

TPF-5(523) BIM for Bridges and Structures

General project overview and background:

Presentation at November 2025
openBIM Roads and Bridges
Transportation Summit

→ Navigate to “National Updates” at
<https://www.buildingsmart.us/november-2025>

Final Report and supporting
Technical Solution Summary from
the Phase I effort, TPF-5(372)

→ Final Report
→ Technical Solution Summary

BIM Pooled Funds / Technical Coordination Meeting

- Held February 10, 2026 – 9 AM to 2:30 PM - Exton, PA
- Attendees:
 - TPF-5(523) and TPF-5(480) Technical Leadership, AASHTO Representative
 - bSI Technical Leadership
- Agenda
 - TPF-5(523) and TPF-5(480) – openBIM[®] Implementation Technical Challenges
 - buildingSMART International Roadmap and Future Plans
 - Next Steps

BIM Pooled Funds / Technical Coordination Meeting

Key Takeways:

- BIM Pooled Funds Shared Focus
- Key Challenges to Implement openBIM
 - Software Vendor Support
 - Geospatial Location Interoperability
 - Pilot Projects
- buildingSMART Focus Areas
 - IFC Validation Service (exit Beta phase shortly)
 - Software Certification Program (adding IFC 4.3 mid 2026)
 - IFC 4.4 – adding IFC for Tunnel and incorporate IFC 4.3 fixes
 - IFC 5 – Finalizing Project Plan – Multiyear Effort
- Partnership Efforts
 - Setup BIM Pooled Funds / bSI Technical Leadership On-going Coordination Efforts

AASHTO

USE CASE BASED
NATIONAL STANDARDS

IDM

 IDS

 bSDD

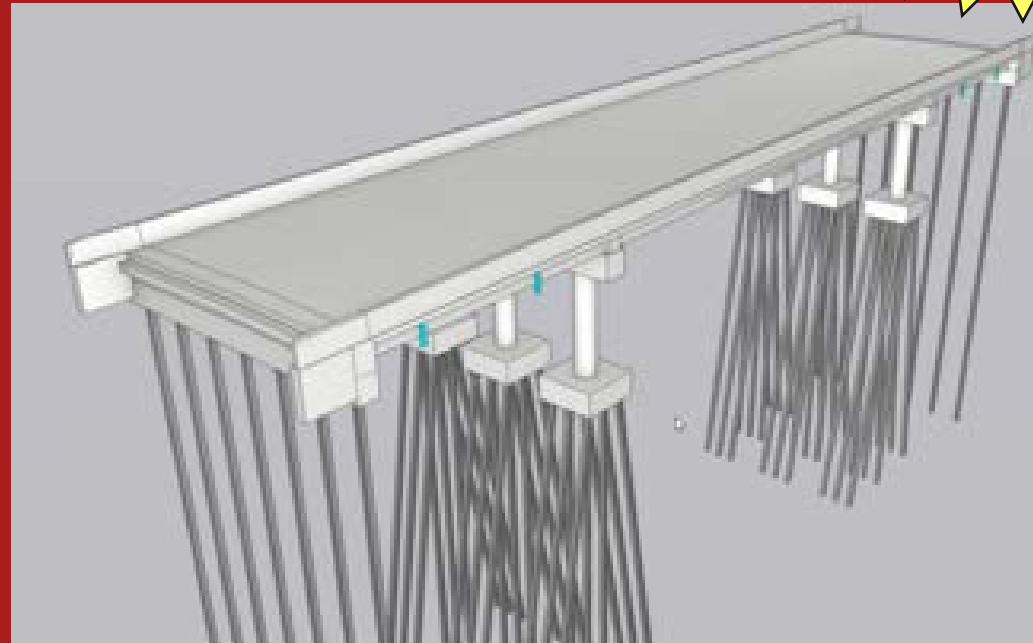
 IFC

2026-2028 IFC Bridge Pilot Projects: openBIM using TPF Data Standards

**Grant
Opportunities**

Potential Workflow

- 1 Develop 3D Model in Modeling Software
- 2 Establish and Document openBIM Workflows
- 3 Advertise IFC Data Files for Construction
- 4 Enable Construction Teams the Use of IFC Files
- 5 Develop Training & Share Best Practices



Note: Funding for pilot projects may be available via FHWA's ADCMS grant program. Next grant application period opens May 31, 2026, and closes July 31, 2026. <https://www.fhwa.dot.gov/construction/adcms/grants.cfm>

2026-2028 IFC Bridge Pilot Projects: openBIM using TPF Data Standards



- Planning meetings with TPF technical team
- Technical support calls
- Facilitate coordination with vendors, including Bentley, Autodesk, Trimble, and others
- Document lessons learned

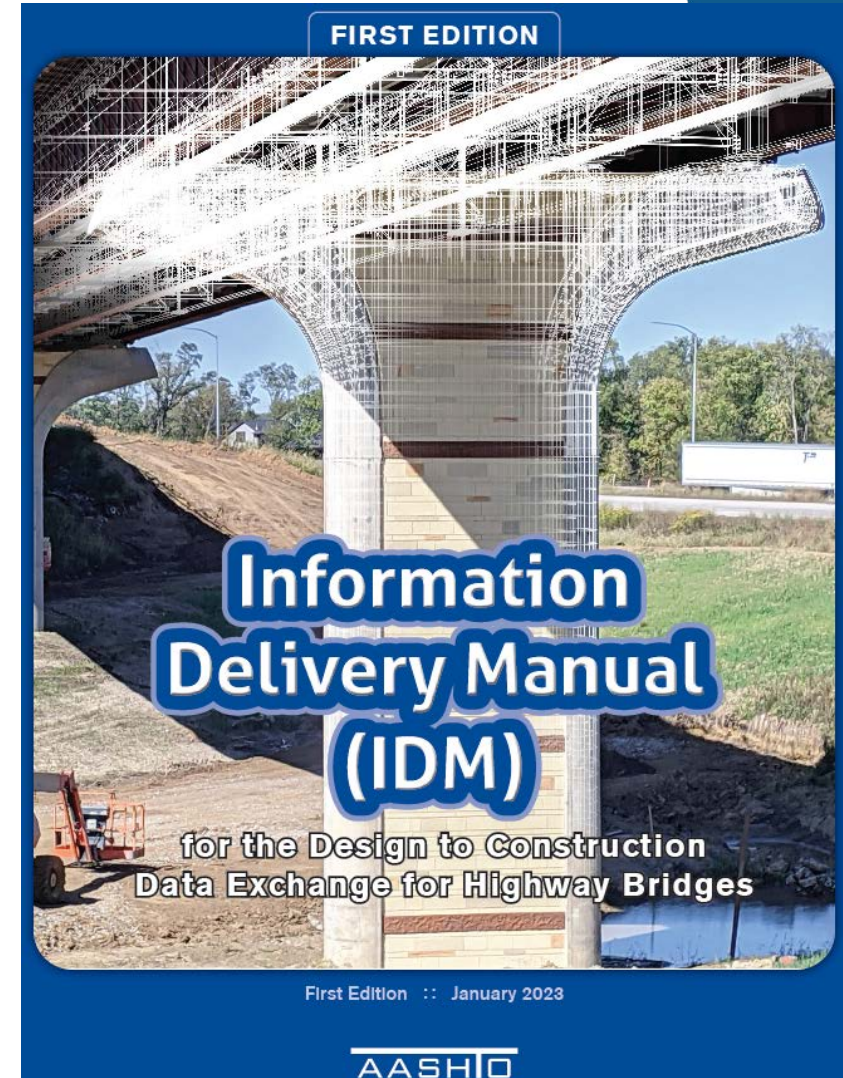


- Annual funding request: \$15,000 per state
- Rolled into current BIM for Bridges TPF
- TPF and non-TPF states welcome
- Contact Iowa DOT if interested: Jim Hauber
James.Hauber@iowadot.us

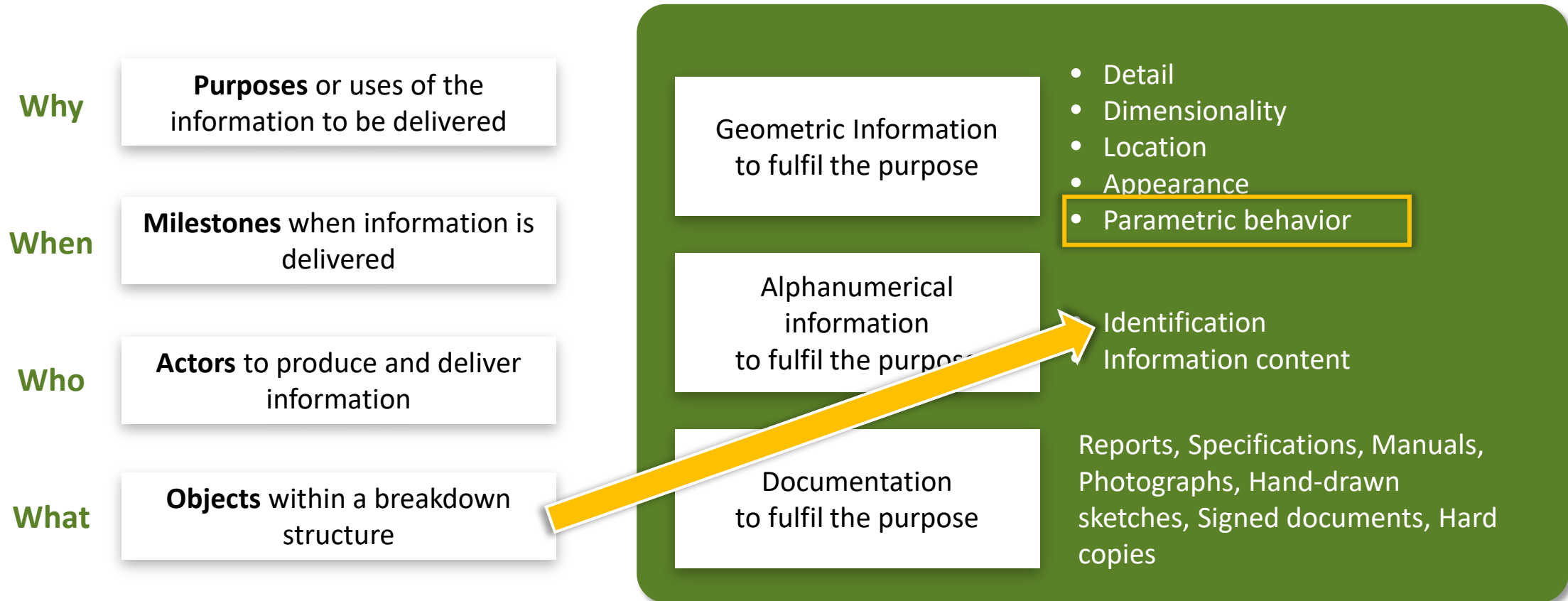
Level of Information Need (LOIN)

Guide Specifications for Level of Information Need (LOIN) for Highway Bridges to Support Project Development with Building Information Modeling (BIM)

- In alignment with ISO
 - 7817-1 (Level of Information Need)
 - 19650 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) — Information management using building information modelling
- A guide to apply the IDM and build models that satisfy the IDS
 - How to develop modeling environments / models that result in models that meet the IDS requirements
 - A guide for agencies to build their standards and for practitioners to interpret the IDM on projects



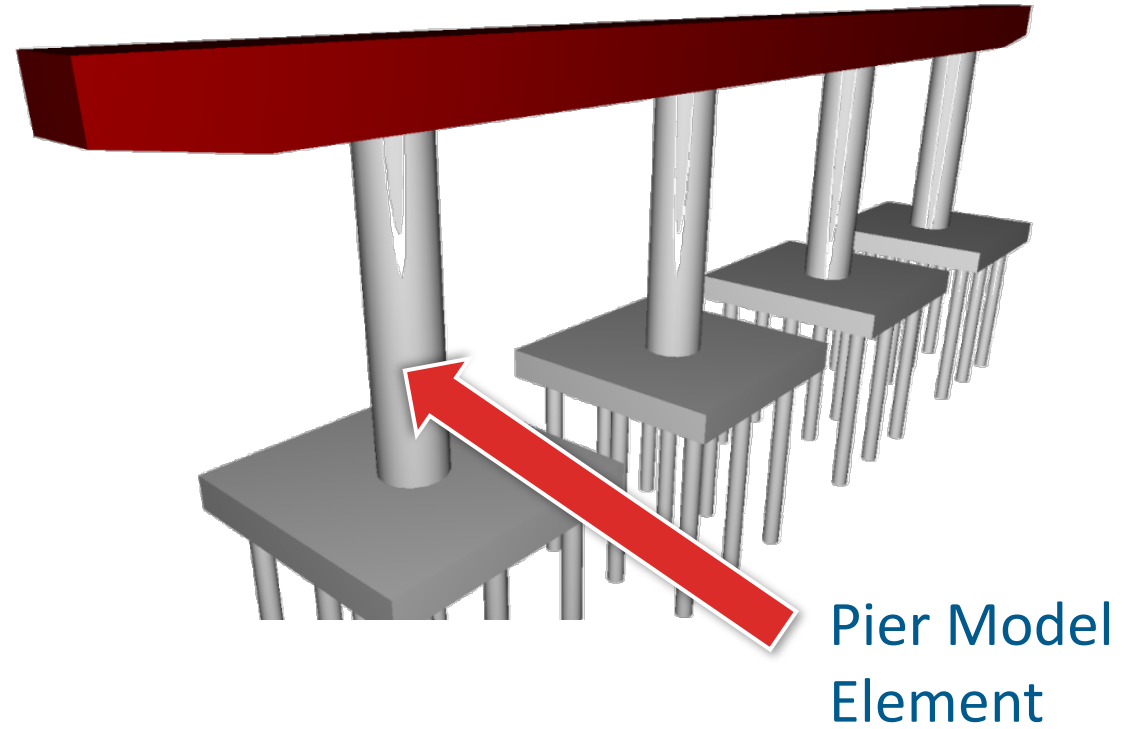
Defining Information per ISO 7817-1



Alphanumeric – Identity



Pier Object



Pier Model Element

Model Element Inventory “Identity” – Pier

Bridge Model
 └ Substructure
 └ Pier

| ITEM NUMBER | DESCRIPTION | UNIT |
|-------------|---|--------|
| 6010001 | STRUCTURAL CONCRETE (CLASS S) (F'C = 2,500) | CU.YD. |
| 6010007 | STRUCTURAL CONCRETE (CLASS S) (F'C = 5,000) | CU.YD. |
| 6010008 | STRUCTURAL CONCRETE (CLASS S) (| CU.YD. |
| 6050001 | REINFORCING STEEL | LSUM |
| 6050002 | REINFORCING STEEL | LB. |

| Object | Model Element | Specification No. | Pay Item No. | IFC Mapping |
|--------|---------------|-------------------|------------------|-------------|
| Piers | Pier | 601, 605 | 6010008, 6050002 | IfcColumn |

Bridge
 └ Substructure
 └ Pier Cap
 └ Piers
 └ Pier 1
 └ Reinforcement

Division 6 Structures
 └ 601 Concrete Structures
 └ 605 Structural Reinforcing

[6.1.3.10 IfcColumn - IFC4.3.2.0 Documentation](#)

**Planned
2026
to
2028**

Open Solicitation

<https://pooledfund.org/Details/Solicitation/1635>

Business Objectives for State DOT's

- *Specify IFC certified software for road/bridge projects*
- *Validate deliverables to enhance project delivery and management quality.*

Desired Outcomes:

- *Discovery phase*
- *IFC 4.3 Implementation Support*
- *IFC Validation Service Enhancements*
- *Global IFC Software Certification Support*
- *Use Case-based Software Certification*
- *Education and Training*

FOR
BRIDGES
AND STRUCTURES

| 13 STATES Committed | |
|------------------------|-----------------|
| 01 Iowa | 09 New York |
| 02 California | 10 Pennsylvania |
| 03 Connecticut | 11 Texas |
| 04 Georgia | 12 Utah |
| 05 Kentucky | 13 Washington |
| 06 Michigan | 14 FHWA |
| 07 Mississippi | 15 Others |
| 08 Nebraska | |



Contact James.Hauber@IowaDOT.us for additional information about participation