3 BIM Process Design and Information Architecture has been delayed to mid 2025 as noted above in Task 2.

Task 3 was previously reported at 83% complete but that primarily reflected the work related to the Data Dictionary for the D-C use case. There was also 70% progress toward the (Year 2 D15) Guidance to link the Information Requirements to BIM Execution Plans being made that was mistakenly linked to the Information Requirements being gathered in Task 2. Task 3 has been corrected to show 59% progress and we anticipated completing this work for D-C use case in 2025 Q3 and Q4 as noted in the Year 3 Work Plan.

Potential Implementation:

Living draft materials as noted in the work completed this quarter are available to the pooled fund team through the project SharePoint Site and will become available for all state DOTs through the BIM for Infrastructure Website.

bimclearinghouse.com

