

STATE OF WASHINGTON | JOINT TRANSPORTATION COMMITTEE

Review of WSDOT's Implementation of Design-Build Project Delivery

November 10, 2016 | Legislative Briefing



Sid Scott, P.E.

Introductions

Study Overview/ DB Background

Final Reporting

Evaluation/Findings

Recommendations

Implementation

- Task 1: Basic overview of DB compared to traditional low bid delivery
- Task 2: Identify best practices for DB based on a interviews with 11 DOT DB programs and Design Build Institute of America (DBIA) best practices
- Task 3: Examine WSDOT implementation of DB delivery to date
- Task 4: Evaluate whether WSDOT's use of DB can be improved (maximizing effectiveness and efficiency) & make recommendations for DB program improvement
- Task 5: Suggest strategies for WSDOT and industry to adopt study recommendations
- Task 6: Keep legislators and other stakeholders apprized on findings and recommendations

- Bob Adams, Atkinson Construction, representing Washington Association of General Contractors (AGC)
- John Ferguson, CH2M Hill, representing American Council of Engineering Companies of Washington (ACEC)
- Vince Oliveri, Legislative Director of Local 17 for State Employees, representing Professional and Technical Employees, Local 17
- Linea Laird, WSDOT Chief Engineer and Assistant Secretary for Engineering and Regional Operations, representing WSDOT
- Michael Loulakis, Capital Projects Strategies, Inc., national design-build expert and member of consultant team, Design Build Institute of America
- Gregory Henk, Henk Associates, national design-build expert and member of consultant team

Survey of DOT/Industry Best Practices

Owners

- 11 state transportation agencies in the United States and 1 agency in Canada, selected based on:
 - Maturity of DB program
 - Geographic location
 - Differences in legislation and design-build implementation strategies

Industry

- DB Contractors (subcontractors)
- Design firms

- Design Build Institute of America (DBIA) “Design-Build Done Right” best practices for transportation projects

Interviewed agencies classified by Size Range of DB projects

Agency	First Design-Build Project	Total Approximate Number of Design-Build Projects	Size Range of Projects
Colorado	1995	20	\$3M to \$300M
Florida	1987	500+	\$<0.5M to \$200M
Maryland	1998	35	\$20M to \$500M
Minnesota	1996	33	\$1M to \$200M
Missouri	2005	<10	\$18M to \$535M
North Carolina	1999	111	\$2M to \$460M
Ohio	1995	247	<\$0.5M to \$430M
Oregon	1999	16	\$2M to \$130M
Texas	2003	15	\$80M to \$1B+
Utah	1999	50	\$30M to \$1B+
Virginia	2001	78	\$0.5M to \$100M+
Ontario Ministry of Transportation	1998	60	\$5M to \$55M

Project	Region	Final Contract Value	Sub. Completion Year
US 2/Rice Road Intersection Safety Improvement	Northwest	\$2,410,519	2012
I-5 Skagit River Bridge Permanent Bridge Replacement	Northwest	\$7,139,139-	2013
SR 167 Puyallup River Bridge Bridge Replacement Project	Olympic	\$27,331,648	2015
I-5 et al., Active Traffic Management System	Urban Corridors (NW)	\$37,021,000	2011
I-405/I-5 to SR 169 Stage 2 Widening and SR 515 Interchange Project	Northwest	\$84, 650,000	2011
SR 520 Eastside Transit and HOV Project	Urban Corridors (NW)	\$364,131,001	2015

- We reached out to a number of designers and builders with WSDOT and local agency DB experience to provide additional input on WSDOT'S use of Design-Build
 - AGC Representatives
 - Max J. Kuney Co
 - KLB Construction
 - Novito Construction
 - Lakeside Industries
 - Flatiron
 - ACEC Reps
 - SDA Engineers
 - ARUP Engineers
 - KPFF Engineers
 - Jacobs

Element	Best Practices	WSDOT Practices	Alignment	Gaps
Organization & Staffing				
Training				
Programmatic Policies and Procedures				
Project Development				
Procurement				
Project Delivery				
Performance				
Budgeting				
Project Execution				

Executive Summary

- What is WSDOT doing well (i.e. alignment with best practices?)
- How has WSDOT's program improved over time?
- What aspects of WSDOT's DB Program could be improved?
- Summary of Recommendations and Implementation Strategies

Report Structure

Part 1 – Design Build Overview

Part 2 – Assessment of WSDOT Program

Governance Element:

Leading Practices → Observations → Gap Analysis → Recommendations

Part 3 – Implementation Plan

Implementation Timeline

- **What is WSDOT doing well (i.e. alignment with best practices?)**
 1. Industry Outreach
 2. Commitment of Senior leadership
 3. Contractual Risk Allocation
 4. Shortlisting
 5. One-on-one Meetings
 6. Stipends
 7. Alternative Technical Concepts

- **How has WSDOT's program improved over time?**
 1. Procedural Guidance
 2. DB Template Documents
 3. Project Delivery Selection Guidance
 4. Use of DB on Small Projects
 5. DB Experience in Puget Sound area

- **What areas of WSDOT's Program are in need of improvement**
 - A. Staffing and Career Development
 - B. Training
 - C. Programmatic Documents (policies and procedures)
 - D. Project Development
 - E. Project Delivery and Procurement
 - F. Performance Assessment/Feedback
 - G. Budgeting
 - H. Project Execution

Element	Recommended WSDOT Improvements
<i>A. Staffing & Career Development</i>	<ol style="list-style-type: none">1. Increase HQ DB staff2. Consider DB credentials and experience as part of career development/retention plans3. Designate technical experts within DOT to support DB teams4. More widely disperse DB skills and expertise across the Regions5. Optimize use of consultants

Element	Recommended WSDOT Improvements
<i>B. Training</i>	<ol style="list-style-type: none"><li>1. Develop formal statewide training materials (Basics & Advanced Topics)<li>2. Conduct basic and advanced DB Training<li>3. Conduct Project-specific workshops for large/complex projects<li>4. Expand mentoring, shadowing, and peer-to-peer exchanges & DB exchanges with other agencies, and attendance at national DB forums

Element	Recommended WSDOT Improvements
<i>C. Policies and Programmatic Documents</i>	<ol style="list-style-type: none">1. Finalize standard procurement and contracting templates, while considering:<ol style="list-style-type: none">a. Introducing more flexibilityb. Incorporating performance requirements2. Develop and issue updated DB manual3. Develop and implement an internal and external rollout strategy for programmatic documents & training

Element	Recommended WSDOT Improvements
<i>D. Project Development</i>	<ol style="list-style-type: none"><li>1. Implement Practical Design for DB projects including scoping and project development phases)<li>2. Consider market conditions and availability of DOT resources when determining the scope and size of contract packages<li>3. Develop and implement performance specifications for appropriate projects<li>4. Perform appropriate levels of front-end investigation

Element	Recommended WSDOT Improvements
<i>E. Project Delivery and Procurement</i>	<ol style="list-style-type: none">1. Streamline procurement process for small DB projects (i.e. one step process)2. Experiment with alternative DB delivery and procurement methods (e.g., progressive, bundling, low bid)3. Refine evaluation criteria<ol style="list-style-type: none">1. Assign greater weight to qualifications/technical evaluation criteria when seeking innovation2. Include prior working relationship of DB team as evaluation criterion

Element	Recommended WSDOT Improvements
<i>F. Performance Assessments</i>	<ol style="list-style-type: none"><li>1. Establish a database of DB lessons-learned<li>2. Establish a database of ATCs<li>3. Conduct a systematic comparison of DB, design-bid-build, and GC/CM performance and refine manual and PDMSG as appropriate

Element	Recommended WSDOT Improvements
<i>G. Budgeting/ Estimating for DB</i>	<ol style="list-style-type: none"><li>1. Work with legislative staff to consider adjustments in funding appropriations for DB projects. Based on discussions, propose changes to be formalized in an official budget request<li>2. Examine if Engineer Estimates are resulting in an over-allocation of funds and refine estimating process as necessary

Element	Recommended WSDOT Improvements
<i>H. Project Execution for DB</i>	<ol style="list-style-type: none"><li>1. Dedicate experienced staff to design oversight function and develop standard design review templates<li>2. Dedicate staff as necessary to the full project-lifecycle (design and construction phases)<li>3. Optimize quality management for smaller projects

Approach to Implementation

- Identify steps WSDOT needs to take to effectively implement the recommended changes concerning staff organization, training, guidance, etc.
- Consider timing, cost, benefit, and difficulty for WSDOT to adopt the recommended changes
- Develop preliminary timeline for implementing recommended improvements

Action

WSDOT = Internal WSDOT policy development or initiative

Legislative = Legislative or policy change needed

Timing

Short-term (discrete) = 1 – 6 months

Intermediate Term = 6 – 18 months

Long-term (ongoing) = > 18 months

Cost

\$ = 0 – 100K

\$\$ = 100K – 500K

\$\$\$ = > 500K

Difficulty

L – low, M – Medium, H – High

Cost/Difficulty

- Three recommendations will involve more significant costs for implementation and difficulty
 - More widely disperse DB skills and expertise across Regions
 - Develop DB credentials/experience as part of overall career development and compensation
 - Performance monitoring (i.e. develop and maintain database and lessons-learned for comparison of DB with other delivery methods)

Benefits

- ① Reduce errors and conflicts
- ② Improve DB program consistency
- ③ Improve efficiency of DB execution
- ④ Increase and retain staff competency
- ⑤ Accelerate project delivery
- ⑥ Save project cost
- ⑦ Reduce change orders/cost growth
- ⑨ Increase competition
- ⑩ Improved budgeting
- ⑪ Improve quality/evaluation of proposals
- ⑫ Improve communication & collaboration

Implementation Roadmap (handout)

Timing/Status

- Staffing (underway) ➤ w/in 6 months
- Policies and Procedures (underway) ➤ w/in 9 months
 - Finalize standard templates ■ w/in 6 months
 - Develop/issue updated manual ■ w/in 9 months
- Training (develop/deliver) ➤ 2 – 3 years
 - Develop training ■ 14 months
 - Rollout strategy ■ 2 months
 - Conduct training ■ 2-3 years

Timing/Status

- Project Delivery & Procurement ➤ Intermediate
 - Streamline procurement
 - 15 – 20 months
 - Refine evaluation criteria
 - 15 – 19 months
 - Alternative delivery
 - 15 – 20 months
- Performance Monitoring ➤ Short & Long-term
 - Database development
 - 3 – 6 months
 - Maintenance and ongoing monitoring
 - Long-term

- There is a strong motivation to improve WSDOT DB program from all perspectives
 - All WSDOT staff interviewed were candid and supportive (strong motivation to improve program)
 - Similarly, industry provided valuable perspectives and recommendations
- Expert panel worked well provided excellent input and opinions re recommendations and implementation strategies
- JTC effectively managed the study, and provided great comments, and support

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Best Practices in DB Delivery

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Thank you

Questions?

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