



NiceConnect

Make your data work
together, the nice way.

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*A link to our
presentation:*





Think About When...

- Project stakeholders and partners communicate seamlessly.
- Productivity, efficiencies, and sustainability are maximized, and design is optimized.
- Decision making is enhanced as data is available.

Begin with the end in mind!

NiceConnect helps solve problems by streamlining and improving data quality across agencies.



Hard to find data



Too many data silos



Undocumented
data

NiceConnect Overview

The project will accelerate the path for asset and construction project **data sharing & compatibility across the construction management system (CMS)** by providing data modeling, lineage, prioritization, and a standardization and interoperability implementation plan.



Asset Data



But First, The Importance of Asset Data!



Meet Regulations

- Stormwater MS4
- Locates 811
- State Statute



Perform Long-Term Planning

- 20-year Capital Plans
- TAMP (10 year)
- Total Cost of Ownership



Perform Short-Term Planning

- Maintenance Project Planning
- Life Cycle Planning
- Performance Measures



Risk Analysis and Mitigation

- Risk Scoring (Likelihood x Consequence)
- Prioritization
- Resiliency (Verb)



Asset Data



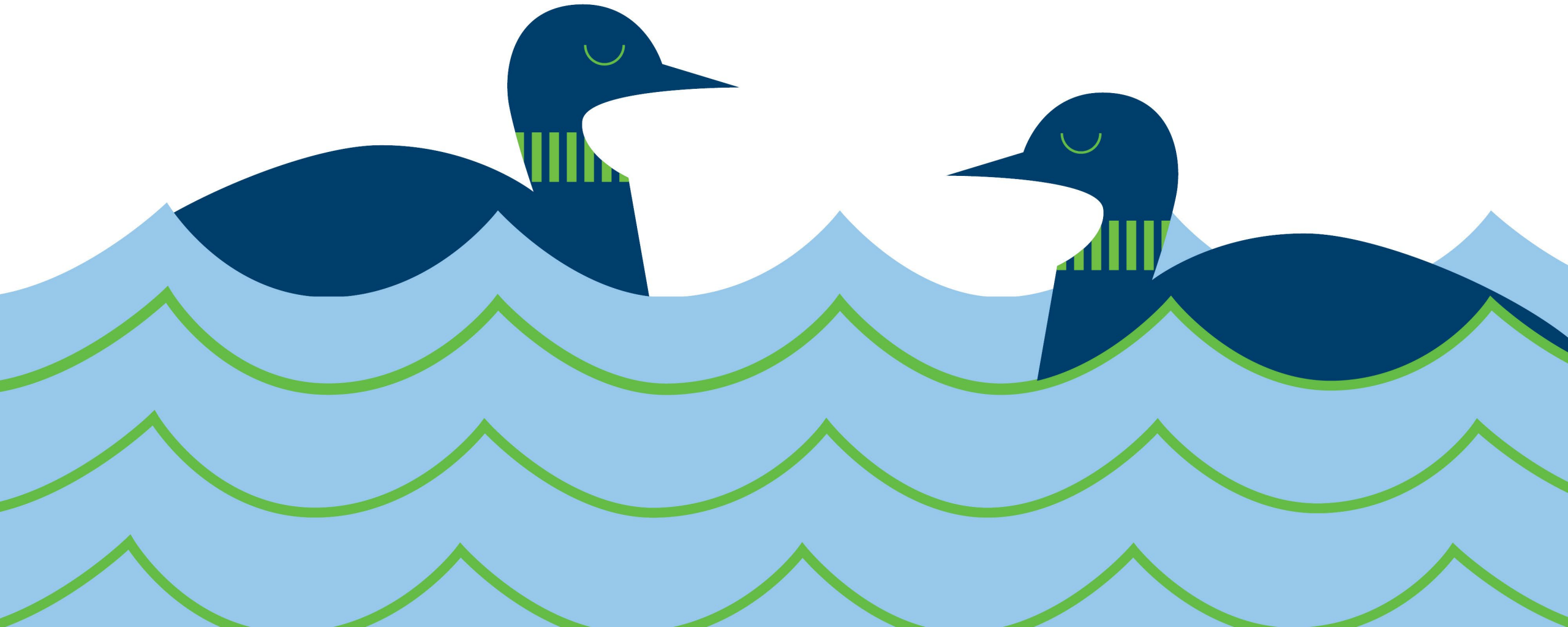
70+

Asset classes



Sections | Pipes | Ponds | Culverts | Stormwater Tunnels | Bridges | Snow
Traps | Snow Fences | Snow Routes | Traffic Barriers | Sidewalks | Earth
Retaining Structures | Slopes | Subgrades | Special Drainage | Noise Walls
Entrance Monuments | Signal Systems | Signal Components | Signal Poles
Lighting Systems | Lighting Units | Mobile Technologies | Intelligent
Transportation Systems | Weigh In Motions | Automatic Traffic Recorders
Sign Supports | Sign Panels | Pavement Markings | Buildings | Pavements

Advanced Digital Construction Management System (ADCMS) Grant Program



Advanced Digital Construction Management System Grant Program

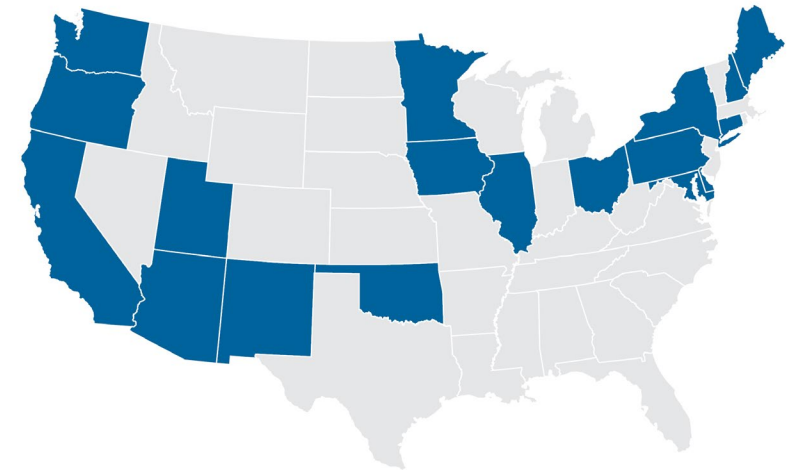
- Accelerating adoption ADCMS that maximizes interoperability.
- Boost productivity, manage complexity, reduce project delays, enhance safety.
- Timely information sharing.
- Deployment of digital management systems (for example, connected machinery).
- Technology training and workforce development.
- Development of guidance for states to capture benefits of ADCMS
- Reduction in the environmental footprint of construction projects.
- Enhance worker and pedestrian safety.

<https://www.fhwa.dot.gov/construction/adcms/grants.cfm>

Go to: Technologies > ADCMS > Grants

Grant Recipients FY 22-24

\$17M Still Available for FY25, FY26



Nice Connect Project Proposal

Engagement, Data, Innovation, Technology, Guidance, Adoption, Communication

Phase 1 Contract

- ✓ Notice to proceed
- ✓ Contract execution

Phase 2 Scope

- ✓ Technical Advisory Committee
- ✓ External Collaboration Committee
- ✓ Communication plan
- ✓ Data/workflow Modeling

Phase 3 Roadmap

- ✓ Data Standardization and Modernization Plan
 - Software Development Scoping
 - Implementation Roadmap and Action Plan
 - Future State Modeling

Phase 4 Implement

- Roles & responsibilities
- Software purchase/Development
- Hardware purchase
- Training

Phase 5 Message

- Case studies
- Reporting
- Communication materials
- Conference abstracts

- ✓ Complete
- In Progress/Ongoing
- Upcoming



What is “Minnesota Nice”?

Minnesota nice is a cultural stereotype applied to the behavior of people from Minnesota, implying residents are **unusually courteous, reserved, and mild-mannered** compared to people from other states.

The phrase also implies polite friendliness, an aversion to open confrontation, a tendency toward understatement, a disinclination to make a direct fuss or stand out, apparent emotional restraint, and self-deprecation.

It is sometimes associated with passive-aggression.

Source: Wikipedia

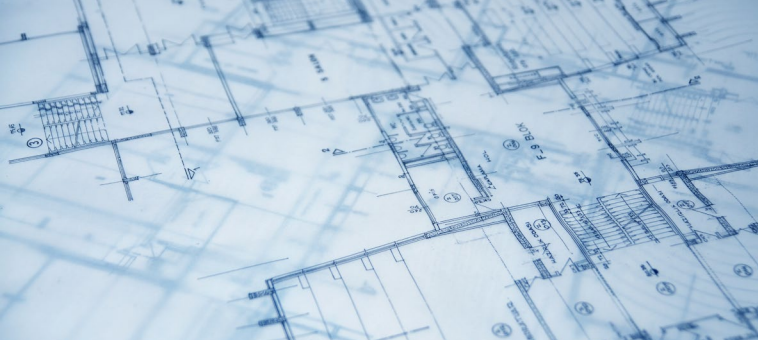


Minneapolis, MN

Who's Involved?



MnDOT Stakeholders



Software key contacts

Data modeling

Planning, scoping, survey, design, preconstruction, construction, materials, maintenance, operations, asset management, project management

Technical Advisory Committee

Project guidance

Planning, design, construction, asset management

Asset Management Steering Committee

Decision-making

Division Directors, Assistant Division Directors, Maintenance Engineer, Statewide Planning, FHWA MN Division



External Stakeholders



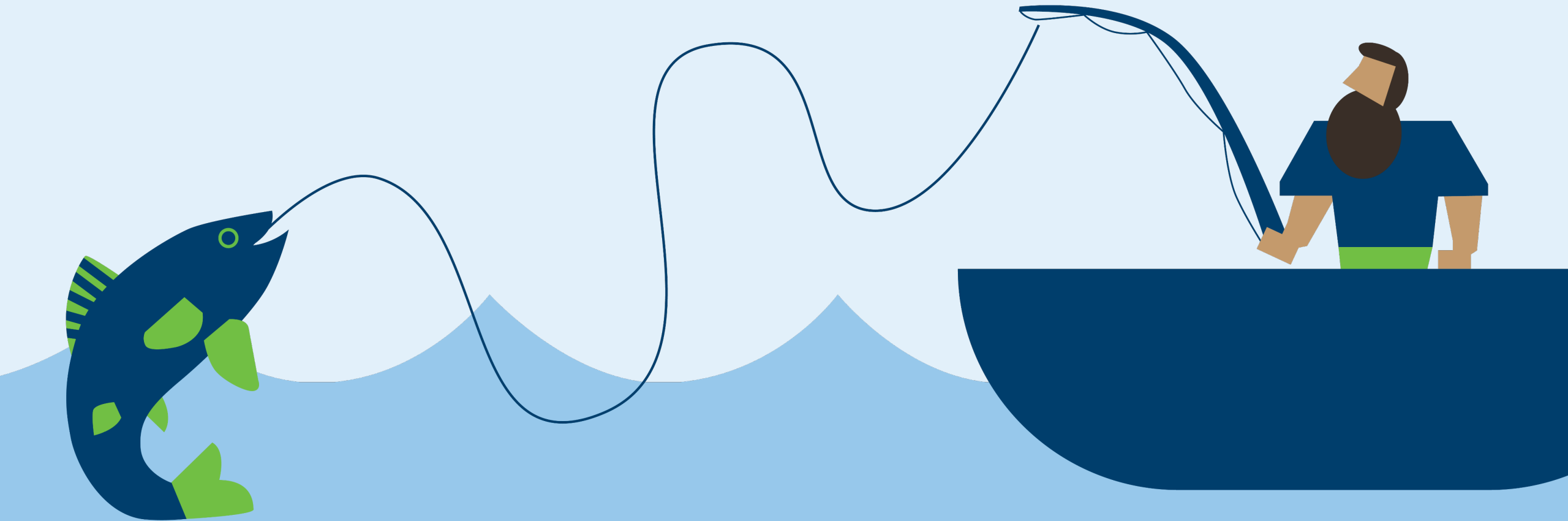
U.S. Department
of Transportation

**Federal Highway
Administration**

External Collaboration Committee
DOTs
Municipalities
Contractors



Data Model



Interactive models developed in VISO Data Flow Diagram

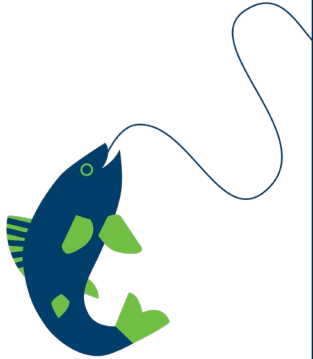
Level 1: workflow across systems

Level 2: workflows and data categories for
each system

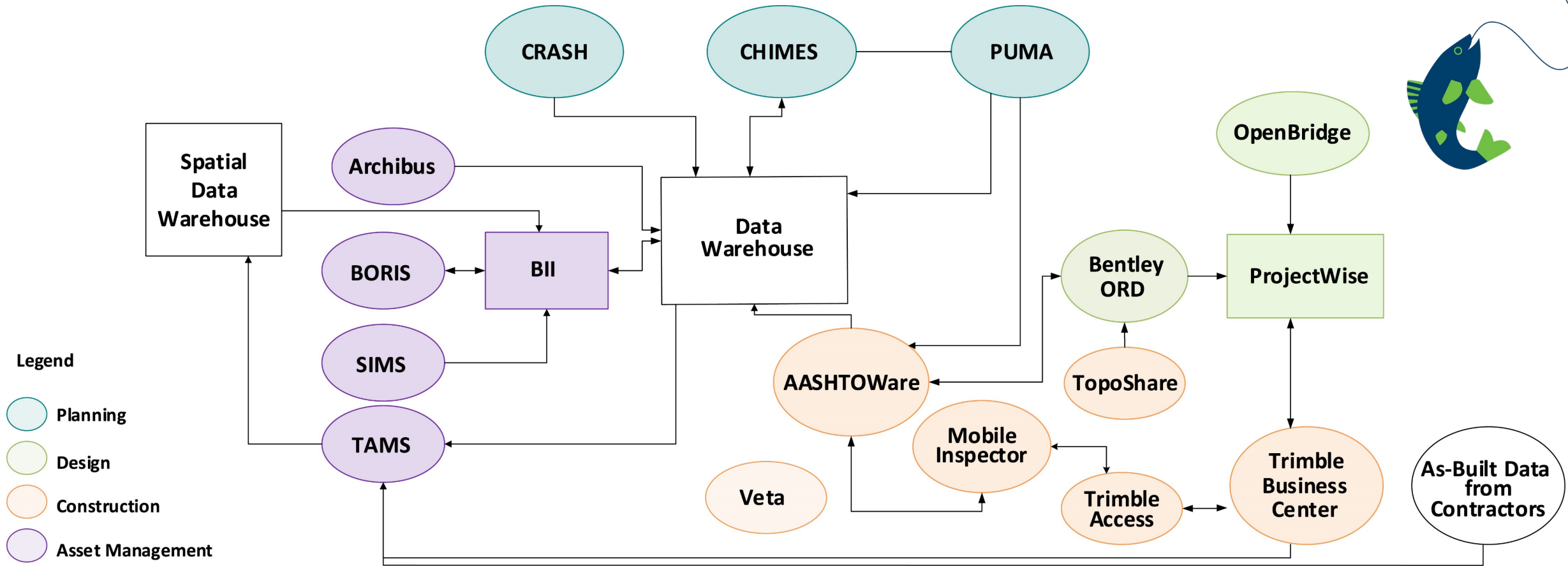
Level 3: data elements being shared
between systems

Data Elements Model

All asset and construction data elements in each system

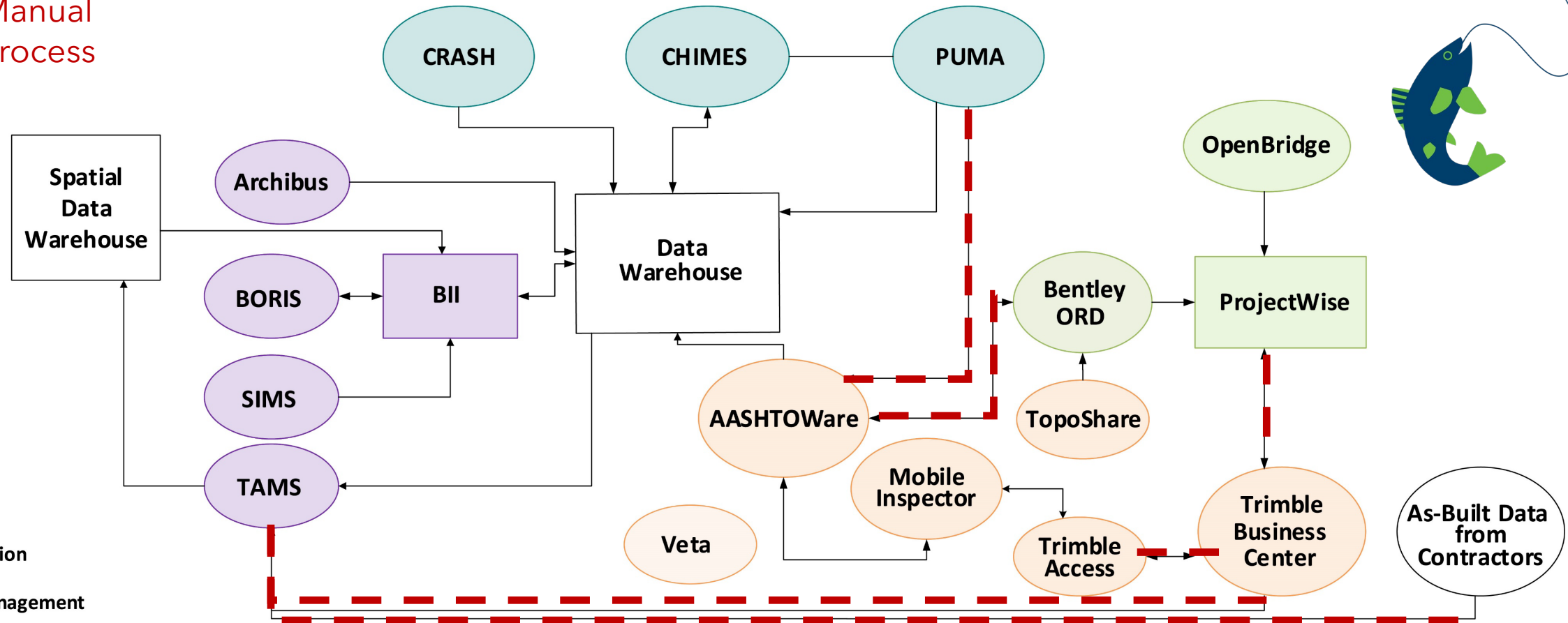


Data Model Level 1: Workflow across systems



Data Flow Diagram Level 1

--- Manual
Process



Interactive models developed in VISO Data Flow Diagram

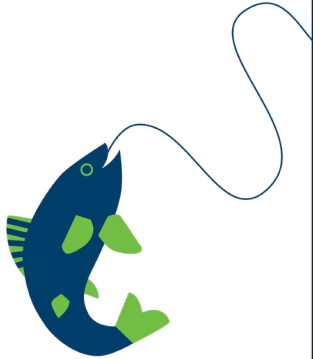
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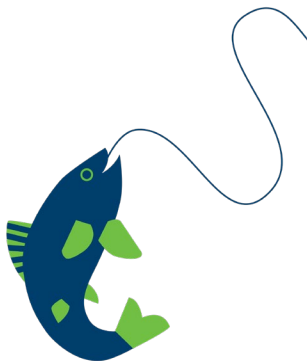
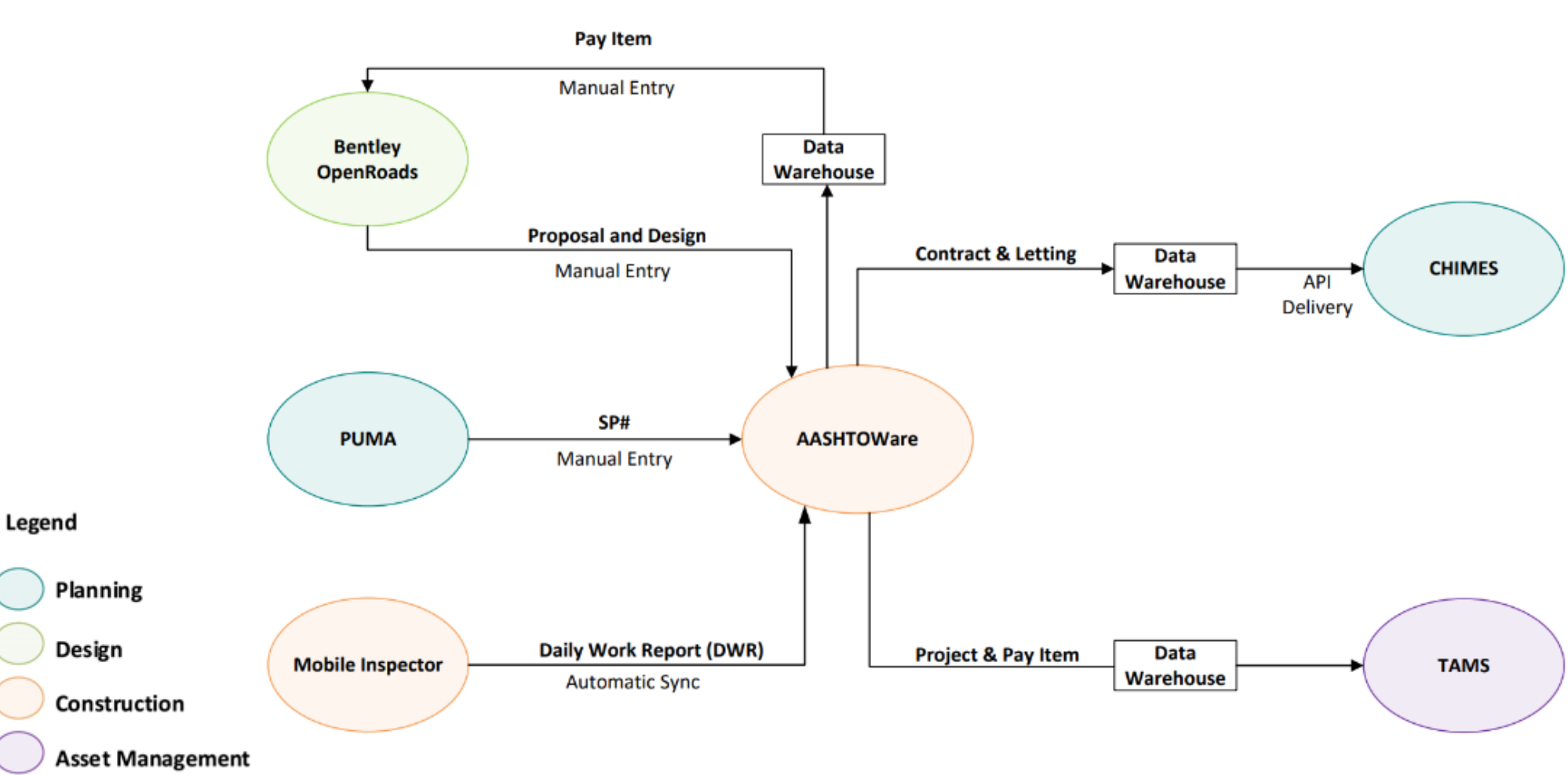
Level 3: data elements being shared
between systems

Data Elements Model

All asset and construction data elements in each system



Data Flow Diagram Level 2



Interactive models developed in VISO Data Flow Diagram

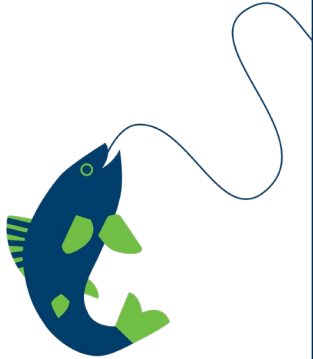
Level 1: workflow across systems

Level 2: workflows and data categories for
each system

Level 3: data elements being shared
between systems

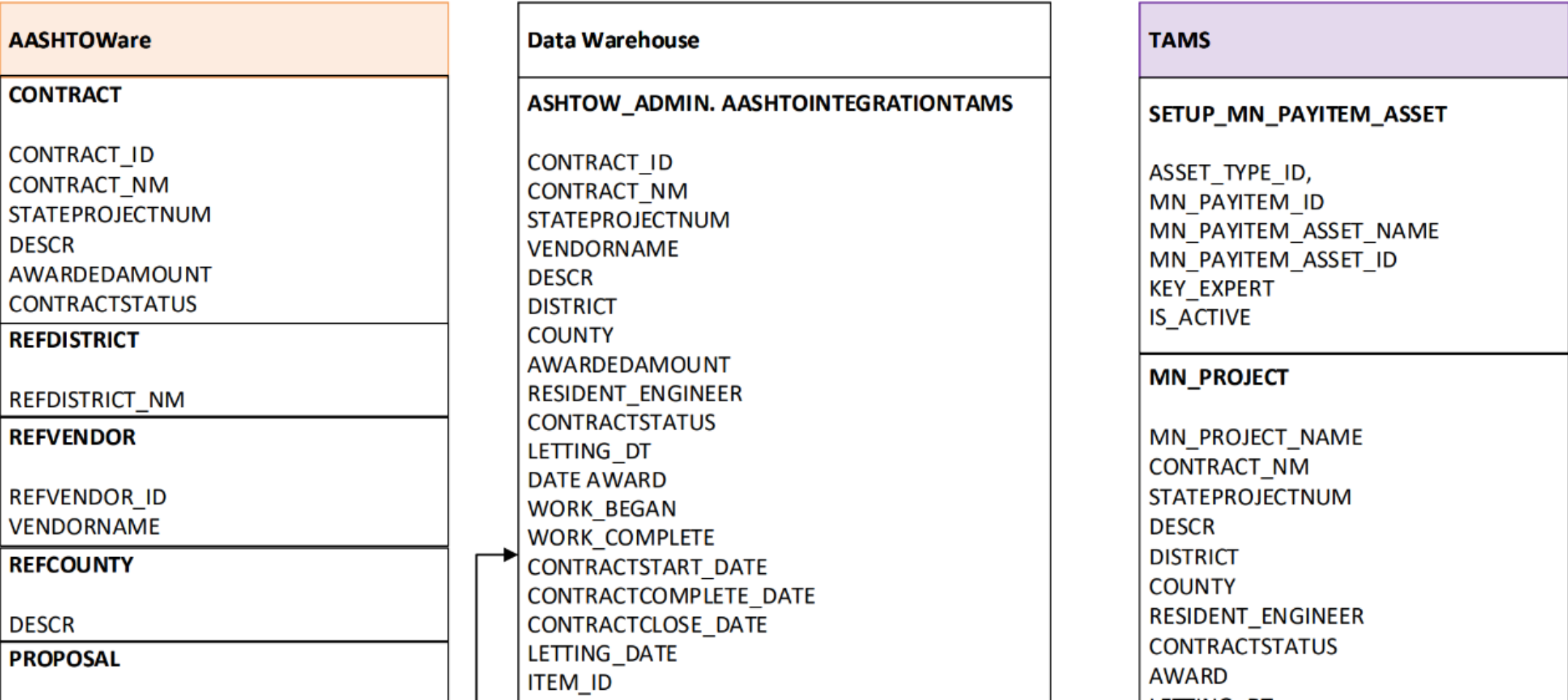
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All asset and construction data elements in each system

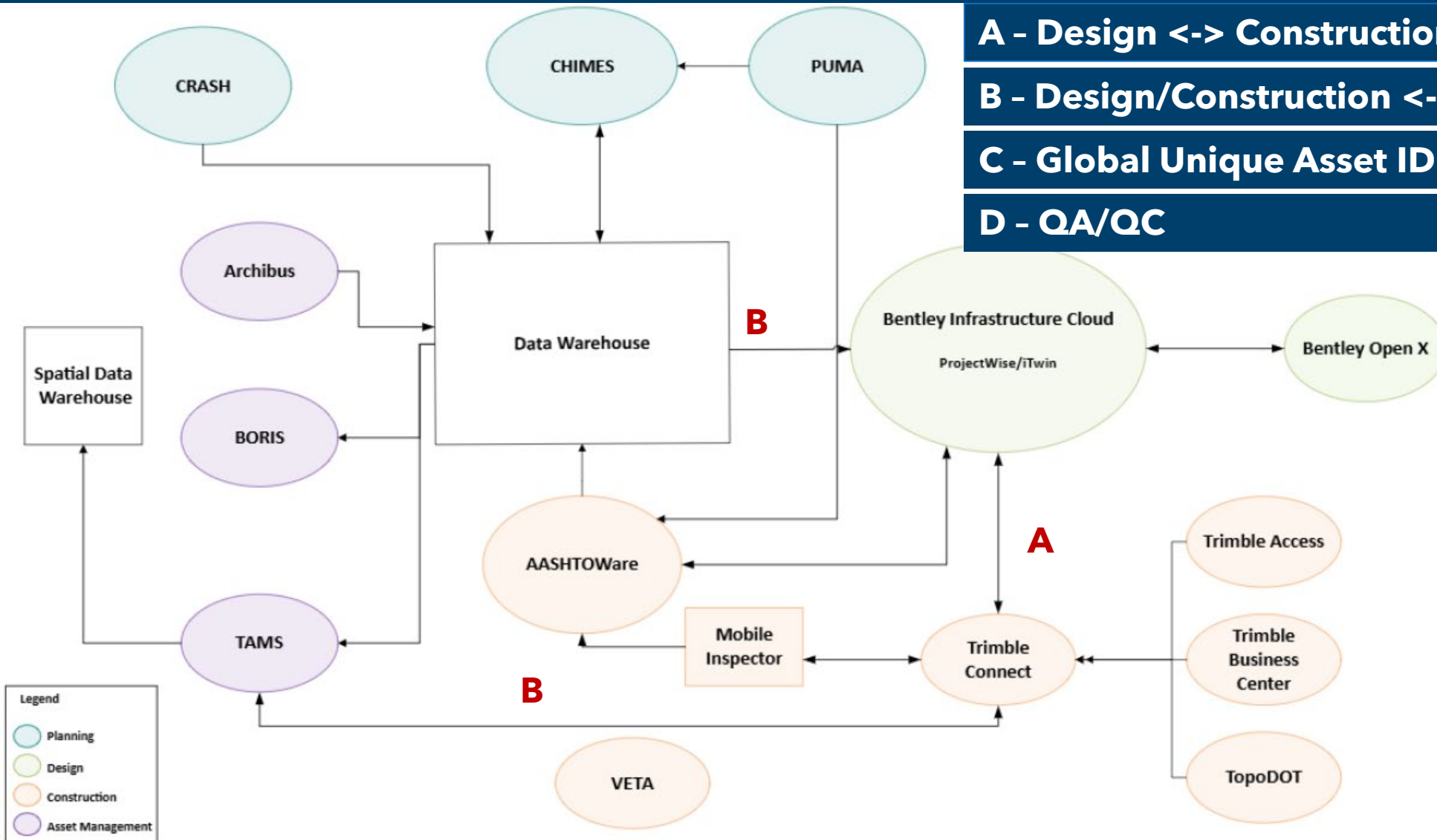


Data Flow Diagram Level 3

AASHTOWare to TAMS Data Flow



Future State/Software Development

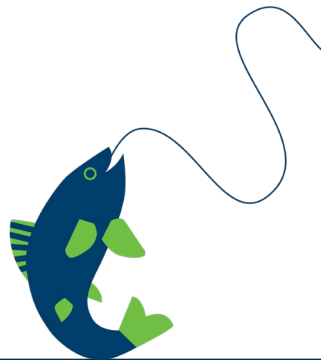


A - Design <-> Construction

B - Design/Construction <-> Asset Management

C - Global Unique Asset ID

D - QA/QC



Data Standardization



International Standardization Organization (ISO) 19650 buildingSMART

- Information Delivery Specifications (IDS)
- Data Dictionary (bsDD)
- Industry Foundation Classes (IFC)



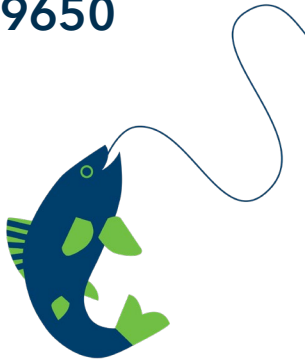
Federal Geographic Data Committee (FGDC)

American Association of State Highway Officials (AASHTO)

- AASHTOWare Solutions: Standards and Guidelines Notebook
- Transportation Asset Management (TAM) Guide
- Joint Subcommittee on Data Standardization (JSTAN)
- AASHTO-ITE Traffic Management Standards



American Society of Civil Engineers (ASCE) 75-22 Asset Data Management Manual (ADMM)



National Efforts on Data Standardization: J-STAN

AASHTO Joint Subcommittee on Data Standards Mission Statement

To champion and coordinate efficient information flow throughout the lifecycle of all assets and related information that comprise our transportation systems.

This will be achieved through open data standards, data governance, schema development, and collaborative public/private partnerships.

Current AASHTO Standards

- Standard drawings
- Design manuals
- Construction spec books
- CADD standards

Urgency AASHTO Govern, Adopt, & Publish

- Data dictionaries
- IDS
- API's
- Web Services

J-STAN Members

- Committee on Design
- Bridges & Structures
- Comm on Construction
- Data Management & Analytics
- Performance Based Planning
- AASHTOWare
- Additional TBD

Grant J-Stan voting authority & provide funding to test, review, and validate standards

National Efforts on Data Standardization: J-STAN

TPF-5(372) BIM for Bridges and Structures Pooled Fund <https://www.bimforbridgesus.com/>
TPF-5(480) BIM for Infrastructure Pooled Fund <https://bimclearinghouse.com/>

buildingSMART USA Road and Bridges <https://www.buildingsmart.us/roads-bridges-committee>

USDD- Current Progress

TPF BIM for Bridge has been the baseline

- NSBA data dictionary
- AASHTO IDM design to construction data exchange for highway bridges

Developing Template and Processes

- Prioritizing domain end users

Support for

- TPF BIM for infrastructure
- ADCMS Grants
- State DOT data dictionaries



Data Standardization and Modernization Plan

Comprehensive Modernization Plan

Provides a thorough strategy for data standardization and modernization.

Adoption of Data Standards

Focuses on adopting consistent data standards to improve interoperability and data quality.

Leveraging Advanced Technology

Utilizing advanced technologies enhances asset management and operational efficiency.



Data Standardization and Modernization Plan

Vision Statement:

MnDOT has modern, standardized, and transparent data systems that enhance collaboration and deliver accurate and actionable information, enabling smarter decisions for all stakeholders and driving innovation and improved use across Minnesota's transportation system.

Data Standardization and Modernization Plan

Modernization

Embracing cloud-native platforms, AI-driven tools, and real-time data collection to replace outdated, fragmented systems with scalable, secure, and integrated solutions.

Standardization

Developing and enforcing consistent data schemas, naming conventions, and metadata standards to facilitate interoperability across platforms and stakeholders.

Transparency

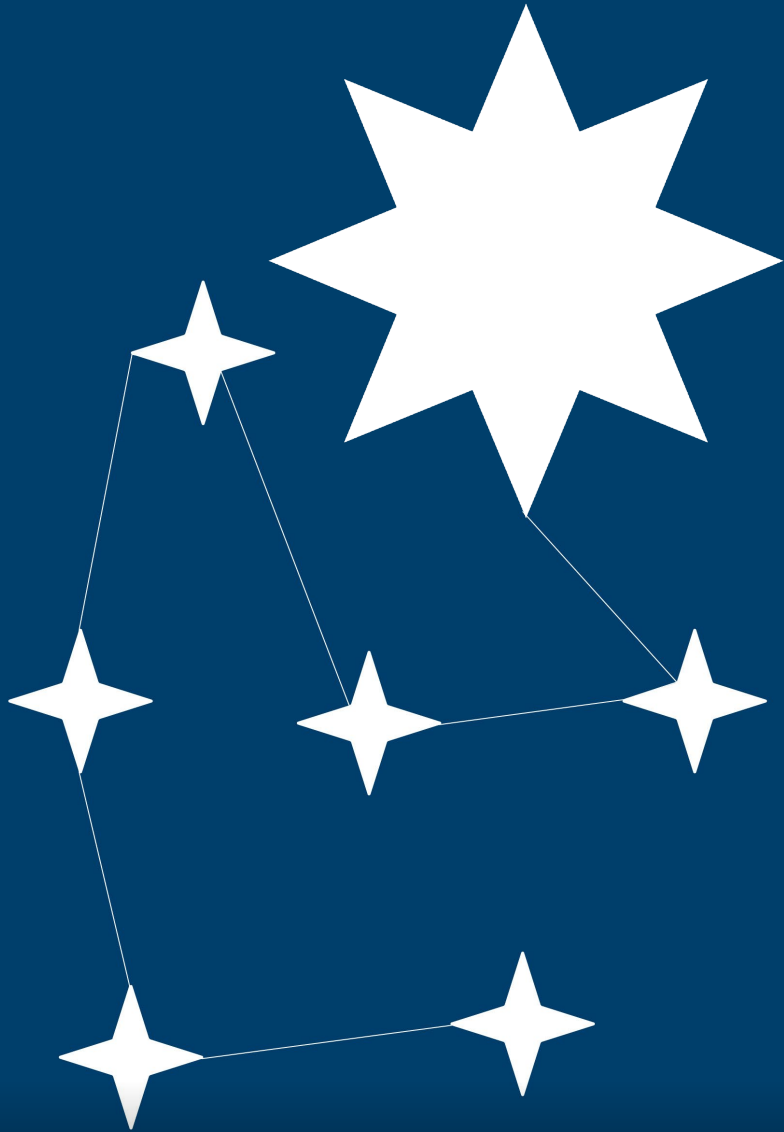
Enhancing data visibility and traceability through centralized repositories, lineage tracking, and open access policies that support accountability and informed decision-making.

Collaboration

Fostering cross-functional and inter-agency partnerships by aligning data practices, sharing tools and templates, and enabling seamless data exchange.

Governance

Establishing clear roles, responsibilities, and policies for data stewardship, quality assurance, and compliance to ensure long-term sustainability and trust in MnDOT's data assets.



Join us

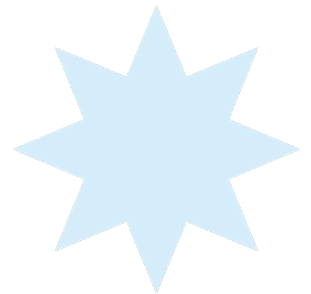
on the journey towards data
sharing and compatibility
across systems

How Can You Get Involved?



Get Involved at your organization

Develop relationships with staff in planning, design, construction, survey, and asset management so everyone knows the importance of asset data.



What is your organization doing to improve interoperability and/or standardization?

Join at menti.com | use code 3839 7225

Mentimeter

What is your organization doing to improve interoperability and/or standardization?



RE

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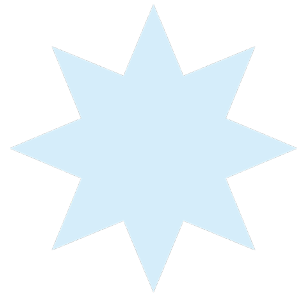
How Can You Get Involved?



Project goals include:

- Increased inter-agency and cross-agency on data sharing and management
- Increased collaboration with national and local partners

Do you want to improve sharing of asset data? We are developing an **External Collaboration Committee**, and we're looking for members



Want to get involved?

Join at menti.com | use code 3839 7225

Mentimeter

Want to get involved? Share your contact information with us!



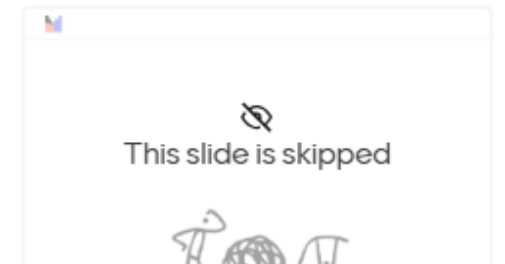
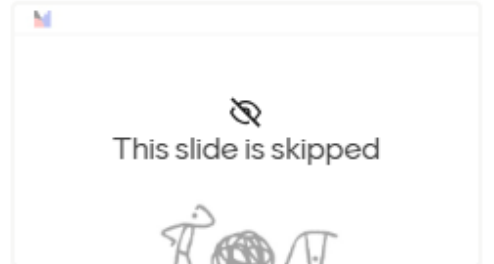
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Questions?

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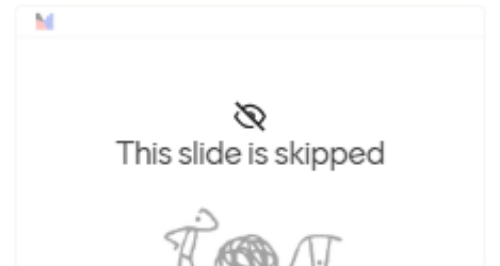
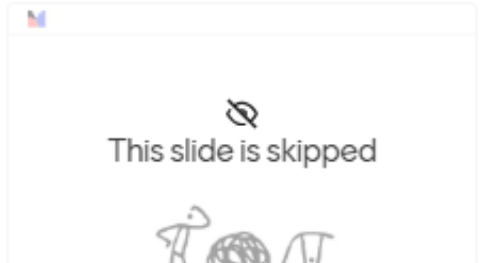


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No questions from the audience!

Incoming questions will show up here so that you can answer them one by one.





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Thank you!

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