Concept Design for an Online Information Source for Major Surface Transportation Projects: A Discussion Paper

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Acknowledgments

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P3 Expert Roundtable
- Leon Corbett, Florida DOT
- Matt Girard, Plenary
- Randy Park, Utah DOT
- Bill Reinhardt, Public Works Financing
- Jim Stark, Indiana DOT

FHWA
- Patrick DeCorla-Souza
- Leslie Lahndt
- Pete Clogston
Discussion Paper Overview
Legislative Context

- To the maximum extent possible, the FAST Act directs FHWA and the Bureau to:
  - Identify procurement thresholds for transportation project cost and schedule increases
  - Measure cost and delivery schedule changes
  - Monitor how performance outcomes vary with different procurement methods
  - Collect project-specific information and make it openly available on the internet

- *This research addresses considerations for a first step*
A Two Tiered Project-Specific Approach to Data Collection

- Tier 1 provides basic descriptive and project outcome information collated from existing sources
- Tier 2 elements would support advanced research and analysis using information not captured in existing repositories
- Based on feedback from industry stakeholders, initial focus on compiling Tier 1 data
- The Tier 1 and 2 elements could be adjusted based on availability and data quality
- Tier 1 -- First increment would test approach, usefulness and burden
- Tier 2 information retained for potential use by other researchers
A Two Tiered Project-Specific Approach to Data Collection

- **Comprehensive Information Source Tier 1**
  - Provides benchmark information on project delivery
  - Uses existing data sources for all major projects
    - FHWA Center for Innovative Finance Support Data
    - FHWA Major Project Database
    - FHWA Highway Performance Monitoring System (HPMS)
    - FHWA National Bridge Inventory (NBI)

- **Comprehensive Information Source Tier 2**
  - Provides detailed data for in-depth analysis
  - Could be assembled from project documentation where available based on Tier 1 experience
Governance and Platform

- Decisions regarding these aspects will:
  - Be critical to functionality
  - Assert role of contributors, data owners, and managers
  - Have implications for sponsors’ commitment and resources needed

- Paper provides basic options and makes recommendations
Discussion Paper Development
Information Source Target Audiences

- State DOTs
- Metropolitan Planning Organizations
- Transportation Procurement Practitioners
- Public Policy Officials
- Academics
- Private Sector Partners
White Paper Organization

Executive Summary

Chapter 1: Online Information Source Structure and Purpose
Chapter 2. Information Source Projects
Chapter 3. Tier 1 Data Requirements and Sources
Chapter 4. Online Information Platform
Chapter 5. Long-Term Maintenance and Enhancement
Chapter 6. Recommendations and Next Steps

Appendix A: FHWA Major Projects
Appendix B: Tier 2 Data Requirements and Potential Sources
White Paper Review Process

- First Draft Delivered January 6, 2017
  - Reviewed by 10 industry and academic experts

- Second Draft Delivered March 3, 2017
  - Subject of a Round Table Reviewed on March 28, 2017 attended by industry experts

- Final Draft Delivered June 6, 2017
  - Reflect Round Table input and final FHWA comments and edit
Information Source Goals

- Understand project procurement outcomes
- Facilitate benchmarking analysis
- Inform decision-making
- Validate decision-making
- Facilitate industry and academic research

*We address these goals by providing data to answer 21 Core Research Questions*
21 Core Research Questions

- Used to identify potential data to be included in the Information Source
- Information Source is an interim step -- provides data to help answer the questions, not the answers
Comparing Outcomes for P3 and Non-P3 Procurements

- Cost performance
- Risk mitigation
- Scope evolution for P3 and non-P3 delivery
- Schedule certainty
- Procurement and oversite requirements
- Life cycle costs
- Financing costs
Comparing Outcomes for P3 and Non-P3 Procurements (cont’d)

- Design and construction quality
- Maintenance quality
- Service quality
- Local subcontractor and disadvantaged business involvement
- Labor rates
Information Source Projects
FHWA Major Projects

- Cost of $500 million or more using Federal funding
- 104 current projects
- 33 completed projects
- A variety of procurement models
  - Design-bid-build (DBB)
  - Design-build (DB)
  - Design-build-finance-operate-maintain (DBFOM) concession
Tier 1 Data
Tier 1 Data

- Higher level benchmark library
- Intended for decision-making assistance and project performance review
- To be assembled for all FHWA Major Projects
# Relational Database Structure

## Descriptive Parameters

<table>
<thead>
<tr>
<th>Project Information</th>
<th>Legislative Information</th>
<th>Agency Policy &amp; Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name</td>
<td>Design-Build Authority</td>
<td>Dedicated PPP Team</td>
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<tr>
<td>Location</td>
<td>P3 Authority</td>
<td>Number of employees on PPP Team</td>
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<td>Cost</td>
<td>Sunset Provisions</td>
<td>Number of Closed P3 Procurements</td>
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<td>Procurement Model</td>
<td>Toll Conversions</td>
<td>Number of Active P3 Procurements</td>
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<td>Concession Length</td>
<td>Concession Term Limits</td>
<td>Value For Money (VFM) Analysis</td>
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<tr>
<td>Project Type</td>
<td>Non-Compete Clauses</td>
<td>Risk Transfer Analysis</td>
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<tr>
<td>Length</td>
<td>Hot Operations</td>
<td>Financial Feasibility Study</td>
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<td>Lanes</td>
<td>Legislative Approvals</td>
<td>Internal PPP Advisory Committee</td>
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<tr>
<td>Lane Miles</td>
<td>PI Advisory Body</td>
<td>External PPP Advisory Committee</td>
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<td>Interchanges</td>
<td>Local Revenue Measure</td>
<td>Financial Self-Sufficiency Required</td>
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<td>Toll Status</td>
<td>Public Subsidies</td>
<td>Local Revenue Measure</td>
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<td>Setting</td>
<td>Revenue Sharing</td>
<td>Public Subsidies</td>
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<td>Topography</td>
<td>Tolling New Highway Capacity</td>
<td>Revenue Sharing</td>
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<td>Utilization</td>
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## Project Performance Data

<table>
<thead>
<tr>
<th>Development Phase</th>
<th>Procurement Phase</th>
<th>Implementation Phase</th>
<th>Operations &amp; Maintenance</th>
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<tbody>
<tr>
<td>NEPA</td>
<td>Location</td>
<td>Design and Construction Elements</td>
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<tr>
<td>Initial Value For Money (VFM) Analysis</td>
<td>Level of Project Design</td>
<td>User Benefits</td>
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<tr>
<td>Risk Assessment</td>
<td>Request for Information (RFI)</td>
<td>Service Quality</td>
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<td>Benefit Cost Analysis</td>
<td>Industry Forum</td>
<td>Financial Performance</td>
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<td>Financial Feasibility Analysis</td>
<td>Request for Qualifications</td>
<td>Defaults</td>
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<td>Environmental Review</td>
<td>Request for Proposals (RFP)</td>
<td>Bankruptcies</td>
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<td>Traffic</td>
<td>Project Sponsor Staffing</td>
<td>Renegotiations</td>
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<td>Safety</td>
<td>Alternative Technical Concepts (ATCs)</td>
<td>Financial Restructurings</td>
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<tr>
<td>Costs</td>
<td>Commercial Close</td>
<td>Sources of Finance</td>
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</tbody>
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U.S. Department of Transportation  
Federal Highway Administration  
OFFICE OF INNOVATIVE PROGRAM DELIVERY
Tier 1 Data

- Can be assembled from EXISTING repositories
  - FHWA Center for Innovative Finance Support Data
  - FHWA Major Projects Database
  - FHWA Highway Performance Monitoring System
  - FHWA National Bridge Inventory
  - Electronic Municipal Market Access (EMMA) Website
  - State DOT project delivery websites
  - National Conference of State Legislatures
Questions
Online Information Platform
Online Information Platform

- **Purpose:**
  - Compare project performance outcomes for different delivery methods

- **Content:**
  - Data collated from multiple sources over time
  - Alphanumeric information, documents, maps, images, URLs

- **Relational database structure:**
  - Use non-proprietary software and coding practices
  - Avoid third party add-ons
  - Streamline ongoing maintenance costs
Online Information Platform

- Support the following functions
  - Search Filters
  - Display Tables
  - Sortable Columns
  - Reporting
  - Data Upload and Export
  - Online Help and Tool Tips

- The Information Source’s governing structure will influence its design
Data Management Questions

- Do the data already exist?
- How will the data be obtained or collected?
- What is the schedule and budget for data collection?
- How will the data be checked and certified?
- Can the data be made publicly available?
- How will the data be stored, accessed, and protected?
Data Management Plan Options

- Distributed Responsibility
- Total Ownership
- Hybrid Approach
Distributed Responsibility

Information Source Owner

- Responsible for data governance
- Responsible for IT enablement including online platform and technology resources
- Responsible for managing user community

Data Providers

- Understand data standards, formats, definitions
- Ensure data quality
- Upload data to information source

End user

- Data discovery, analysis
- Feedback
Total Ownership

Information Source Owner

- Responsible for data governance
- Responsible for IT enablement
- Responsible for data collection and data quality
- Responsible for managing user community

End user

- Data discovery, analysis
- Feedback
Hybrid

| Information Source Owner | • Responsible for data governance  
|                          | • Responsible for IT enablement  
|                          | • Responsible for managing user community |
| Data Providers           | • Provide raw data |
| Data Liaisons            | • Understand data standards and information source requirements  
|                          | • Work with data providers to collect data  
|                          | • Ensure data quality via review board  
|                          | • Upload data to information source |
| End user                 | • Data discovery, analysis  
|                          | • Feedback |
Recommendations and Next Steps
Recommendations

- The information source would be most useful in informing higher-level public policy decisions
- Focus on compiling Tier 1 information
- Conduct a pilot as a proof of concept
  - Confirm what information is available and the level of effort to collect it
Contact Information

Website:
https://www.fhwa.dot.gov/ipd/p3/

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Download Discussion Paper:
Questions