Project Delivery and Innovative Practices Study of WSDOT

Final Report

FOR: Washington State Joint Transportation Committee

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HKA Global Inc.
One Commerce Square
1735 Market Street
Suite 1100
Philadelphia, PA 19103

List of Recurring Abbreviations

ATC	Alternative Technical Concept
DBB	Design-Bid-Build
DB	Design-Build
CEVP	Cost Estimate Validation Process
CRA	Cost Risk Assessment
DOT	Department of Transportation
EE	Engineer’s Estimate
GMP	Guaranteed Maximum Price
MACC	Maximum Allowable Construction Cost
PDB	Progressive Design-Build
PDM	Project Delivery Method
PDMSG	Project Delivery Method Selection Guidance
RFQ	Request for Qualifications
RFP	Request for Proposals

Executive Summary

Study Overview

Objectives

The Joint Transportation Committee (JTC) of the Washington State Legislature directed a study in ESHB 2134, Section 204 (See Appendix A for full proviso) to:

- Review Washington State Department of Transportation's (WSDOT) current project delivery practices
- Analyze alternative delivery methods and innovative practices in transportation project delivery (including specific Washington State specific possibilities reviewed as case studies, see Appendix B)
- Conduct stakeholder outreach; including industry partners, WSDOT, and other public owners in Washington State and throughout the US
- Recommend changes in project delivery practices that could reduce costs, improve competition, shorten the delivery schedule, or make progress in a combination of all three of these factors, as appropriate to current policies, practices, and statutory requirements.

Key Tasks

To accomplish the objectives, the study includes the following integrated tasks:

Task 1: Project Delivery Methods – Background, Overview & Examples

Task 2: Engagement with WSDOT & Industry Stakeholders

Task 3: Document Issues, Opportunities & Suggested Improvements

Task 4: Recommendations: Improvements to Existing Project Delivery Practices, Other Innovative Approaches, and Washington-Specific Opportunities

Task 5: Coordinate with the Staff Technical Team

Task 6: Presentations

Task 7: Preliminary and Final Reports

Consultant Team

Sid Scott, P.E., HKA

Linda Konrath, HKA

Robynne Thaxton, Progressive DB Consulting LLC

Michael Loulakis, Capital Project Strategies, LLC

Staff Technical Team

Art McCluskey, WSDOT Design-Build Program Manager, Construction Division

Joanna Lowrey, WSDOT Assistant State Design Engineer

Nina Jones, WSDOT Assistant Director of Business Diversity and Inclusion

Travis Snell, WSDOT Legislative Relations

Maria Thomas, Budget Advisor to the Governor, OFM

Danny Masterson and Brandon Popovac, Senate Transportation Committee

Chris Thomas, House Transportation Committee

Hannah McCarty, Senate Democratic Caucus

Martin Presley, Senate Republican Caucus

Leo Othón, House Democratic Caucus

Dana Quam, House Republican Caucus

Rachel Dean, Policy Analyst, JTC

Alyson Cummings, JTC project manager

Oversight and Direction

The study was guided by a Staff Technical Team (see detailed membership noted in box above), including WSDOT, Office of Financial Management (OFM), House and Senate Transportation Committee, House and Senate Caucus, and JTC staff. The study was a collaborative effort that included thorough input, feedback, and perspectives shared by the STT and other WSDOT staff with the consultant team.

The consultant team was led by two HKA consultants with expertise in design, contracting and procurement, risk management, alternative project delivery methods, process improvement, performance auditing, and dispute resolution. This experience includes working with both public and private owners with large capital construction programs and industry groups. The HKA consultants have and are currently engaged in conducting research projects for FHWA, among other transportation entities. The consultant team also included two subcontractor national experts, one with extensive owner advisory experience and affiliation with the Design Build Institute of America (DBIA), and the other based in Washington State with extensive Design Build and Progressive Design Build industry expertise.

The recommendations in this report are made by the HKA team based on the independent analysis conducted for this study.

Study Methodology

The study occurred from August 2024 to June 2025 and entailed an iterative process of stakeholder interviews, document reviews, cost analyses, and peer benchmarking.

Project Delivery Methods (PDMs): Advantages and Disadvantages

Project delivery methods (PDMs) regularly used to deliver capital construction projects initiated by public owners include the following methods (also identified in the study proviso):

- Design-bid-build (DBB),
- Design-build (DB),
- Progressive design-build (PDB),
- General contractor/construction manager (GC/CM), and
- Public-private partnerships (P3).

In addition, the consultants also reviewed other PDMs that are being implemented internationally, but which remain largely untested in the US market, including alliance contracting and other tri-party or integrated project delivery (IPD) models.

Based on this review, Part 1 of this report presents an overview of these PDMs, including:

- General advantages and disadvantages of each delivery method;
- Project circumstances or conditions typically associated with successful implementation of each method;
- Examples of projects on which the methods have been implemented; and the
- Potential impact of each method on cost, competition, and delivery schedule.

Assessment of WSDOT's Project Delivery Method (PDM) Practices

Current State Analysis

The study began with efforts to gain an understanding of the "as-is" state of WSDOT's project delivery program, with a focus on Alternative Project Delivery (APD):

1) Review of relevant literature, including:

    a. Statutory requirements related to the delivery of projects by WSDOT

    b. Reports and guidance related to project delivery, including documents published by WSDOT and other state Departments of Transportation (DOTs), US Federal Highway Administration (FHWA), National Cooperative Highway Research Program (NCHRP), and industry organizations such as the Design Build Institute of America (DBIA)

    c. Capital Projects Advisory Review Board (CPARB) reports and recommendations

    d. Example solicitation and contract documents issued by WSDOT

2) Analysis of cost and schedule data for the projects initiated by WSDOT between January 2017 and May 2024 to understand WSDOT's ability to:

    a. Produce reliable estimates of project cost;

    b. Attract reasonable levels of competition; and

    c. Control cost and schedule growth on projects after a contract has been awarded.

3) Collaboration with the STT, as well as representatives from the Washington chapters of the Associated General Contractors of America (AGC) and the American Council of Engineering Companies (ACEC), to identify firms and individuals to interview from the following stakeholder groups:

    a. Industry (contractors, design firms, subcontractors/minority firms)

    b. WSDOT leadership, including the DB Program Manager and State Construction Engineer, and WSDOT staff from the project development, alternative project delivery, estimating, risk management, project controls, and the Office of Equity.

Peer Outreach

Public owners within Washington State, as well as other Departments of Transportation across the country were interviewed to obtain their perspectives on:

- Post-pandemic construction market conditions;
- Any tools and practices they have found to be helpful in stimulating competition, improving contractual risk allocation, and/or enhancing the management and administration of major highway infrastructure projects delivered using alternative project delivery methods; and
- Other challenges and lessons learned.

The intent of these discussions was to determine the extent to which the WSDOT experience – whether due to statute, policy, or other factors – is unique, and to identify any successful practices being

implemented by others that could be adapted by WSDOT to optimize project delivery in terms of cost, schedule, competition, and/or other performance parameters important to stakeholder satisfaction.

Tables 1 and 2 below identify the public owners interviewed, along with the various Alternative Project Delivery (APD) Methods being utilized to help deliver the organization's capital program.

A summary of the stakeholder interviews and peer outreach is provided in Appendix C.

Table 1: Utilization of APD Methods by Public Owners within Washington State

Owner	DB	Progressive DB	GC/CM	P3
Sound Transit	x	x	x	
Port of Seattle	x	x	x	
City of Wenatchee		x		
City of Seattle	x		x	
Spokane County	x	x	x	
University of Washington	x	x	x	
Washington State University	x	x	x	

Table 2: Utilization of APD Methods by Other State Transportation Agencies

Department of Transportation	DB	Progressive DB	GC/CM	P3
California	x	x	x	x
Delaware	x		x	
Georgia	x		x	x
Maryland	x	x	x	
Ohio	x	x		x
Oregon	x		x	
Virginia	x	x		x

Study Recommendations

The HKA consultants categorized findings related to the WSDOT current state of project delivery, developed recommendations for improvements, and identified implementation strategies and benefits based on leading practices, lessons learned from similar studies, and practices successfully employed by peer agencies.

As presented in detail in Part 2 of this report, the recommendations have been organized into the following general topic areas:

- Cost Estimating
- Competition
- Procurement Practices
- Project Delivery Method Selection

- Project Administration

The recommendations include a combination of programmatic recommendations—entailing a one-time cost to support the implementation of program-wide initiatives—and project-level recommendations aimed at enhancing the performance of individual projects.

Included in these are recommendations for WSDOT to utilize the Progressive Design Build and General Contractor/Construction Manager methods. Formerly WSDOT needed to obtain approval and follow CPARB rules, and other RCW, on these delivery methods. HB 1970 Concerning state highway construction project alternative contracting procedures enacted in the 2025 Legislative Session amends certain statutory requirements under chapters 39.10 and 47.20 RCW for WSDOT's use of DB, GC/CM, and PDB procedures related to administering these types of projects.

For each recommendation, guidance is provided in Table 3 to help WSDOT determine how to best roll-out the recommendations, which have been prioritized within each general category based on the following considerations:

- The proper sequence in which recommendations should occur (for example, development and implementation of processes must be complete before performance monitoring activities can occur).
- Implementation costs (based on an order-of-magnitude estimate of one-time (O) or recurring (R) programmatic implementation costs or project-level costs (P));
- Implementation difficulty; and the
- Beneficial impact of the recommendation.

Most of the recommended actions are policy decisions within WSDOT's jurisdiction and responsibility. WSDOT will need to develop internal estimates of the time and cost to implement the recommendations. Legislative action may be required for budgetary purposes to provide additional appropriations for implementation of priority actions.

Table 3a: Recommendations and Implementation Considerations: **Cost Estimating**

	Recommendation	Timing	Cost [1]		Difficulty	Beneficial Impact	Status
I. Programmatic Recommendations	A. Update estimating guidance as appropriate to address: − Parameters for when to engage an independent cost estimator (ICE) vs. refresh the initial CRA/CEVP analysis − Use of the CRA/CEVP results to evaluate the cost/benefit of additional site investigations − Incorporation of a Contractor's view of cost into the EE − Development of the published range and final EE (See Paragraph 9.32 for details)	9 to 18 months	$100k to 300k	O	Moderate	High	Underway (Estimating Working Group is in the planning stages)
	B. Develop a rollout strategy for the updated guidance, including training and mentoring	6-18 months	<$100k	O	Moderate	High	---
	C. Establish a performance monitoring function to periodically assess variances (EE to award and award to final cost) to determine if further adjustments to the estimating guidance are needed	>24 months	<$50k	R	Moderate	Moderate	---
II. Project-Level Recommendations	A. Update CRA/CEVP risk pricing as close to the ad date as possible to better align the EE with bids	Prior to advertisement	$50 to 100k	P	Moderate	Moderate	--
	B. Engage an Independent Cost Estimator to prepare a contractor-style estimate	Prior to advertisement	$75 - $200k	P	Moderate	Moderate	--
	C. Conduct outreach to obtain industry feedback on risks and the impact of the intended risk allocation strategy on cost	Early in preliminary engineering phase	--	P	Low	High	--
	D. Conduct detailed site investigations to reduce risk premiums	Preliminary engineering phase	$100 to 500k	P	High	HIgh	---

(1) Not all costs require a new appropriation or new funding. One-time $ = O, Recurring $ = R. WSDOT will need to determine which of these recommendations requires additional funding, and which they can accomplish within their existing budgets. Project-level costs (P) would only be incurred should WSDOT determine implementing the associated strategy would enhance project performance (e.g., would help attract competition or improve estimates).

Table 3b: Recommendations and Implementation Considerations: **Competition**

	Recommendation	Timing	Cost [1]		Difficulty	Beneficial Impact	Status
I. Programmatic Recommendations	A. Establish WSDOT as an "Owner of Choice" (see Paragraph 10.28(f) for details)	Long-term	--	--	High	High	---
	B. DBE Program enhancements − Sponsor regular networking events statewide for prime contractors to meet and network with DBE firms − Develop and provide enhanced training on how contractors should document their Good Faith Efforts (GFE) to meet DBE goals − Develop and track performance criteria to measure the overall success of the DBE program and evaluate its cost-effectiveness in reducing systemic barriers	6 to 12 months	<$50k	R	Moderate	Moderate	---
II. Project-Level Recommendations	A. Conduct outreach to identify delivery or packaging strategies that could limit or expand competition	Early in preliminary engineering	--	-	Low	High	--
	B. Coordinate with other local agencies on the timing of major lettings so as not to exceed the capacity of local industry	Prior to advertisement	--	-	High	High	---
	C. Conduct sufficient site investigations to reduce uncertainty	Preliminary engineering phase	$100k to 500k	P	Moderate	High	---
	D. Allocate risk more equitably	Preliminary engineering phase	--	-	Moderate	High	---
	E. Review and adjust DBE goals based on the available pool and capacity of DBE firms in the project region	Prior to advertisement	<$100k	P	High	Moderate	---

(1) Not all costs require a new appropriation or new funding. One-time $ = O, Recurring $ = R. WSDOT will need to determine which of these recommendations requires additional funding, and which they can accomplish within their existing budgets. Project-level costs (P) would only be incurred should WSDOT determine implementing the associated strategy would enhance project performance (e.g., would help attract competition or improve estimates).

Table 3c: Recommendations and Implementation Considerations: **Procurement Practices**

	Recommendation	Timing	Cost (1)		Difficulty	Beneficial Impact	Status
Procurement Practices	A. Continue to review RFQ qualifications criteria to avoid unintentionally restricting or reducing the number of bidders	1 to 6 months	--	-	Moderate	Moderate	Underway
	B. Develop guidance and RFP templates to support a streamlined procurement process for small, low-risk projects (i.e., one-step Best-Value or a low bid process)	6 to 12 months	<$250k	O	Moderate	Moderate	---
	C. For traditional Best-Value DB projects where technical factors are critical to success, revise evaluation criteria to use a weighted criteria formula (similar to the current PDB solicitations) where greater weighting is assigned to non-cost criteria	1 to 6 months	--	-	Low	Moderate	---
	D. Develop training materials to promote a consistent approach towards the review and evaluation of ATCs	1 to 6 months	<$50k	O	Low	Moderate	---
	E. Develop PDB and GC/CM procurement guidance and templates	9 to 18 months	$100-$300k	O	Moderate	Moderate	---

(1) Not all costs require a new appropriation or new funding. One-time $ = O, Recurring $ = R. WSDOT will need to determine which of these recommendations requires additional funding, and which they can accomplish within their existing budgets. Project-level costs (P) would only be incurred should WSDOT determine implementing the associated strategy would enhance project performance (e.g., would help attract competition or improve estimates).

Table 3d: Recommendations and Implementation Considerations: **PDM Selection**

	Recommendation	Timing	Cost (1)		Difficulty	Beneficial Impact	Status
PDM Selection	A. Refine PDMSG and selection tools as appropriate to incorporate PDB and GC/CM	6 to 12 months	$150 to $250k	O	Moderate	Moderate	Underway
	B. Monitor APD project performance (e.g., award to final cost growth; schedule growth, change order history, quality etc.) and lessons-learned, and refine the PDMSG as appropriate	Long-term *(12 to 18 months to set up initial database; then long-term maintenance)*	$100k	O	Moderate	Moderate	---

Table 3e: Recommendations and Implementation Considerations: **Project Administration**

	Recommendation	Timing	Cost (1)		Difficulty	Beneficial Impact	Status
Project Administration	A. Update DB manual to include additional guidance on design oversight	6 to 12 months	<$100	O	Moderate	Moderate	---
	B. Develop implementation guidance for PDB and GC/CM projects	12 to 18 months	$200 to 500K	O	Moderate	Moderate	---
	C. Develop and implement rollout strategy for updated DB manual and GC/CM and PDB guidance	12 to 18 months	<$!00k	O	Moderate	Moderate	---
	D. Annually capture and present to the legislature capital program performance data (e.g., % of projects completed on time/on budget by delivery method)	12 to 18 months	$150k (to set up initial database and project performance report/dashboard template)	O	Moderate	Moderate	---

(1) Not all costs require a new appropriation or new funding. One-time $ = O, Recurring $ = R. WSDOT will need to determine which of these recommendations requires additional funding, and which they can accomplish within their existing budgets. Project-level costs (P) would only be incurred should WSDOT determine implementing the associated strategy would enhance project performance (e.g., would help attract competition or improve estimates).

Contents

PART 1: PROJECT DELIVERY METHOD OVERVIEW

Appendices

List of Figures

List of Tables

Part 1

Project Delivery Method Overview

Introduction

Project Delivery Methods

Design-Bid-Build

Design-Build

General Contractor / Construction Manager

Progressive Design-Build

Public Private Partnerships

Alliancing

Summary

1. Introduction

Definitions and General Overview of Different Project Delivery Methods

1.1 A "project delivery method" (PDM) refers to the overall process used to execute and complete a capital project, including planning, programming, design, and construction, and potentially operations and maintenance for some methods.

1.2 Commonly used PDMs to deliver major transportation infrastructure projects in the US are defined in Table 1.1 below.

Table 1.1: Common PDMs used to Deliver Transportation Infrastructure Projects

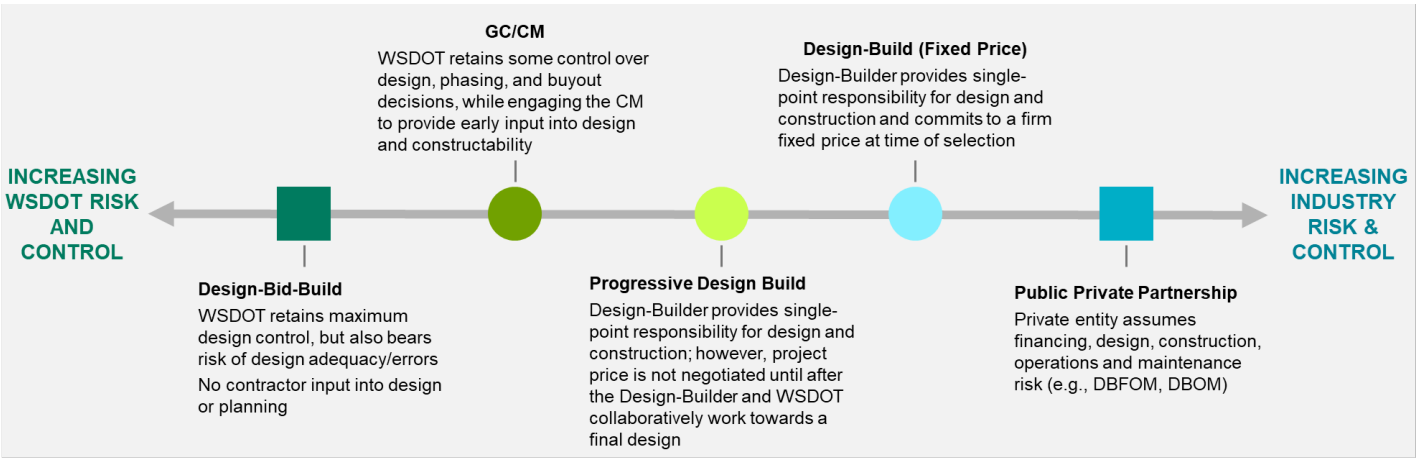
Method	Definition
Design-Bid-Build	The traditional PDM in which the owner completes its own designs, or retains a designer to provide design services, and then advertises and awards a separate construction contract based on a completed set of construction documents
Design-Build (Traditional)	A PDM in which the owner procures both design and construction services in the same contract from a single, legal entity referred to as the design-builder, who commits to a fixed price for the entirety of the work at the time of selection.
General Contractor Construction Manager	A PDM in which the owner engages the contractor at the early stages of design to provide preconstruction services. Such services typically entail providing input to the owner and design team regarding constructability, scheduling, pricing, and phasing. When the project scope is sufficiently defined, the owner and contractor will negotiate a price for the construction of the project.
Progressive Design-Build	A variation of design-build in which the design-builder is engaged early in the project development process to validate the owner's basis of design and to collaboratively advance or "progress" towards a final design and associated price for construction services.
Public Private Partnership	A contractual agreement usually involving a public agency contracting with a private entity to finance, design, and construct, operate, maintain and/or manage a facility or system. Common P3 structures include the following: • **Design-Build-Finance (DBF)** combines traditional DB delivery with some amount of private sector capital (typically to fill gaps in funding and allow projects to be built faster). • **Design-Build-Operate-Maintain (DBOM)** combines the design and construction responsibilities of DB contracts with operations and maintenance responsibility for the private partner. • **Design-Build-Finance-Maintain (DBFM)** is similar to the DBF approach, but the private partner also assumes short-to-medium term operational responsibility. Unlike DBOM, however, the owner retains responsibility for operations. • **Design-Build-Finance-Operate-Maintain (DBFOM)** is similar to the DBOM approach, but the private partner also assumes responsibility for financing.

1.3 Historically, public sector construction entailed the almost exclusive use of the design-bid-build (DBB) delivery method, involving the separation of design and construction services and the sequential performance of design and construction. However, transportation owners in the US, including WSDOT, have increasingly been exploring use of alternative PDMs to improve the speed

and efficiency of the project delivery process. These alternative PDMs move closer to the integrated services approach to project delivery favored in the private sector.

1.4 To illustrate this concept, the various PDMs used in US highway construction have been arranged below on a continuum, with the traditional DBB approach appearing on the left and the more alternative methods arranged from left to right according to increasing responsibility and performance risk assumed by an owner's industry partners.

Figure 1.1: Continuum of Project Delivery Methods Commonly used in US Highway Construction



Key Takeaway: Different PDMs are generally distinguished by how they approach risk and responsibility allocation among the owner, the designer, and the builder. As shown, the owner has maximum control and risk under the DBB approach. Moving from left to right along the continuum, industry involvement and performance risk increases.

Organization of this Part 1

1.5 Chapters 2 through 7 of this Part 1 describe each PDM in greater detail, including:

- The general advantages and disadvantages associated with each delivery method;
- Typical project conditions or circumstances that contribute to the successful application of each method; and
- Examples of where these methods have been implemented.

1.6 Chapter 8 then provides a comparative summary highlighting the potential impacts of each method on cost, competition, and project delivery schedule.

2. Design-Bid Build

Overview

2.1 Design-bid-build (DBB) is the traditional and most common method used by WSDOT to deliver construction projects. Under this method,

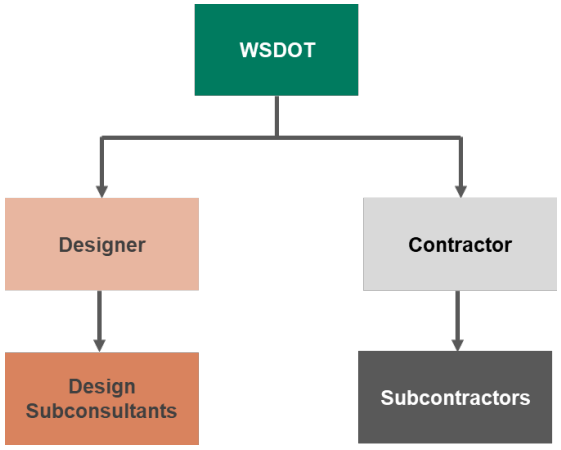
a) WSDOT either uses in-house staff, and/or engages an engineering firm, to prepare 100% complete design documents. (RCW 39.80)

b) The design documents are then advertised for competitively procured public bids.

c) The contract is awarded to the responsive and responsible bidder that submits the lowest price. (RCW 47.28.090)

2.2 As shown in Figure 2.1, a defining feature of DBB delivery is the separation of design and construction services. Under such an arrangement, WSDOT largely retains design control and thus the risk and financial responsibility for design errors or omissions encountered by the contractor.

Figure 2.1: DBB Contractual Structure



A defining feature of DBB delivery is the separation of design and construction services and the sequential performance of a project's design and construction phases.

Use of this Method

2.3 All WSDOT projects qualify for the DBB delivery method; however, it tends to be most advantageous for projects that:

- Lack schedule sensitivity,
- Require a high degree of owner control, and
- Have a high level of third-party risks and unknowns that are best managed by the owner.

Potential Advantages and Disadvantages

2.4 In general, conventional DBB delivery, particularly when implemented with a low bid procurement process, has served owners reasonably well, providing adequate facilities at the lowest *initial* price that responsible, competitive bidders may offer. While awarding to the lowest bidder provides no guarantee that the owner will receive the *final* lowest price, it does:

- Simplify the construction award process and provide confidence that favoritism did not play a role in the selection decision, and
- Minimize the need for sophisticated price negotiation tactics.

2.5 In addition, the owner, having had full control over the design process, should be positioned to receive the exact end product that it desires. However, as there is no contractor involvement in the design stage, the design may lack elements of constructability, potentially impacting the cost and/or duration of the work. Furthermore, the separation of services under DBB has the potential to create adversarial relationships among the project participants that the owner will then have to referee.

2.6 A summary of such advantages and disadvantages related to DBB is presented in Table 2.2.

Table 2.1: DBB – Potential Advantages and Disadvantages

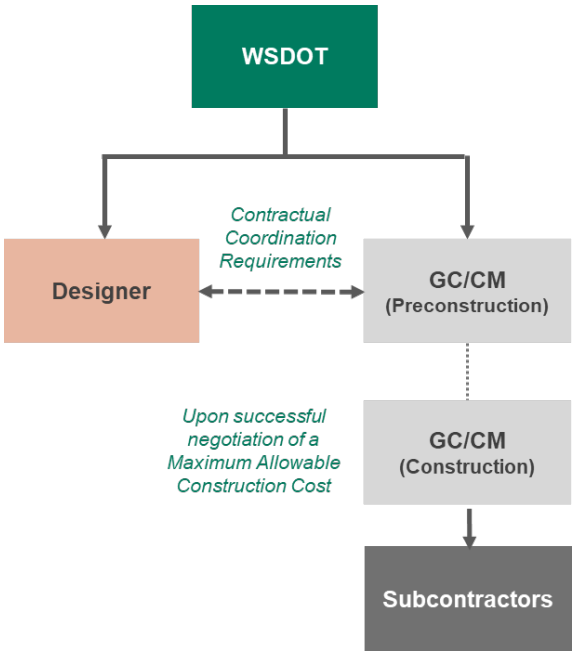
Potential Advantages	Potential Disadvantages
• **Broad Applicability.** DBB is the traditional delivery method that is: - Applicable to a wide range of projects - Well-understood and accepted by owners and industry, with well-established legal precedents • **Competition.** DBB tends to promote high competition among contractors. • **Procurement Duration.** Bid period is typically the shortest of all methods. • **Owner Control.** The designer working directly for, and on behalf of, the owner, provides the owner with maximum design control. • **Cost.** DBB offers the lowest initial price that responsible, competitive bidders can offer. In addition, basing estimates on 100% complete designs typically enhances the accuracy and certainty of cost estimates.	• **Adversarial Relationships.** The separation of design and construction contracts can create adversarial relationships as the parties may have different agendas and objectives. In contrast to DB methods, the owner must manage/referee two contracts. • **Design Risk.** The owner bears the risk of design adequacy/errors. • **Lack of early contractor involvement** may impact constructability and pre-construction value engineering, increasing the potential for errors and omissions, change orders, delays, and other adverse outcomes. Without contractor input, the design team may have limited knowledge of the true construction cost and scheduling/phasing ramifications of design decisions. • **Extended Delivery Schedule.** The sequential design, procurement, and construction phases can extend the delivery schedule.

3. General Contractor / Construction Manager (GC/CM)

Overview

3.1 General Contractor/Construction Manager (GC/CM) is a process of collaborative management among the owner, designer, and contractor teams.

Figure 3.1: GC/CM Contractual Structure



3.2 As depicted in Figure 3.1, under the GC/CM approach – similar to DBB – WSDOT would hold separate contracts with the designer and the GC/CM firm.

3.3 A key difference between DBB and GC/CM is the timing of contractor selection.

a) Unlike DBB, in which the contractor is not selected until 100% complete design, the GC/CM firm is typically selected early in the design process, ideally at 15 to 30% design.

b) This early engagement allows the GC/CM firm to participate in the project's design development phase as a construction advisor, providing input regarding constructability, scheduling, pricing, phasing, and risk management as part of their preconstruction services.

3.4 When the design documents are at least 90% complete (RCW 39.10.370), the GC/CM firm and WSDOT, typically with assistance of an independent cost estimator (ICE), will then negotiate a Maximum Allowable Construction Cost (MACC) for the construction phase of the project, during which the GC/CM firm will act as a general contractor (i.e., holding the trade contracts, managing the construction of the work, and assuming 'performance risk' for cost, schedule, and quality).

3.5 RCW 39.10.370 also allows for major work packages to be bid before agreement is reached on the total MACC to allow portions of the work to be constructed before the final design is completed (thus supporting some schedule compression).

3.6 To procure GC/CM services, RCW 39.10.360 requires WSDOT to include an estimated Maximum Allowable Construction Cost (MACC) in the solicitation documents. The GC/CM firm is then selected using a best-value procurement process that considers both qualifications criteria and price-related factors, such as a proposed percent fee on the estimated MACC.

3.7 In Washington State, GC/CM projects can be delivered as either a traditional GC/CM, which is aligned more closely with vertical (building) construction, or "Heavy Civil" GC/CM, which is often applied to horizontal or transportation projects with significant civil scopes of work. In either instance, RCW 39.10.380 requires trade subcontract packages to be competitively bid.

3.8 Under traditional GC/CM, the GC/CM can bid on subcontract work not to exceed 30% of the negotiated MACC (RCW 39.19.390). For Heavy Civil GC/CM, the GC/CM can bid on up to 50% of the subcontract packages and may also openly compete for another 20% of the work. Heavy Civil GC/CM thus allows the GC/CM firm to self-perform up to 70% of the work, which in turn would allow this firm to control the schedule and phasing of the work, ideally promoting construction efficiencies and reduced durations.

Use of this Delivery Method

3.9 Pursuant to RCW 39.10.340, GC/CM may be used, subject to CPARB Project Review Committee (PRC) permission, if at least one of the following conditions is met:

a) Implementation of the project involves complex scheduling, phasing, or coordination;

b) The project involves construction at an occupied facility which must continue to operate during construction;

c) The involvement of the GC/CM during the design stage is critical to the success of the project;

d) The project encompasses a complex or technical work environment;

e) The project requires specialized work on a building that has historic significance; or

f) The project is, and the public body elects to procure the project as, a heavy civil construction project.

3.10 These criteria are generally consistent with national practice.

Potential Advantages and Disadvantages

3.11 Although use of the GC/CM approach will not eliminate the potential for adversarial disputes to arise between the parties, the early involvement of the GC/CM firm should help foster more of a collaborative and integrated team approach to problem solving.

3.12 In addition, early collaboration with the GC/CM firm during the design phase can be used to help establish design priorities, identify prefabrication opportunities, provide pricing for design alternates, and establish strategies for overcoming or mitigating potential construction risks. The earlier such input and ideas are obtained, the more seamlessly they can be incorporated into the final design solution.

3.13 A summary of additional advantages and disadvantages associated with GC/CM is provided in Table 3.1.

Table 3.1: GC/CM – Potential Advantages and Disadvantages

Potential Advantages	Potential Disadvantages
• **Budget Control.** The more collaborative design development process promoted under GC/CM can provide owners with priced alternatives to assist with decision-making, as well as the flexibility to adjust the final project scope and budget as new information becomes available during the design process. • **Schedule Compression.** Early engagement of the GC/CM firm with the owner and design team can help establish design priorities, identify prefabrication opportunities, facilitate procurement of long-lead items, support early construction work packages, and establish strategies for overcoming or mitigating potential	• **Negotiated Cost.** The construction price is not known at time of GC/CM contract award but is instead negotiated following preconstruction activities. - Cost estimating expertise is needed during final cost negotiations to ensure a fair price is received. - Extensive negotiations to reach agreement on construction costs and final risk allocation can extend the overall project schedule.

Potential Advantages	Potential Disadvantages
construction risks, all of which can help reduce the overall delivery schedule. • **Risk Management.** The owner, the designer, and the GC/CM firm can collectively assess risks, identify the need to perform additional site investigations to further identify and reduce risks, and properly allocate risk prior to entering the construction phase. • **Change Control.** GC/CM involvement during the design phase should improve the quality of the design and bidding documents and thus reduce cost growth due to change orders and claims once construction is underway. • **Owner Control.** In contrast to design-build delivery, the GC/CM method allows the owner to retain significant control and influence over design and construction phasing decisions.	- If agreement on construction costs is not reached, the project will be substantially delayed. • **Design Risk.** The owner bears the risk of design adequacy and thus costs related to design errors and omissions. In addition, having two contracts to manage may lead to adversarial relationships between the designer and GC/CM firm that flow through the owner. • **Design Churn.** A consensus-driven design process entailing the owner, designer, GC/CM firm, and stakeholders during the pre-construction phase can lead to design "churn" that extends the overall delivery schedule. (A strong owner's project manager is needed to control scope and schedule.)

GC/CM Experience

WSDOT Experience

3.14 WSDOT used the heavy civil GC/CM delivery method for the Seattle Multimodal Terminal at Colman Dock project. The project, which was originally budgeted at $268M, had an approximate 7-year duration from spring 2015 to January 2023.

3.15 GC/CM was selected for this project due to:

a) The complexity of the work (scope entailed heavy civil marine, structural, and building construction),

b) Extensive coordination needs with other projects and stakeholders, and

c) Complex phasing needs, in which the existing facility was to remain open during construction.

3.16 The project building elements were descoped and then rescoped later causing delay and added cost. Further scope changes and coordination issues resulted in cost growth and delay. The project is currently funded at $489M with completion in early 2025. WSDOT is compiling lessons-learned that it plans to apply to future GC/CM projects.

Experience of other Owners in Washington State

3.17 Sound Transit and the City of Seattle have more extensive experience with GC/CM. Their results have been mixed, with large, complex GC/CM projects exhibiting cost and schedule growth.

3.18 The City of Seattle, however, indicated that smaller GC/CM projects (in the range of $25-$150M) generally come in on or close to budget. The City uses the pricing and constructability input provided by the GC/CM firm to adjust the project's scope and design to meet a fixed budget.

National Experience

3.19 GC/CM, which owners outside of Washington State often refer to as either Construction Manager at Risk (CMAR) or Construction Manager/General Contractor (CM/GC), is widely used and often the default delivery method for "vertical" building construction involving the coordination of multiple trade contracts and complex phasing and staging requirements.

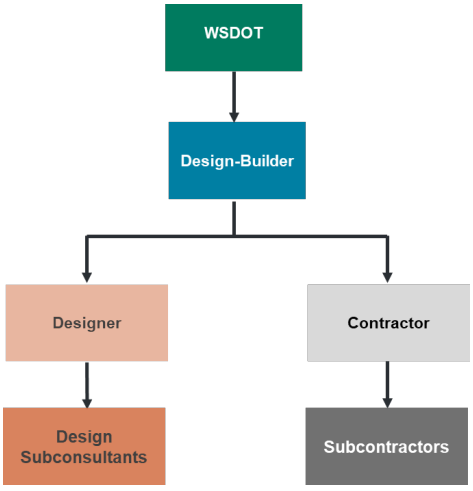
3.20 It has also become a common alternative delivery option for the "horizontal" highway construction industry. The Federal Highway Administration (FHWA) has approved CM/GC for use on federal-aid projects throughout the U.S. Several DOTs have used CM/GC extensively, including Arizona, Colorado, Connecticut, Delaware, California, Massachusetts, Michigan, Utah, and Vermont, among others. Several DOTs have developed manuals of practice addressing CM/GC as well as other alternative delivery methods.

4. Design-Build (Fixed Price)

Overview

4.1 Design-build (DB) is a project delivery method under which WSDOT contracts with a single legal entity, referred to as the "design-builder", to both design and construct a project.

Figure 4.1: DB Contractual Structure



4.2 The integration of design and construction services under one contract (as depicted in Figure 4.1, is intended to support:

a) Earlier cost and schedule certainty (as the design-builder commits to a fixed price and schedule at the time of contract execution),

b) Closer coordination of design and construction activities, and a

c) Non-sequential delivery process that allows some construction activities to proceed simultaneously with final design (i.e., "fast-tracking").

4.3 To procure DB services, WSDOT uses a two-step "best value" process entailing:

a) A Request for Qualifications (RFQ) step through which WSDOT establishes a shortlist of 3 to 5 qualified design-builders, followed by

b) A Request for Proposals (RFP) step, during which the shortlisted teams are invited to submit technical and lump price proposals for the work, which WSDOT then evaluates based on price and non-price factors set forth in the RFP to select the team that offers the best value.

Use of this Delivery Method

4.4 RCW 47.20.785 authorizes WSDOT to use DB for projects over $2 million when:

a) Construction activities are highly specialized, and a DB approach is critical to developing the construction methodology;

Or

b) The project provides opportunities for innovation and efficiencies between the designer and builder;

Or

c) Significant savings in project delivery time would be realized.

4.5 Nationally, owners have also generally found DB to be advantageous when the project:

a) Has minimal third-party risks (or such risks can be effectively managed by the design-builder);

b) Is unlikely to experience significant changes outside of the design-builder's control;

c) Does not entail complex phasing or operational considerations; and

d) Entails scope that can be adequately communicated to proposers without 100% plans and specifications.

Potential Advantages and Disadvantages

4.6 Potential advantages and disadvantages related to DB are presented in Table 4.1 below.

Table 4.1: DB – Potential Advantages and Disadvantages

Potential Advantages	Potential Disadvantages
• **Time Savings.** In comparison to DBB, overall project durations tend to be reduced under DB because detailed design work can often overlap with construction. • **Early Price Certainty.** Under DB, the total contract price for design and construction will be established at the time of design-builder selection and prior to design finalization. In comparison to DBB, DB thus provides for earlier confirmation of project pricing and supports earlier obligation of construction funds. • **Single Point of Responsibility.** DB offers a single point of responsibility for both the design and construction of the project. This centralized responsibility will, in large part, allow owners to avoid the effects of the Spearin doctrine (United States v. Spearin, 248 U.S. 132 (1918)), which places the risk of a defective design on the owner. Use of DB should thus reduce the potential for change orders and disputes compared to a DBB project, in which a separate designer and builder may ultimately clash over whether a project issue stems from a poor design or the contractor's execution of that design. • **Innovation and Enhanced Constructability.** Having the designer and contractor working together under one contract can foster enhanced collaboration during design and construction, allowing for the early incorporation of contractor expertise and optimization of the design to align with the contractor's strengths and chosen means and methods. Such collaboration also supports a continuous value engineering and constructability review process, allowing the contractor and designer to work together to identify potential construction issues early in the project development process.	• **Risk Pricing.** Locking in lump sum prices early may result in high risk pricing to cover uncertainties or incomplete design elements. Similarly, if risks allocated to the design-builder are not well defined or otherwise are perceived as being onerous, it may also result in high bid premiums. • **Reduced Owner Design Control.** Owner and stakeholder interests may be underrepresented in final design decisions given reduced owner control over the design process. • **Procurement process** can be lengthy and resource-intensive. Time and effort needed for contractors and designers to prepare responsive DB proposals may reduce competition. • **Cost.** Owner incurs additional costs for project criteria development and possibly stipends for unsuccessful proposers. Funding may not support fast-tracking construction or accelerated cash flows.

DB Experience

WSDOT

4.7 WSDOT's first DB project was executed in 2001. Subsequently, it has initiated approximately 62 DB projects over the last 23 years with additional projects in the pipeline.

4.8 The project sizes have ranged from mega projects or programs in excess of $1B to several small DB projects in the $2-10M range.

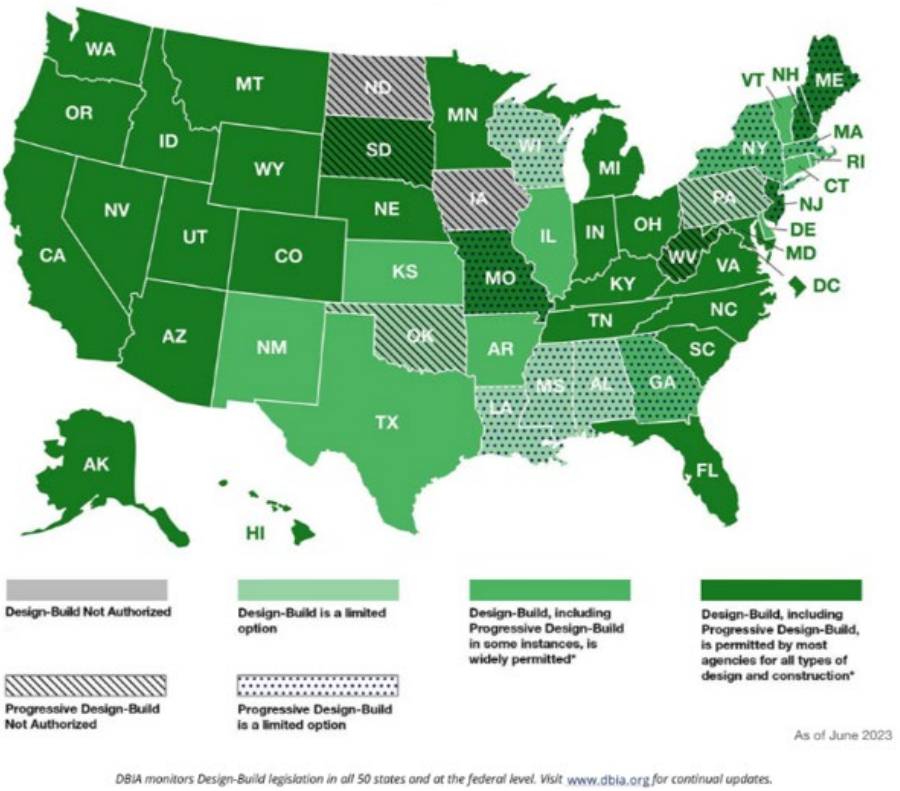
4.9 WSDOT has generally adopted national best practices regarding DB delivery advocated by DBIA, FHWA, and sister agencies with mature DB programs, and its DB program has been generally well received by industry. However, recent DB mega-projects have resulted in fewer bidders and higher bids compared to the Engineer's Estimate.

4.10 Chapter 9 of this report includes an evaluation of WSDOT's DB projects initiated between 2017 and May 2024.

National Experience

4.11 DB has been authorized for use at some level of by most of the state governments in the United States, including for Departments of Transportation, as shown in Figure 4.2.

Figure 4.2: Design-Build Authorization by State
(source: Design Build Institute of America 2024)



4.12 The use of DB and other alternative contracting methods are viewed by many DOTs today as a strategy to better manage limited internal DOT resources and improve efficiency by shifting more responsibility for project delivery to the private sector. This has resulted in transitioning DOT staff from traditional roles in the organization (e.g., design and quality management) to more of an oversight and compliance role.

4.13 A national comparative study of DBB, DB, and GC/CM projects completed in 2018 indicated that the use of DB results in time savings compared to DBB given the greater integration (overlapping) of design and construction phases and potential for accelerated design and construction durations.[1]

[1] Alternative Contracting Method Performance in U.S. Highway Construction, FHWA Publication No. FHWA-HRT-17-100, research performed by the University of Colorado, Boulder, the University of Kansas, and Hill International, Inc., April 2018. https://des.wa.gov/sites/default/files/2024-05/WDSOT-PDMRTF-TechBrief-FHWA-AltContMethodPerformance-04-2018.pdf

5. Progressive Design-Build

Overview

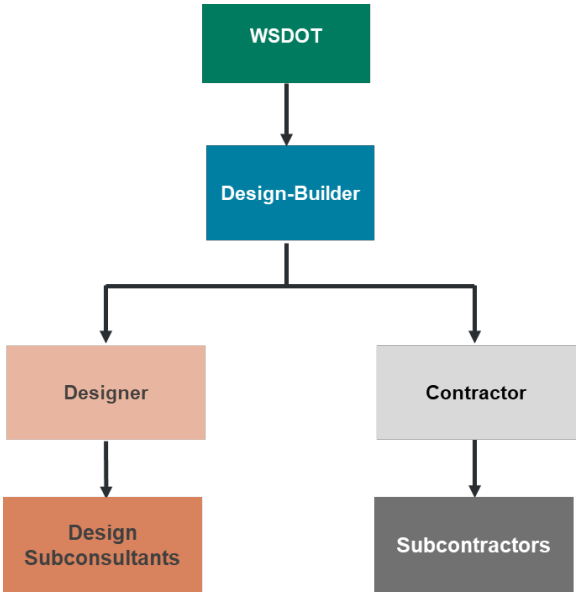
5.1 Progressive Design-Build (PDB) is a variation of fixed-price DB in which the design-builder is engaged early in the project development process to validate the owner's basis of design and collaboratively advance or "progress" towards a final design and associated price for construction services.

5.2 The basic PDB contractual structure, as shown at right, is comparable to the more conventional fixed-price variant of DB in which the design-builder provides a single point of responsibility for design and construction services. However, under PDB, the design-builder will typically deliver the project in two phases:

a) Phase 1 (preliminary or preconstruction services) includes validation of the owner's basis of design, development of the preliminary design, and negotiation of a firm contract price.

b) Phase 2 includes final design, construction, and commissioning.

Figure 5.1: PDB Contractual Structure



5.3 Similar to GC/CM, the PDB team is engaged early in the design process (e.g., at 0 to 15% design).

5.4 The PDB team will typically be selected using a best-value process considering qualifications, experience, and selected price-related elements similar to the criteria outlined in RCW 39.10.360 for GC/CM. Unlike traditional DB, the proposers are not required to provide a final design, schedule, or full project price as part of their proposals, which should shorten the duration of the procurement process.

5.5 When implementing PDB, the design-builder must typically provide a subcontracting plan, subject to owner approval, identifying the work packages it plans to bid out to qualified subcontractors, as well as what specific portions of work it intends to self-perform (which is often limited to a specified threshold, e.g., 30-40% of the total contract value). Some owners allow the design-builder to procure certain subcontract packages on a sole source basis, if deemed to be in the project's best interest.

Use of this Delivery Method

5.6 PDB projects under RCW 39.10.300 must meet similar requirements to traditional DB under RCW 47.20.785. This entails showing the project meets at least one of the following criteria:

a) The construction activities are highly specialized, and a DB approach is critical in developing the construction methodology;

Or

b) The projects selected provide opportunity for greater innovation or efficiencies between the designer and the builder;

Or

c) Significant savings in project delivery time would be realized.

5.7 Based on national experience, additional factors that lend projects to PDB delivery are similar to those for GC/CM and include projects:

a) Having a high potential for unknown or poorly defined risks that would benefit from early design-builder involvement

b) Entailing complex phasing and/or operational or stakeholder impacts that would benefit from ongoing owner/stakeholder input

c) Entailing major risks that can be mitigated by having the contractor and designer collaborate more closely in a direct contractual relationship (in contrast to GC/CM)

Potential Advantages and Disadvantages

5.8 Potential advantages and disadvantages related to PDB are presented in Table 5.1 below.

Table 5.1: PDB – Potential Advantages and Disadvantages

Potential Advantages	Potential Disadvantages
• **Single Point of Responsibility.** In contrast to GC/CM, under PDB, the direct contractual relationship for design services shifts from the owner to the contractor. This "single point of responsibility" can be beneficial for projects with major risks that would benefit from minimizing potential conflicts between the designer and contractor and change orders related to "errors and omissions". • **Cost and Competition.** The progressive process of developing a construction price under PDB allows the owner to bring in a design-builder very early in the development process and thereby avoid the time and expense of developing a set of baseline design documents to the level needed to obtain a binding construction price from a design-builder during the procurement stage. This can also reduce risk pricing and help attract bidders that would otherwise be reluctant to assume fixed-price risk at low levels of design. • **Flexibility and Budget Control.** The collaborative design development process promoted under PDB can provide owners flexibility to adjust the final project scope and budget as new information becomes available during the design process. • **Schedule Compression.** Because PDB firms can be brought on very early, primarily on the basis of qualifications and management plans (rather than complete design solutions and fixed	• **Negotiated Cost.** Unlike fixed-price DB, no cost certainty is provided at the time of design-builder selection. The project price is instead negotiated following design development and preconstruction activities. - Cost estimating expertise is needed during final cost negotiations to ensure a fair price is received. - Extensive negotiations to reach agreement on construction costs and final risk allocation can extend the schedule. - If agreement on construction costs is not reached, the project will be substantially delayed • **Design churn.** Consensus-driven design process can lead to design "churn" that extends the overall delivery schedule. (A strong owner's project manager is needed to control scope and schedule.).

Potential Advantages	Potential Disadvantages
prices), the owner can avoid a lengthy preliminary design phase and prolonged procurement process. Further schedule compression may occur if the design-builder can start the procurement of long-lead items early and begin construction on early work packages before the design is 100% complete.	

PDB Experience

WSDOT Experience

5.9 WSDOT has started using PDB on a limited number of projects, having received approval from the PRC to perform the following PDB projects:

- US 101/SR 109 Remove Fish Barriers project on March 26, 2020.
- Remove Fish Passage Barriers in Kitsap County project on July 28, 2022.
- Thurston & Grays Harbor Counties Removal of Fish Barriers Project on September 28, 2023, and
- SR 167, I-5 to SR 161 New Expressway (Stage 2b) on January 26, 2024.

5.10 All of the Fish Barrier projects are focused on the removal of individual fish barriers rather than construction of highways or bridges.

5.11 WSDOT's first highway PDB project is the SR 167, I-5 to SR 161 project, and WSDOT is currently developing the contract and procurement documents for the use of PDB for a highway project.

Experience of Other Owners in Washington

5.12 PDB is more often used in non-transportation projects in Washington. Experienced users include the State of Washington Department of Enterprise Services, University of Washington, Washington State University, Western Washington University, and several Washington cities and counties. The City of Wenatchee is currently using PDB for its Confluence Parkway Project and Spokane County used PDB for its U.S. Pavilion project and for its new Public Works Operations Building among other PDB projects in the works.

National Experience

5.13 Nationally, PDB has been more widely used for water/wastewater and major public sector airport terminal expansion projects in the U.S. involving complex, multi-year construction projects.

5.14 For highway infrastructure, PDB is currently being implemented by more than a dozen DOTs, including Arkansas, Alabama, Colorado, Kansas, Ohio, Maryland, Michigan, Nevada, and Virginia among others. Some high-profile transportation mega-projects currently using PDB include:

a) Ohio and Kentucky DOTs' $3.6B Brent Spence Bridge Corridor projects https://brentspencebridgecorridor.com/ and the

b) $1.7-1.9B Maryland Transportation Authority's Key Bridge Replacement Project https://www.keybridgerebuild.com/ that recently awarded a $78M Phase 1 contract for pre-construction services.

6. Public Private Partnerships

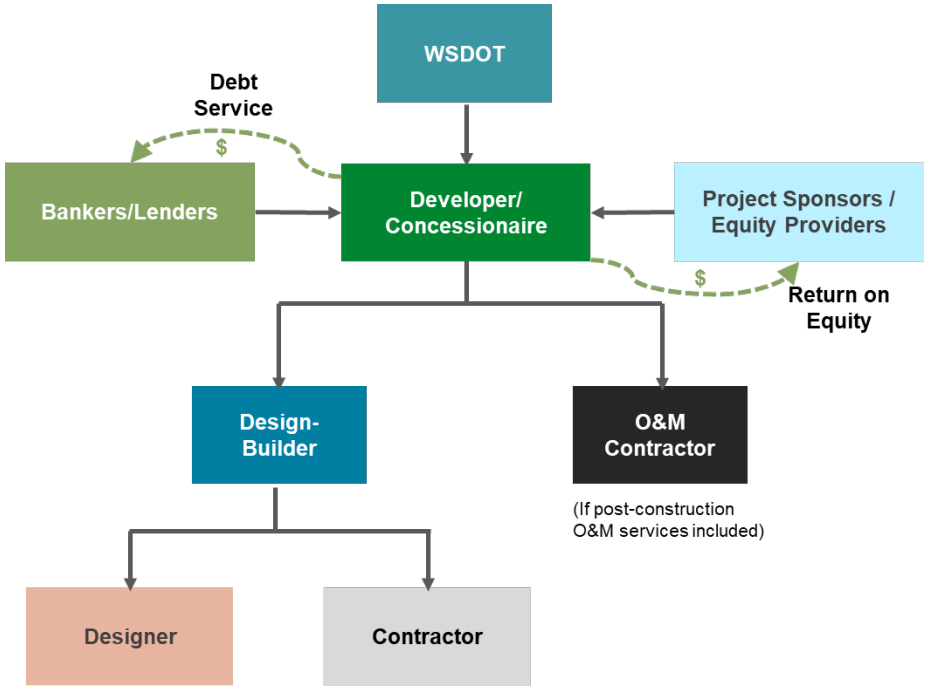
Overview

6.1 A Public Private Partnership (P3) agreement centralizes project delivery under a single contract with a developer or concessionaire (which may entail a consortium of multiple firms), to assume design, construction, operations, maintenance, and/or financing responsibilities of a public facility.

6.2 The terms and conditions under which the private sector participant is to design, build, finance, operate, and/or maintain the facility largely depends on the owner's priorities regarding overall cash outlay, the timing of the owner's monetary obligations, performance needs, short-and long-term risk allocation (for both operational and financial performance), and resource availability.

6.3 Figure 6.1 depicts the typical structure of a P3 agreement.

Figure 6.1: P3 Contractual Structure



6.4 P3 agreements for highway transportation assets are typically further structured as either a "revenue-risk" toll concession or an "availability payment" concession.

6.5 Under a revenue risk concession, tolls paid by project users often comprise the primary revenue source for a P3 transaction. In return for the right to collect tolls during the concession period, the P3 developer bears the risk that the revenues may be inadequate to repay the underlying project loans and equity investments. In the event of greater-than-expected revenues, some concession agreements include a revenue-sharing provision between the private partner and public owner.

6.6 With availability payment concessions, the public agency pays the P3 developer throughout the concession period for making the non-tolled facility available to users. Payments may be reduced if the private partner does not meet operational performance standards such as lane closures,

incident management, or snow removal. These transactions often include construction "milestone" payments to defray the amount of the ongoing availability payment.

Use of this Delivery Method

6.7 In general, P3 agreements are often seen as a recourse to address budget constraints or financing gaps, particularly for owners that wish to execute large-scale capital projects requiring access to significant equity investment.

6.8 For owners that otherwise have the financial capacity and "investment grade" credit ratings to pursue such projects on their own, P3s can provide an effective option to efficiently deliver projects that are outside of the owner's core mission and for which the owner lacks the staff expertise to operate and maintain the asset.

Potential Advantages and Disadvantages

6.9 Potential advantages and disadvantages related to P3are presented in Table 6.1 below.

Table 6.1: P3 Agreements – Potential Advantages and Disadvantages

Potential Advantages	Potential Disadvantages
• Early contractor involvement and input in all aspects of project lifecycle including design, construction, operations and maintenance can enhance the maintainability of design solutions, and provide a better approximation of lifecycle costs • Revenue risk P3 allows for delivery of large projects much sooner than otherwise would be possible through traditional DOT funding or financing. • Availability P3 can motivate the contractor to increase the quality of design and workmanship to help minimize future maintenance issues • P3 developer may be able to provide specialized expertise to operate and manage ancillary assets that are not part of .an owner's core mission.	• Poor risk allocation can reduce cost efficiency and/or detract proposers. • Procurement process can be time-consuming, costly, and complex. • P3 projects may be susceptible to political or public opposition. • Owner may give up control over design details and some aspects of operations and maintenance. • Higher costs may stem from debt financing, cost of capital.

P3 Experience

WSDOT Experience

6.10 To date no P3 transportation infrastructure projects have been completed in Washington State.

6.11 WSDOT has new P3 authorization (SB 5801, 2025 Session) to procure and contract with private parties to develop eligible transportation projects as a P3, following development of policies and rules that will be proposed to the Legislature in September 2026. Language in the bill was developed following a JTC P3 workgroup effort that developed a legislative framework for a revised P3 law, with proposed components that are intended to balance the public and private sector risk for P3 projects; including administrative rules and policies, and an implementation plan for P3 use

in Washington State including education and outreach, developing policies and procedures, and securing resources needed to develop P3 projects. The JTC P3 Work Group deliverables can be found on the Completed Studies page, under 2024.

National Experience

6.12 At the national level, major P3 transportation projects have been completed while others are in the early stages of development, in procurement, preconstruction, or are under construction.

6.13 Notable P3 projects that came to commercial close within the past 10 years have included the following:

Table 6.2: Projects executed using P3 Agreements

Project	Agency	P3 Structure	Commercial Close	Value ($ millions)
I-95 Express Lanes (FredEx)	Virginia DOT	Revenue Risk	2019	830
Gordie Howe International Bridge	Windsor-Detroit Bridge Authority	Availability Payment	2018	4,415
Central 70, I-70	Colorado DOT	Availability Payment	2017	1,271
Transform 66, Outside the Beltway	Virginia DOT	Revenue Risk	2016	3,724
SH 288 Toll Lanes	Texas DOT	Revenue Risk	2016	425
Rapid Bridge Replacement	Pennsylvania DOT	Availability Payment	2015	1,119
I-77 High Occupancy Toll (HOT)	North Carolina DOT	Revenue Risk	2014	655
I-4 Ultimate Improvements	Florida DOT	Availability Payment	2014	2,323

6.14 In the past 5-10 years, owners are reporting there have been fewer and higher bids particularly for large, complex, multi-season fixed-price P3 projects.

a) Significant post-pandemic escalation and volatility in construction labor, commodities, and equipment costs have added to the uncertainty of pricing, and significant cost growth related to the use of fixed-price P3 (as well as DB) delivery.

b) This has led several major developers and contractors to approach P3 projects more cautiously and be much more selective in the pursuit of P3 projects.

6.15 Transportation owners are also rethinking how and when to use P3 and have implemented progressive processes including engaging industry in a pre-development phase under the P3 model to assess project feasibility before entering into a comprehensive development agreement.

a) The I-495 Managed Lanes project in Maryland was recently advertised as a progressive P3, but after failing to attract developers due to excessive political and technical risk, it was cancelled.

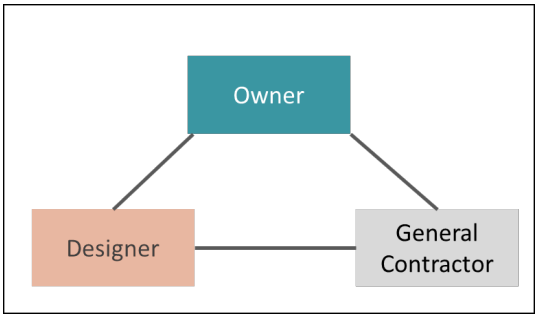
b) Similarly, LA Metro is advancing the Sepulveda Corridor P3 project under a competitive pre-development process that may result in a no build option if the project risks and costs come in too high.

7. Alliancing Contracting

Overview

7.1 Under project alliancing, an owner and one or more service providers (constructors, consultants, designers, suppliers, or a combination thereof) collaborate on the delivery of a project.

Figure 7.1: Alliance ("tri-party" agreement) Contractual Structure



7.2 In contrast to GC/CM and PDB, which also entail a collaborative, relationship-based approach to project delivery, alliancing uses contractually established financial incentives to encourage project performance and cooperation among the alliance participants.

7.3 A project alliance, which typically takes the form of a multi-party agreement as depicted in Figure 7.1, typically includes the following characteristics:

a) The project team members jointly develop and agree to project goals and a target cost.

b) At project completion, the target cost is then compared to the final cost, and the under-runs or overruns are shared equitably (through pre-agreed ratios) among the participants based on their relative contributions to the leadership, performance, outcomes, and overall success of the project. In this manner, all participants have a financial stake in the overall project performance.

c) Project risk and responsibilities are shared and managed collectively, rather than allocated to specific parties.

d) All participants have a say in decisions for the project, with decisions made on a "best-for-project" basis, rather than to further individual interests.

e) All participants provide "best-in-class" resources. Full access is provided to the resources, skills, and expertise of all participants.

f) The agreement creates a no-fault, no-blame, and no-dispute culture in which no legal recourse exists except for the limited cases of willful default and insolvency.

g) All transactions are open book.

Use of this Delivery Method

7.4 Alliance contracting has rarely been used to deliver public infrastructure projects in the US.

7.5 However, it is generally thought that this delivery method has the potential to deliver complex, high-risk projects, where risks are unpredictable, inherent to the nature of the project (rather than due to inadequate planning, scoping, or time), and best managed collectively.

7.6 The project should also derive significant benefit from the involvement of both the owner and non-owner participants in all aspects of project development and implementation.

Potential Advantages and Disadvantages

7.7 Potential advantages and disadvantages related to Alliance Contracting are presented in Table 7.1 below.

Table 7.1: Alliance Contracting – Potential Advantages and Disadvantages

Potential Advantages	Potential Disadvantages
• Increased efficiency provided by a well-functioning team and open communication • Improved ability to manage risks due to the sharing of responsibility and the incentive for all participants to proactively mitigate risks • Transparent pricing of the project, including contingencies	• Absence of direct price competition can lead to overly conservative and easily achievable performance targets • Participants are exposed to a broader range of risks than on a traditional project (and may be liable for the performance of other team members) • Requires high level of involvement from senior management to establish and maintain an integrated team • Owner's ability to make unilateral decisions is severely restricted

Experience

7.8 Alliance contracts were first used in the early 1990s by British Petroleum (BP) to develop its North Sea oil and gas reserves. The method has since been used on multiple public infrastructure projects in Australia and New Zealand.

7.9 In the US, use of alliance contracting remains extremely limited, particularly for public infrastructure projects. However, Georgia DOT and the Washington (DC) Metropolitan Area Transit Authority (WMATA) have expressed interest in its use.

7.10 It has become far more common for owners, particularly when using DB, GC/CM or PDB delivery, to incorporate elements of collaborative contracting without executing formal multi-party agreements. Such practices aim to drive all project participants to act more as an integrated project delivery team, and include use of techniques such as collaborative partnering, Building Information Modeling (BIM) as a platform for collaboration throughout the project's design and construction phases, and Lean design and construction tools to support collaborative planning and problem solving.

8. PDM Comparison

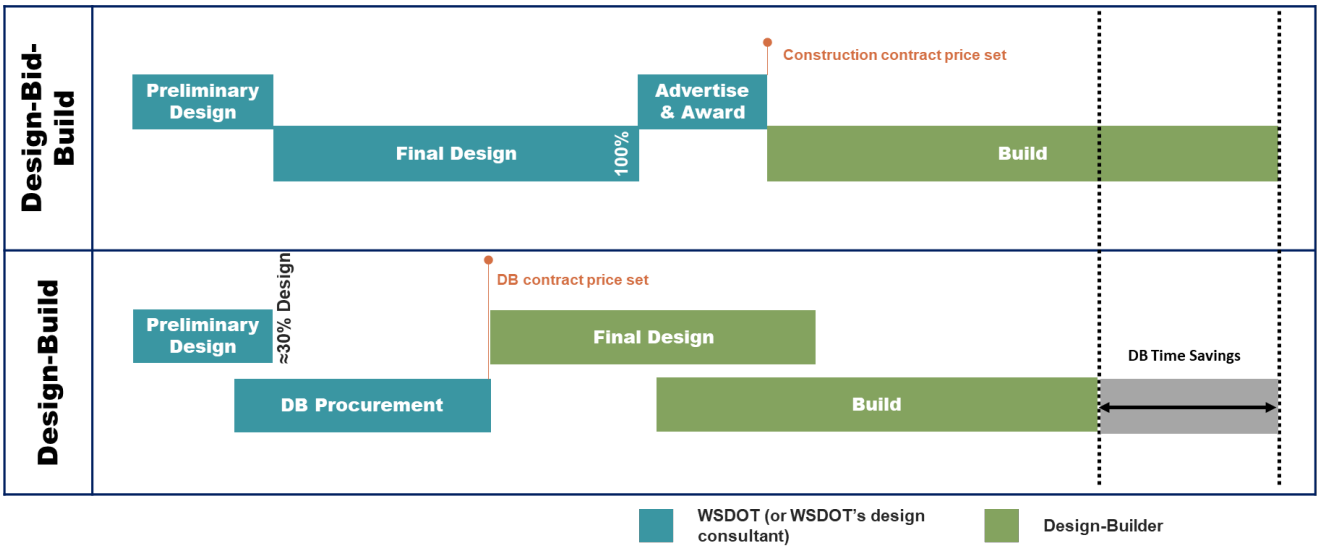
Impact of Project Delivery Method Selection on Schedule, Cost, and Competition

Schedule Compression

8.1 In comparison to DBB, overall project durations tend to be reduced under alternative project delivery methods that allow for early contractor involvement and the overlapping of detailed design with construction.

8.2 For example, Figure 8.1 conceptually depicts how such schedule fast-tracking can occur with fixed price DB.

Figure 8.1: Potential Time Savings using Design-Build (Fixed Price)



8.3 National studies from the last 20 years comparing DBB with DB across multiple construction sectors have shown that use of DB can provide time savings. For example, a recent national empirical study comparing DBB with DB have shown that use of DB results in shorter design and construction durations for similar size projects compared to DBB.[2]

8.4 GC/CM and PDB also offer the potential to reduce the overall project delivery schedule. For example:

a) Neither method requires the owner to fully define the project's scope of work prior to engaging the GC/CM or design-builder. (In PDB it is common to bring on the design-builder at the start of programming or preliminary design; in GC/CM, the CM firm is typically engaged a bit later, at approximately 15 to 30% design.)

[2] Alternative Contracting Method Performance in U.S. Highway Construction, FHWA Publication No. FHWA-HRT-17-100, research performed by the University of Colorado, Boulder, the University of Kansas, and Hill International, Inc., April 2018. https://des.wa.gov/sites/default/files/2024-05/WDSOT-PDMRTF-TechBrief-FHWA-AltContMethodPerformance-04-2018.pdf

b) Because the GC/CM and PDB firms are selected primarily on the basis of qualifications and management plans (rather than complete design solutions and fixed prices as is the case with traditional DB), the owner can avoid a lengthy procurement process.

c) The early engagement of the GC/CM during the preconstruction phase provides opportunities to complete early construction work packages (e.g., clearing, demolition, site work, etc.) and procurement of long-lead items, before design of the entire project is complete.

8.5 Some transportation owners, however, have indicated anecdotally that the higher level of stakeholder collaboration and the iterative, consensus-driven design process often associated with both GC/CM and PDB delivery can act to prolong the design phase, and failure to reach agreement on construction costs can further delay the project.

Cost Performance

8.6 A national study[3] comparing "award growth" (calculated as the difference between the contract award price and the Engineer's Estimate) for DBB, fixed-price DB and GC/CM projects indicated that award growth is lowest for DBB projects, followed closely by DB, and highest for GC/CM projects.

a) The study did not provide causes for these results, but one hypothesis is that the lower award growth in DBB projects could be a result of having 100% complete designs to estimate/bid and generally greater competition.

b) Similarly, the higher award growth in GC/CM could result from the lack of competitive tension in the negotiated pricing process.

8.7 The same study also examined "cost growth" (calculated as the difference between the contract award value and final cost) and found that:

a) There was no statistically significant difference in cost growth between DBB, DB, and GC/CM.

b) However, the cost growth of the GC/CM projects was the lowest (suggesting that cost certainty is more accurate for GC/CM once a construction price is negotiated).

8.8 Regarding change orders, the study found that all the delivery methods experienced change orders related to unforeseen conditions and other risk events. However, industry appears to be absorbing some of the pricing risk on alternative delivery methods, as reflected in reduced change order cost growth for unforeseen conditions, plan quantities, and design errors and omissions with both fixed-price DB and GC/CM.

8.9 Anecdotal feedback received from industry and owners as part of an ongoing national research study4 supports that progressive PDMs (GC/CM and PDB) typically result in reduced risk pricing, but the owner may ultimately pay more for the work compared to using a fixed-price competitive procurement process.

Competition

8.10 For all delivery methods, higher numbers of bidders have been shown to result in more competitive pricing compared to the Engineer's Estimate. Procurement regulations for public sector

[3] Alternative Contracting Method Performance in U.S. Highway Construction, FHWA Publication No. FHWA-HRT-17-100, research performed by the University of Colorado, Boulder, the University of Kansas, and Hill International, Inc., April 2018. https://des.wa.gov/sites/default/files/2024-05/WDSOT-PDMRTF-TechBrief-FHWA-AltContMethodPerformance-04-2018.pdf
[4] NCHRP 23-22, Alternative Project Delivery Methods: Assessing and Allocating Risk to Increase Competition

construction throughout the U.S. generally require at least three bidders to achieve a reasonable level of competition. An agency must typically justify an award when fewer than three bidders submit.

8.11 Nationally, the overheated construction market experienced in recent years has allowed industry (designers, contractors, and subcontractors) to be more selective in the projects they pursue and aggressive in bidding high contingencies, particularly for large and/or complex projects with significant risks.

8.12 By their very nature, traditional DB and P3 projects, which require proposers to commit to a lump sum price with minimal design, can be viewed by industry as being particularly high risk, especially when material and labor costs are volatile, and the project duration extends multiple years.

8.13 Very large and complex fixed-price DB and P3 projects above certain $ thresholds (>$500M) have attracted fewer qualified bidders and are more likely to result in higher award costs relative to the Engineer's Estimate.

8.14 GC/CM and PDB have been shown to generate significant interest from industry. However, the lack of competitive tension in negotiations with the selected GC/CM or PDB team to reach a construction phase price may result in higher costs if management and cost controls are not in place during preconstruction.[5]

Aligning Project Goals with PDMs

8.15 No single delivery method is appropriate for *all* projects and situations.

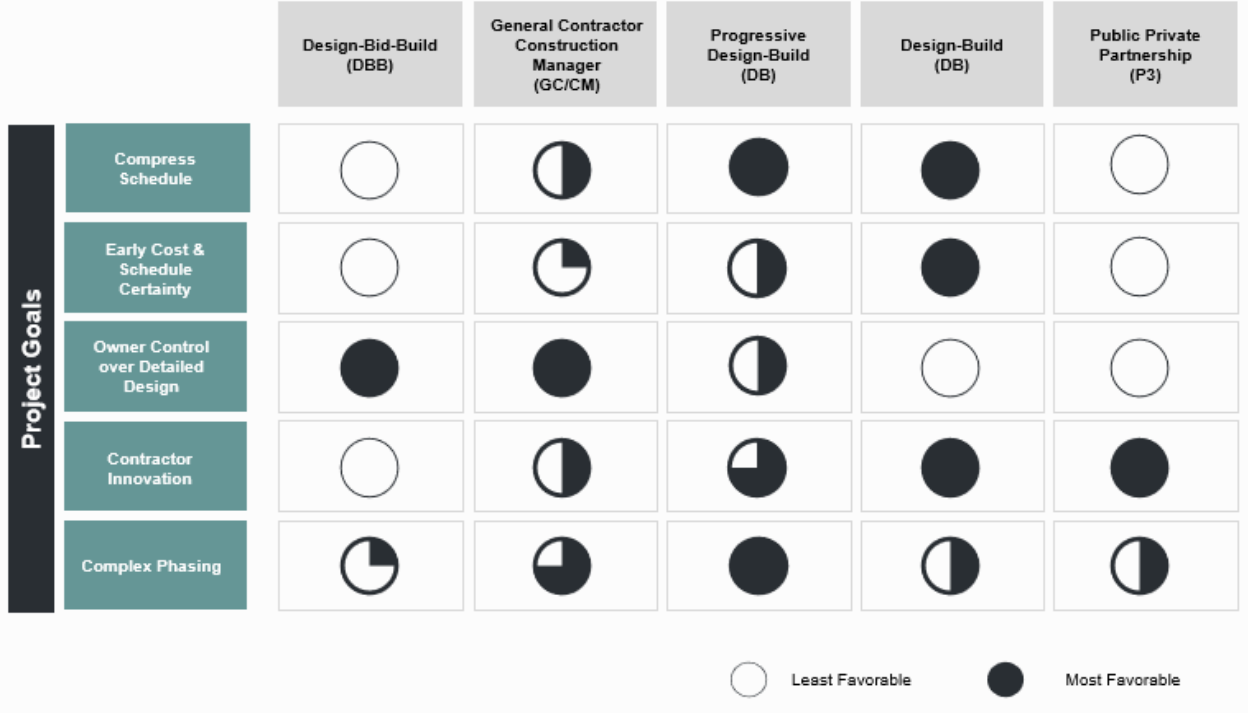
8.16 All project delivery methods hold unique advantages and disadvantages that should be carefully weighed when considering how to best deliver a particular project.

8.17 When considering which method to use to deliver a particular project, a good starting point entails prioritizing project goals (e.g., accelerated schedule, early cost certainty, innovation, etc.), as some methods are more likely to advance certain goals than others.

8.18 Figure 8.2 provides a high-level summary of common project goals along with the perceived applicability of different methods in the context of these goals.

[5] NCHRP 23-22, Alternative Project Delivery Methods: Assessing and Allocating Risk to Increase Competition

Figure 8.2: Aligning Project Delivery Method Selection with Project Goals



Part 2

Assessment of WSDOT's PDM Practices

9. **Cost Estimating**
10. **Competition**
11. **Procurement Practices**
12. **Project Delivery Method Selection**
13. **Project Administration**
14. **Summary of Findings and Recommendations**

9. Cost Estimating

Overview

9.1 A public owner's ability to develop accurate and reliable Engineer's Estimates is critical to ensuring informed financial decision-making, and effective review and comparison of bids received.

a) Underestimating can cause costly project delays as additional funding is arranged to cover the contract costs.

b) Over-estimating may result in inefficient allocation of already scarce funding that could have been applied to other projects.

c) Consistent under- and/or over-estimating can erode the public's confidence in the owner's ability to assess the fair and reasonable cost of construction.

9.2 Best practices that owners have implemented to support their estimating and budgeting practices include:

a) Implementation of a standardized and documented cost estimating procedure that considers:

i) Explicitly identified risks and uncertainties to establish appropriate cost contingencies

ii) Market conditions (projected labor, material and equipment availability)

iii) Historical cost information to validate estimate realism

b) Establishment of a dedicated department or unit to support the estimating process

c) Maintenance of a historical cost database and tracking of construction cost indices

d) Regular outreach to industry to understand current market forces and industry's appetite for risk assumption

9.3 Despite largely implementing such practices, WSDOT has in recent years experienced significant variances between its Engineer's Estimates and bid pricing.

9.4 Based on interviews with other public owners, WSDOT is not alone in experiencing award growth[6], a trend that can be attributed in part to heated market conditions that have allowed industry to become highly selective in the projects they choose to pursue. Managing limited competition and high bid prices has become a common owner challenge.

9.5 Nevertheless, as discussed below, a review of WSDOT's cost data[7] for the projects it initiated between January 2017[8] and May 2024 suggests that some issues with WSDOT's estimating practices predate the labor and material escalation seen in the aftermath of the Covid pandemic.

[6] "Award growth" as used herein is defined as a positive between bid or contract award values and the Engineer's Estimate.

[7] The data set used for HKA's analysis included 815 DBB, 33 DB projects, and 2 PDB projects awarded between 2017 and May 2024.

[8] 2017 was used as the starting point for the project sample set to account for any policy or practice changes implemented by WSDOT following the 2016 JTC Study on WSDOT's Design-Build Delivery program.

9.6 In the subsections that follow, HKA first presents findings derived from its data analysis and engagement with stakeholders and then offers recommendations for WSDOT to improve the reliability of its estimates.

Observations

Estimating Accuracy and Award Growth

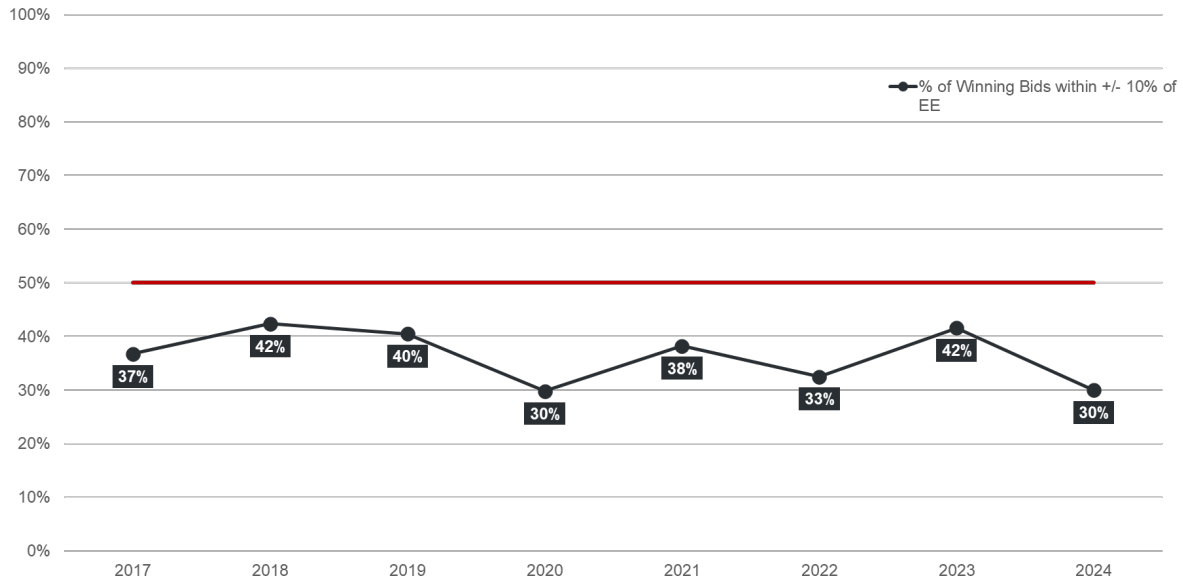
9.7 Although this study primarily focuses on WSDOT's alternative project delivery program, HKA also analyzed cost data from WSDOT's Design-Bid-Build (DBB) program to establish a baseline for comparing estimating accuracy on DB projects. The DBB cost analysis is presented first, followed by the cost analysis on DB projects.

Design-Bid-Build Projects

9.8 According to FHWA guidelines[9], a DOT's overall programmatic estimating accuracy can be assessed by comparing the Engineer's Estimate to the low bid. As a guide, FHWA recommends that the Engineer's Estimate fall within +/- 10% of the winning bid for at least 50% of the projects bid over a certain period.

9.9 Testing WSDOT's historic DBB estimating performance against this measure (and using a calendar year as the analysis period), Figure 9.1 indicates that WSDOT has not achieved the 50% threshold in any year from 2017 to 2024.

Figure 9.1: Percent of Awarded Bids within +/- 10% of the Engineer's Estimate



Key Takeaway: In no year since 2017 has WSDOT met FHWA's guideline for estimate accuracy, which suggests that the Engineer's Estimate should be within +/-10% of the winning bid for at least half of the projects an agency bids over a certain period of time.

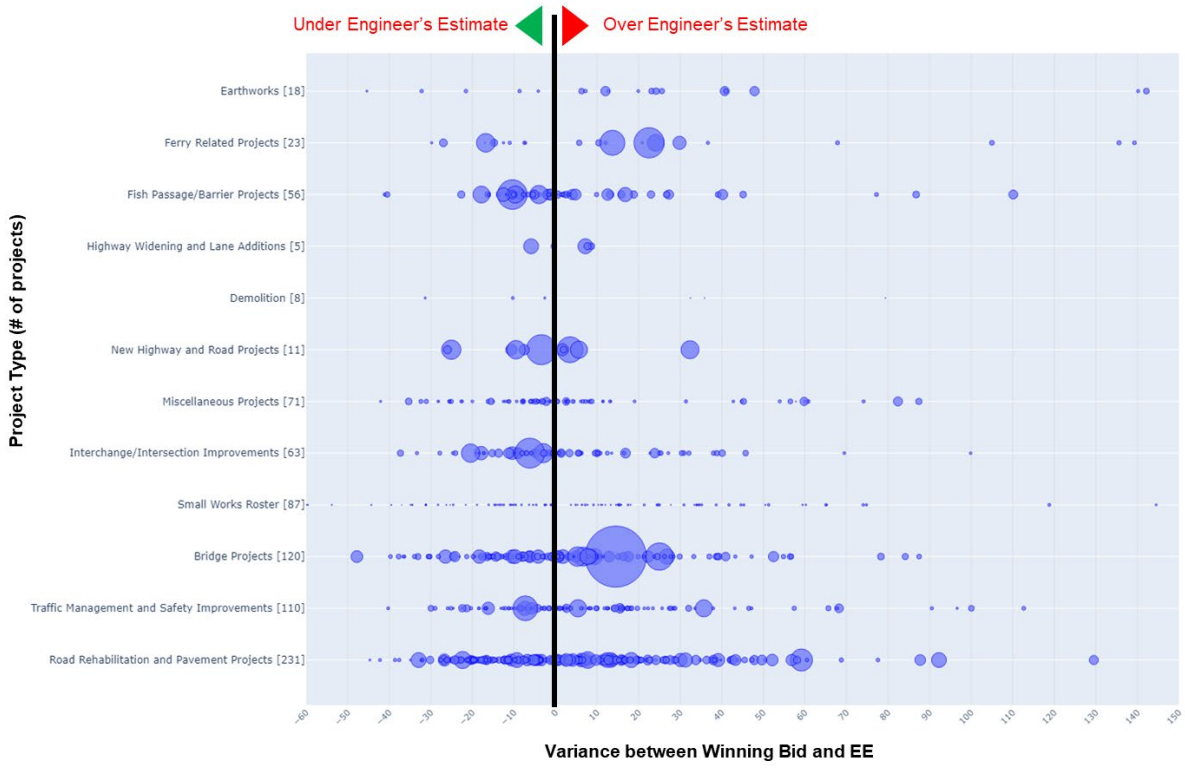
[9] "Guidelines on Preparing Engineer's Estimate, Bid Reviews and Evaluation". Federal Highway Administration. October 7, 2021.

9.10 Figure 9.2 takes a closer look at this DBB data to determine what, if any, impact project size or type may have on WSDOT's estimating accuracy.

a) In the figure, each project is represented by a circle that has been sized to reflect its relative contract value.

b) In addition to contract value, the chart also categorizes projects according to their primary scope elements to determine if any trends can be identified between the extent and direction (over- vs. under-estimated) of the variance and factors such as project scope and size.

Figure 9.2: Variance between Winning Bid and Engineer's Estimate (by project type and size)



Key Takeaway: Large variances between the winning bid and the Engineer's Estimate do not appear to be limited to projects of a particular type or size (with project size represented by the relative size of the circle used to denote each project).

9.11 Several observations can be drawn from the data shown in Figure 9.2:

a) WSDOT appears to be both over- and under-estimating its DBB projects. As noted previously in paragraph 9.1, both situations can be problematic, though not necessarily to an equal degree.

b) The variability between the low bid and the Engineer's Estimate does not appear to be limited to a particular project type.

c) The variability between the low bid and the Engineer's Estimate does not appear to be limited to either small or large projects.

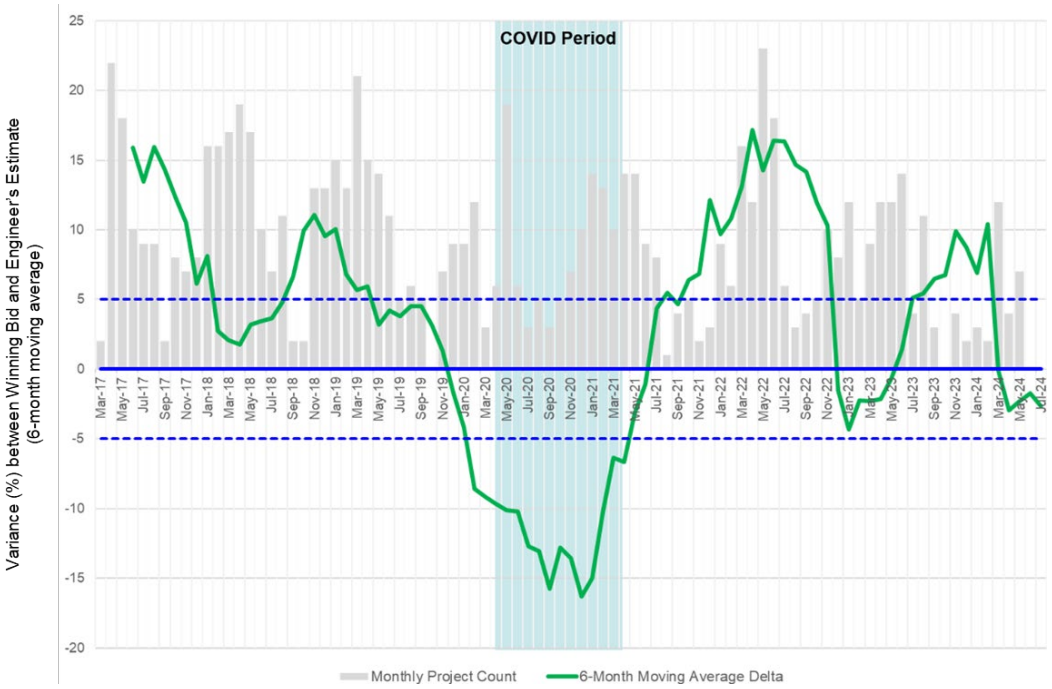
9.12 As a final consideration, HKA assessed if the Covid pandemic had any discernible impact on the variability between the Engineer's Estimate and winning bid.

9.13 Figure 9.3 displays the average variance between the winning bid and the Engineer's Estimate as a 6-month moving average, as well as the number of contracts awarded each month.

a) As shown, during the Covid period, bids were coming in much lower than the Engineer's Estimate, perhaps driven by an unsaturated construction market that was eager to take on WSDOT work in uncertain times when other opportunities were relatively limited.

b) Post- Covid, as bidders faced higher material costs amidst supply chain issues, bids began to come in much higher than the Engineer's Estimate.

Figure 9.3: Average Variance between Winning Bid and Engineer's Estimate (considering Covid period)



Key Takeaway: WSDOT experienced a period of bids coming in far below the Engineer's Estimate during Covid. As the industry emerged from Covid facing volatile material and labor costs, bids began to come in much higher than WSDOT estimated.

9.14 As WSDOT typically uses DBB on its smaller projects, individual project variances tend to escape notice. This is likely because:

a) Project-specific award growth, when viewed in terms of real dollars rather than as percentages, generally entail relatively minor amounts.

b) When variances are aggregated at a program-wide level, the positive and negative variances largely cancel one another out.

9.15 Nevertheless, these variances are notable because DBB projects are typically viewed as being less challenging to estimate than DB projects for the following reasons:

a) Because the final Engineer's Estimate for a DBB project can be based on 100% design documents and fixed quantities, they typically entail less risk and uncertainty than that of a comparable DB project procured with less than 30% design.

b) At the time DBB projects are advertised, risks are typically fully defined and included in the development of the bid item quantities. Differences between the Engineer's Estimate and the bids produced by contractors are thus generally limited to item pricing and how the parties perceive the market conditions that drive these prices.

c) In contrast, significant risks and design development allowances may remain at the time a DB project is procured. If the owner and industry perceive the remaining risks on a DB project differently, wide variances between the Engineer's Estimate and DB proposal prices may result. If prospective design builders perceive that too much risk is being transferred to industry, they will likely include a high bid premium or will opt to drop out of the competition all together.

Design-Build Projects

9.16 Between January 2017 and May 2024, WSDOT initiated 33 DB projects, ranging in size from approximately $5 million to over $1.3 billion. Using this set of projects, HKA conducted various analyses,[10] to understand WSDOT's ability to produce reliable estimates of DB project costs.

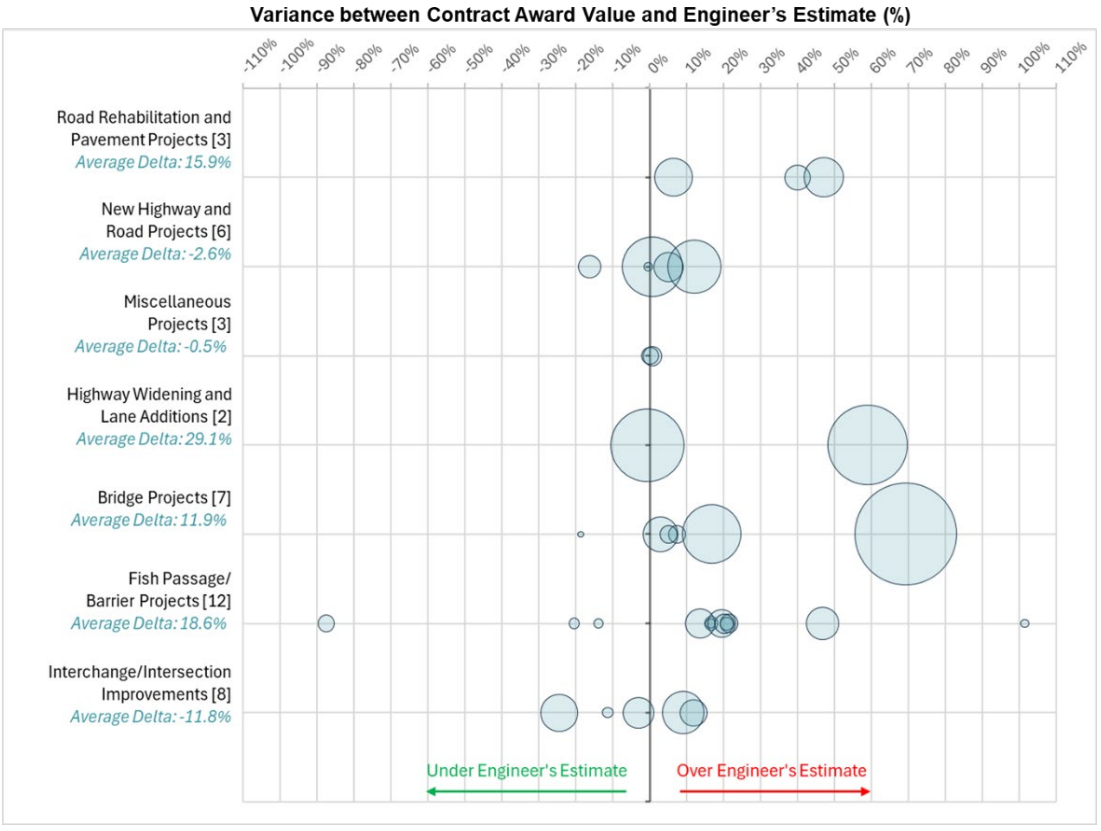
9.17 Figure 9.4 compares the contract award value to the Engineer's Estimate for each fixed price DB contract awarded between 2017 and May 2024.

a) Each project is represented by a circle that has been sized to reflect its relative contract value.

b) In addition to contract value, the chart also categorizes projects according to their primary scope elements to determine if any trends can be identified between the extent and direction (over- vs. under-estimated) of the variance and factors such as project scope and size.

[10] Note that due to the smaller number of DB projects, analyses similar to those shown in Figures 2.1 and 2.3 could not effectively be performed for DB.

Figure 9.4: Variance between DB Contract Award Value and Engineer's Estimate (by project type and size)



Key Takeaway: Larger projects appear to be experiencing higher levels of award growth.

9.18 As shown, variances of more than +/- 10% between the contract award value and the Engineer's Estimate are not limited to projects of a specific type.

9.19 Project size appears to be a more significant driver of variances, with very large projects experiencing increased levels of award growth.

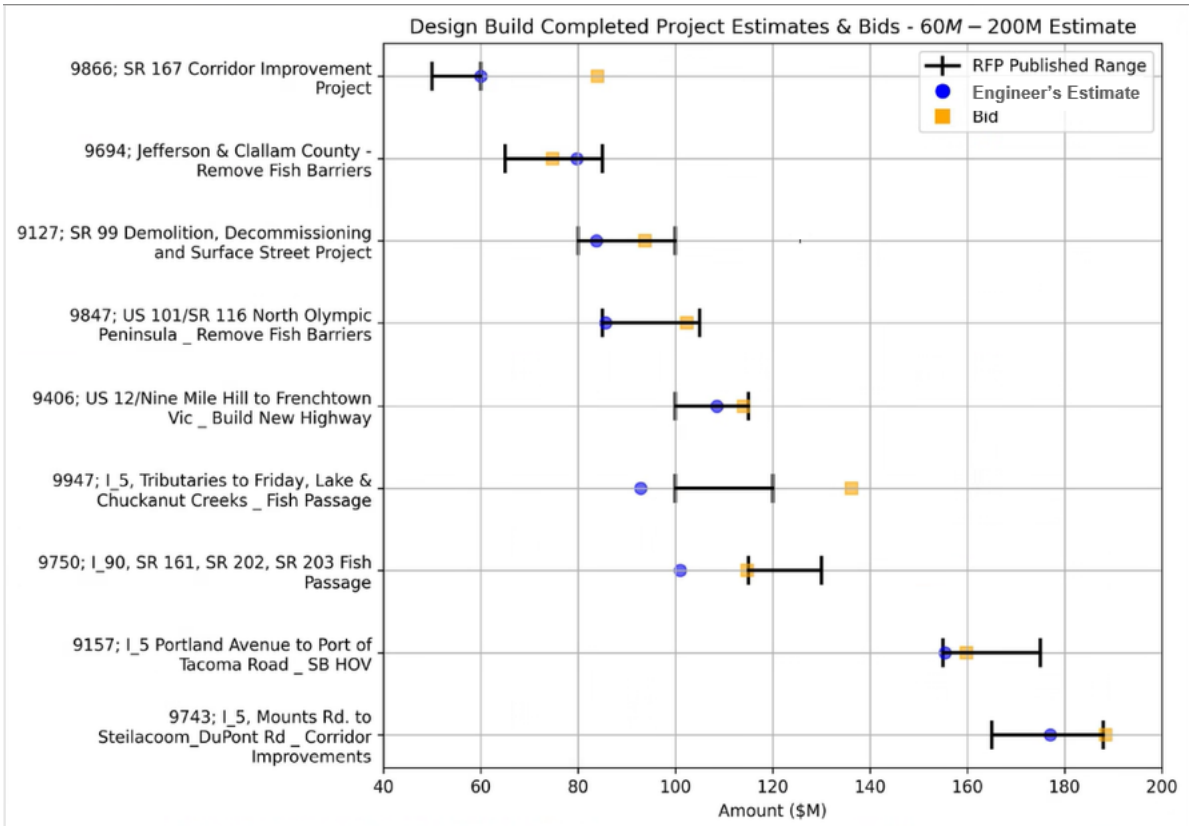
Variance between Published Range and the Engineer's Estimate

9.20 In its DB advertisement documents, WSDOT publishes an estimated range (or alternatively, an upset price) of the anticipated project costs.

9.21 Presumably, this published range has been informed to some extent by the Engineer's Estimate. However, a review of the advertisement documents for various DB projects revealed what appears to be some differences between the published "estimated range" included in the advertisement and procurement documents for certain projects and the associated Engineer's Estimate.

9.22 By way of example, Figure 9.5 displays the published range, the Engineer's Estimate, and the winning bid for a sample of projects.

Figure 9.5: Variance between DB Contract Award Value, Published Range and Engineer's Estimate



9.23 A review of the data shown in Figure 9.5 suggests there is no direct correlation between the Engineer's Estimates and the published ranges. Estimates run the gamut from being completely outside of the published range to being within the range, but close to the high end, low end, or middle of the range.

9.24 This observation raises several questions. For example,

a) How are the published ranges derived?

b) What staff are involved in their development?

c) Are the ranges consistent with the legislative budget?

d) Are the ranges based on, or at least informed by, the output of WSDOT's statistical risk-based estimating process (i.e., the P45 or P85 values used to establish the operating and legislative budgets in the draft EO)?

9.25 Guidance addressing how the ranges are to be developed does not appear to be set forth in any WSDOT document, including the Cost Estimating Manual for Projects (January 2023), Cost Estimate Validation Process (CEVP), DB Manual, and the Secretary's Executive Order Number: E 1053.02, Project Risk Management and Risk-Based Estimating.

9.26 Furthermore, based on interviews with WSDOT staff, there does not appear to be any consistent method of establishing the ranges. Instead, project teams seem to have significant latitude to develop a range that, in their engineering judgment, best reflects the level of design, project risks, and market conditions at the time of advertisement.

Industry Perception of Award Growth on WSDOT Projects

9.27 A review of the data shown in Figure 9.5 also reveals that in certain instances the variance between the upper end of the published range is much closer to the winning bid than the Engineer's Estimate, leading to questions regarding whether the published range influences how industry bids projects, and if the high end of the range would serve as a better baseline for measuring award growth.

9.28 In response to related inquiries, the industry stakeholders interviewed as part of this study indicated that they found:

a) The WSDOT practice of publishing the anticipated cost range of projects to be helpful in conveying what WSDOT thinks a project is worth.

b) While this understanding does not impact their own cost estimating of the work, it may affect their pursuit decisions if their estimates are substantially higher than the published range. As one contractor noted:

> *If we do a green sheet estimate and our number is more than 5% higher than the published range, then we need to decide whether to spend additional resources on chasing a project we likely will not win or that alternatively could be canceled if all bids come in outside of the WSDOT budget.*

9.29 Regarding the wide variances often seen between WSDOT's published ranges and the winning bid, several industry stakeholders questioned whether WSDOT adequately considers the following when developing its Engineer's Estimates:

a) Contractor overhead costs, including the cost of complying with federal/state regulations and policies (for example, diversity goals, local hires, PLAs, apprenticeship programs, equipment standards for emissions, environmental regulations, Buy America, etc.);

b) Subcontractor / trade contractor inflation, including that of DBE firms;

c) The extent to which WSDOT is attempting to shift risk to industry (particularly the risk of geotechnical conditions and utilities as discussed in Section10 of this report); and

d) Project scale and schedule (and the risk of price escalation over the course of a 4-to-6-year project).

Recommendations

9.30 Despite having largely implemented leading practices in cost estimating, WSDOT has been experiencing a trend of significant variances between its Engineer's Estimates and bid prices, particularly on large DB projects, since before the Covid pandemic.

9.31 In recognition of this issue, WSDOT is reportedly planning to establish a working group to refine its estimating processes and procedures.

9.32 HKA sees the establishment of this estimating working group as a constructive first step that has strong potential to drive and maintain meaningful improvements. Drawing from the observations

discussed above, HKA offers the following recommendations regarding the working group's composition, focus areas, and deliverables.

a) **Working Group Composition.** To maximize the impact and sustainability of its process refinements, the working group should involve individuals representing the following groups:

- The Estimating Office
- Capital Program Development and Management
- Subject Matter Experts at Headquarters
- Regional Design and Construction Engineers / Project Managers working on GC/CM, DB and PDB projects

b) **Potential Focus Areas.** The working group should consider conducting the following reviews and assessments:

i) *Compare CRA/CEVP reports to the final Engineer's Estimate and published range to determine the extent to which risk analysis tools are being used to develop project estimates and budgets.*

WSDOT is viewed by its DOT peers across the country as a leader in cost risk management, with several agencies adopting elements of WSDOT's CRA/CEVP procedures to enhance their own estimating and contingency development practices. However, in reviewing WSDOT's DB project information, there often appears to be a lack of any connection between risk analysis results and the final Engineer's Estimate and published range.

The working group should investigate what is causing these disconnects and develop targeted solutions and guidance in response. For example:

- **Timing issues.** In a time of high market volatility, timing differences between the Engineer's Estimate and the bid opening date can result in significant variances. The working group should explore if and how WSDOT risk analyses have attempted to capture the escalation and market risks that may emerge during the 6 to 12 months that could elapse between advertisement and bid opening for a typical DB two-step best value procurement process. Such a review should be used to determine the cost/benefit of conducting a refresh of the CRA/CEVP analysis closer to advertisement.

- **Organizational / Cultural Issues.** If instead of (or in addition to) timing issues, WSDOT project teams are not fully using risk analysis results due to distrust of the process and associated results, siloed thinking, or other organizational issues, the working group should consider engaging an independent cost estimating firm to develop a contractor-style estimate of the work as an alternative to the CEVP process.

ii) *Conduct a line-item comparison of Engineer's Estimates and contractor bids and/or cost-loaded schedules (Schedule of Values Layout) to identify any project elements that WSDOT consistently underestimates or overestimates.*

For any line items that consistently show discrepancies across projects, the working group should investigate the estimating process and the reliability of the underlying cost database. Particular attention should be given to whether the database relies on outdated historical data or exhibits cost biases driven by economies of scale (small vs. large quantities).

iii) *Gain insight / knowledge into contractor pricing through working group interaction with the Independent Cost Estimator (ICE) as part of PDB negotiations and/or by examining the cost models that were created and agreed upon by the ICE and contractor as part of cost estimate alignment meetings.* The goal of this effort would be to help identify how contractors factor the following into their estimates:

- Cost of complying with federal/state regulations and policies (for example, diversity goals, local hires, PLAs, apprenticeship programs, equipment standards for emissions, environmental regulations, Buy America, etc.).
- Subcontractor/trade inflation, including that of DBE firms
- Project scale and schedule (the risk of price escalation over the course of a 4 to 6-year project)
- Bid premiums associated with risk elements shifted to the contractor

c) **Output.** As an outgrowth of these assessments, the working group should develop the following:

i) **Updated cost estimating and risk guidance:** The working group should establish clear guidance on the following topics areas (updating as appropriate, the Cost Estimating Manual, CRA/CEVP process, and DB Manual):

- Parameters for when to engage an ICE vs refresh the initial CRA/CEVP analysis
- Use of the CRA/CEVP results to help evaluate the cost/benefit of conducting more detailed preliminary engineering and site investigation to reduce uncertainty and risk premiums (and, as discussed further in Chapter 10, attract competition)
- Incorporation of a Contractor's view of costs and risk into the Engineer's Estimate to include appropriate risk premiums, escalation, and contractor overhead costs
- Development and documentation of the published range and final Engineer's Estimate

ii) **Rollout strategy** for this guidance, including training and mentoring

iii) **A performance monitoring or internal audit process** by which the working group periodically reconvenes and assesses the following to determine if further adjustments to the estimating guidance are needed:

- *Variance between the Engineer's Estimate and the contract award value*, including an assessment of whether the use of an ICE or a refreshed CRA/CEVP analysis prior to advertisement contributed to improved estimating accuracy.

- *Variance between the contract award value and the final project cost*, based on a statistically significant sample of recently completed projects. This analysis should serve as a feedback loop to refine the estimating process and evaluate whether the standard 4% change order contingency included in project budgets is sufficient for DB projects.

9.33 The recommendations set forth in Paragraph 9.32 are largely programmatic in nature, requiring a one-time cost to help the working group investigate and diagnose estimating issues and revise guidance. However, implementing these updates at the project level may require increasing project budgets as needed to account for any additional costs associated with the following:

a) Risk consulting services to refresh the CEVP assessment closer to the advertisement date and/or ICE services to prepare a contractor-style estimate of project costs

b) Pre-procurement outreach with the greater construction contracting community, including stakeholders, subcontractors, and small businesses, to obtain feedback on risks and the impact of the risk allocation on potential project costs

c) Additional site investigations and preliminary engineering to reduce estimating uncertainty and associated risk premiums

10. Competition

Overview

10.1 It is generally understood that as the number of bidders vying for a contract increases, it typically leads to a decrease in bid prices. Conversely, when a project does not generate sufficient interest, bid prices often exceed the Engineer's Estimate.

10.2 In recent years, this relationship has unfolded both in Washington State and on a national level, as a booming construction market has allowed industry (designers, contractors, and subcontractors) to be more selective in the projects they choose to pursue and aggressive in bidding high contingencies, especially for large and/or complex projects with significant risks, which is frequently the case with DB projects.

10.3 The designers and contractors HKA interviewed as part of this study cited several factors that can influence their decision-making regarding whether to pursue WSDOT project opportunities, particularly for traditional, fixed-price DB projects. Such considerations included the following:

a) Project size and complexity

b) Reasonableness of the intended risk allocation strategy (including the extent to which WSDOT has performed a sufficiently robust field exploration program to reduce uncertainty)

c) Availability of suitable teaming partners, including DBE firms

d) Reputation and experience of the WSDOT project team (internal staff as well as general engineering consultants)

10.4 In the subsections below, HKA explores these factors as well as potential strategies to help enhance competition, as informed by leading practices identified in the literature[11] and through the peer agency outreach conducted as part of this study.

Observations

10.5 In the following subsections HKA addresses the various factors that industry stakeholders cited as reasons for their decisions to refrain from pursuing certain WSDOT projects (or, alternatively, to incorporate high-risk premiums into their pricing).

Project Size / Packaging

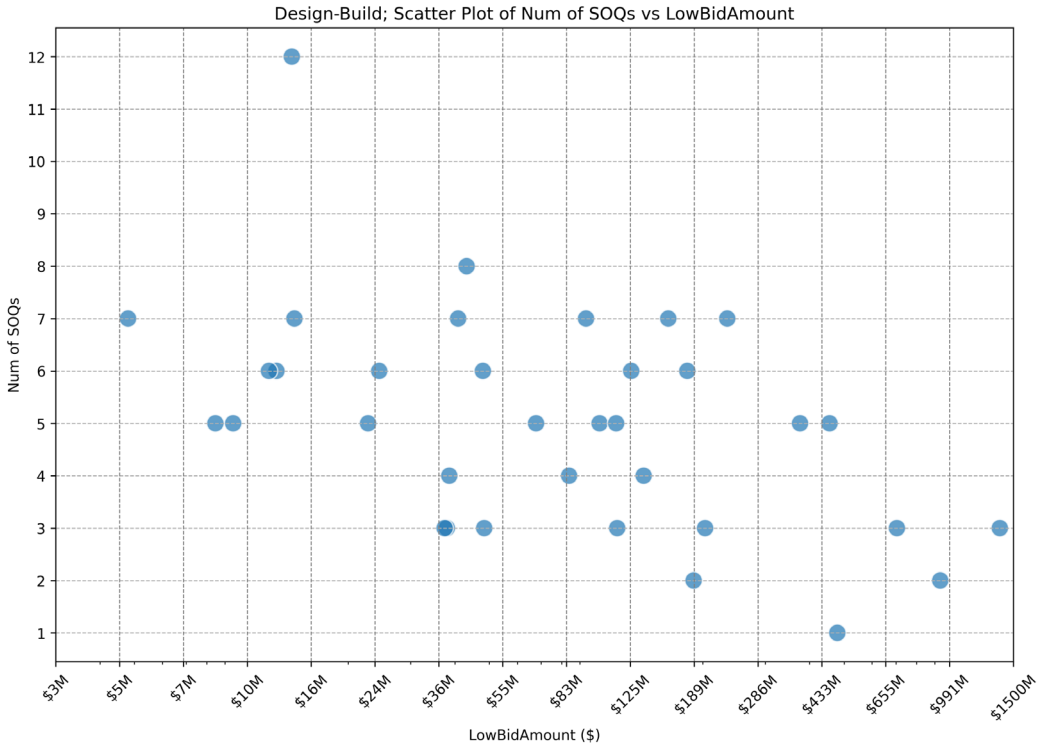
10.6 Several owners interviewed as part of this study noted that as their projects increase in size and complexity, it can be difficult to attract sufficient competition.

10.7 To see if WSDOT's DB program follows a similar trend, Figure 10.1 plots the number of prospective bidders[12] that WSDOT's DB projects attracted between 2017 and May 2024.

[11] For example, see *NCHRP 23-22, Alternative Project Delivery Methods: Assessing and Allocating Risk to Increase Competition*

[12] Because WSDOT typically shortlists down to three proposers for its DB projects, competition is measured by the number of Statements of Qualifications (SOQs) received in response to the initial Request for Qualifications step.

Figure 10.1: Competition on WSDOT's DB Projects, by Project Size



Key Takeaway: Competition for WSDOT DB projects tends to decrease as project size increases, consistent with national experience.

10.8 As shown in Figure 10.1, competition for WSDOT DB projects tends to decrease as project size (and presumably risk profile) increases, consistent with national experience.

10.9 This observation also aligns with the concerns voiced by several industry stakeholders, who cited project size as being a key factor that can influence their decision to not pursue WSDOT work.

a) Multiple contractors indicated that if a project were to exceed $200M, they would be required to form a joint venture with another entity to perform the work due to capacity limitations, risk appetite, and corporate policy.

b) Moreover, they noted that large projects that extend multiple years can be extremely difficult to price given volatile material and labor costs and therefore do not align with their firm's risk appetite.

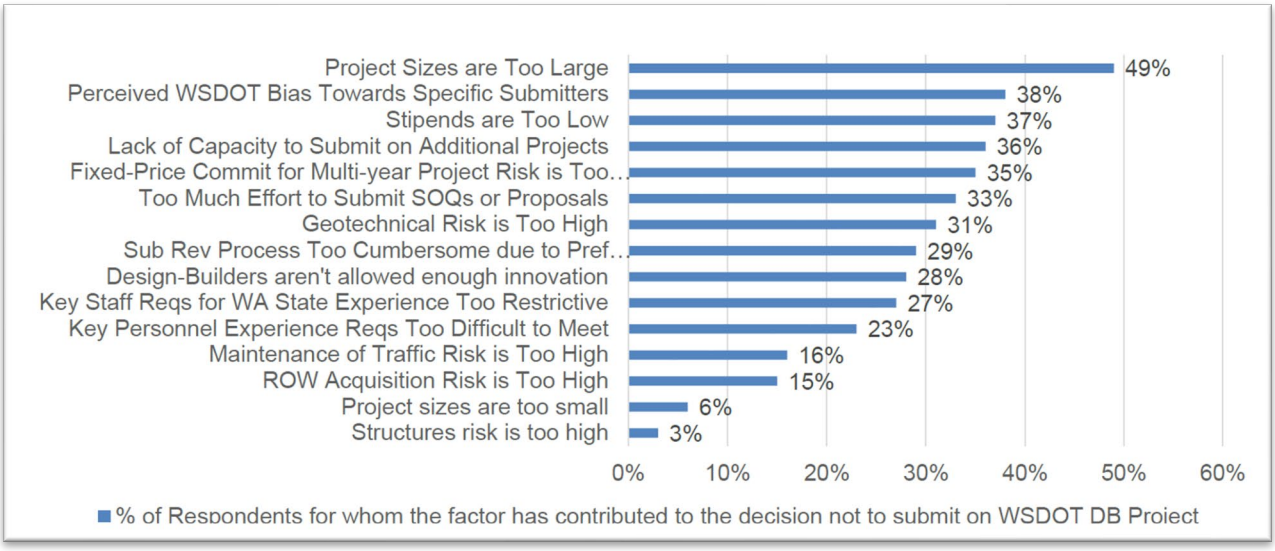
c) Conversely, larger contractors expressed hesitation to pursue smaller DB projects (e.g., less than $20M), explaining that it can be difficult to develop competitive price proposals that still cover their overhead costs. (In such cases, they suggested that WSDOT consider exploring whether such work can be "bundled" to create a larger project or program of projects.)

10.10 Questions regarding the size of WSDOT DB projects are not new. In 2023, WSDOT surveyed designers and contractors to identify factors that can influence their decisions to pursue WSDOT DB projects. As shown in Figure 10.2,

a) Out of 97 responses received, 49% identified "Project sizes are too large" as being a key reason for not competing on WSDOT DB projects.

b) Similarly, 35% of respondents cited the risk of agreeing to a fixed price for a multi-year project as a contributing factor.

Figure 10.2: Factors contributing to a decision to not submit on WSDOT DB projects
Source: WSDOT/AGC/ACEC Design-Build Committee. Survey Results: Industry Interest in WSDOT Projects. September 7, 2023



Risk Allocation

10.11 WSDOT's DB Manual published in February 2022 takes a measured approach to risk allocation. For example, regarding site conditions risk, the Manual states:

> *Certain site condition responsibilities can be allocated to the Design-Builder provided they and any associated third-party approval processes are well defined. However, unreasonable allocation of site condition risks result in high contingency pricing by the Design-Builder. At a minimum, site investigations should be performed by WSDOT to minimize overall project risk and provide the necessary base information for Proposers to complete their pursuit designs without redundant investigations being performed by each Proposer.*

10.12 Nevertheless, several examples of risk transfer strategies (e.g., "Geotechnical Risk is Too High," "Maintenance of Traffic Risk is Too High," etc.) are included among the factors identified in Figure 10.2 as influencing contractors' decisions to not pursue certain WSDOT DB projects.

10.13 These survey findings align with feedback HKA gathered through interviews with industry stakeholders, the majority of whom expressed the view that WSDOT, in recent years, has strayed from the balanced risk allocation strategies described in its Manual towards increased use of risk transfer methods that may place contractors at risk for factors beyond their control. As a result, several contractors noted that they had refrained from pursuing recent large DB projects such as the Brickyard and SR 520 projects.

10.14 Examples of WSDOT risk allocation practices identified by industry interviewees as having the potential to adversely impact both competition and pricing include the following:

a) **Geotechnical / Site Conditions**

i) The prevailing opinion among industry stakeholders is that WSDOT does not perform a sufficiently thorough field investigation program (with enough borings and lab/field testing) to allow contractors to interpret site conditions with confidence.

ii) Furthermore, WSDOT's Geotechnical Baseline Reports often direct bidders to assume highly conservative and thus unrealistic site conditions (e.g., the water table being at ground level despite field data showing it to be several feet below the surface).

iii) As these unlikely, yet conservative, assumptions will then form the basis for evaluating differing site conditions claims, bidders must choose to either develop what they think to be a competitive price based on their own assessment of the true site conditions risk or to price the more conservative design assumptions that WSDOT has set forth in its RFP.

b) **Utility Coordination / Relocation Risk.** WSDOT DB contracts typically shift all responsibility (and risk) for utility coordination, including executing relocation contracts with utility owners, to the design-builder. Owner-provided utility information (included in the RFP) is for reference only, and the design-builder must verify and coordinate with utilities to accommodate utility relocations as the design evolves.

c) **Permitting**

i) Several interviewees indicated that it is challenging to find innovative solutions for WSDOT projects. They attributed this perception in part to WSDOT's practice of adopting a very narrow project footprint for NEPA purposes, which can impose unnecessary constraints on a project's design and constructability.

ii) WSDOT's involvement with the permitting process was described as very inconsistent. Responsibility is assigned to the design-builder, yet WSDOT's permitting group typically acts as the intermediary between the design-builder and the permitting agency, controlling the flow of communications. If the design-builder were able to participate with WSDOT in direct communications with the permitting agency, they could get a better idea as to what is truly needed to satisfy agency needs.

10.15 To help assess whether WSDOT's risk allocation practices might be considered especially burdensome, HKA interviewed other DOTs and reviewed the risk-related clauses included in their contract documents. As summarized in Table 10.1, this review indicated that approaches to risk allocation can differ significantly depending on project-specific circumstances and the preferences/risk appetite of the owner.

a) A comparison of WSDOT's practices with those outlined in Table 10.1 indicates that although WSDOT is not unique in its efforts to shift risk to the industry, alternative retention and sharing strategies are being implemented to foster a more balanced project risk profile.

b) For example, to help attract competition and avoid excessive risk premiums on large, fixed price DB projects, some owners have been moving away from their prior risk transfer approaches towards either:

i) Risk retention strategies by which the owner commits, for example, to a date certain for specific ROW or utility relocations, or

ii) Sharing strategies entailing deductibles, allowances, and contingency risk pools for geotechnical, utility, right-of-way or other potentially problematic risks.

Table 10.1: Risk Allocation Strategies Identified by Other DOTs

Risk	Contractual Risk Allocation Strategies		
	DOT Retains Responsibility	**Design-Builder is Assigned Responsibility**	**Shared Responsibility**
Site Conditions (Geotech) • Unexpected geotechnical site issues • Inaccurate or incomplete geotechnical data and reference information (e.g., site surveys, soil samples, boring data, hydrological studies)	• The owner conducts a robust field investigation and obtains as much geotechnical information as possible in advance of advertising the project to minimize geotechnical risks. • Differing Site Conditions (DSC) provisions are used to address unforeseen subsurface or concealed conditions. Typical DSC clauses require several steps including the contractor providing: - Timely notice to the owner, and - Proof that a DSC exists and could not have reasonably been avoided or mitigated by the contractor. • To determine the contractor's entitlement to a change order, the owner may ask for additional information and will compensate the contractor for additional costs and time through the change order process as appropriate.	• The typical risk transfer practice is to include geotechnical reports and data in the procurement documents as reference information only. Proposers are to make their own interpretations of site conditions and not rely on the accuracy or completeness of the reference information, in preparing their proposals. • Some Owners have compensated shortlisted proposers for additional site/geotechnical investigations during procurement in return for waiving the contractor's right to claim for a DSC.	• Some owners have used deductible schemes whereby the design-builder is responsible for costs up to a certain limit for each separate DSC occurrence (subject to a DSC aggregate deductible cap). The design-builder may then seek a change order for eligible DSCs above the cap. • Some owners are now using or considering using allowances, with the owner covering the allowance, and design-builder picking up costs over the allowance amount (the inverse of having the contractor responsible for an initial deducible amount and the owner paying for costs above the deductible limit). The intent of such an allowance scheme is to incentivize contractors to be innovative, given the potential impact that the DSC risk can have on designs. • Other owners (e.g., VDOT) are using or considering the use of a post award scope validation period with caps to limit the contractor's bidding risk for DSCs. The DB contractor is provided with a certain time period (e.g., 90-120 days) to perform additional subsurface investigations and identify any defects, errors, and inconsistencies in documents, or changed subsurface conditions, which may result in adjustments to the scope and/or budget.

Risk	Contractual Risk Allocation Strategies		
	DOT Retains Responsibility	**Design-Builder is Assigned Responsibility**	**Shared Responsibility**
Utilities Utility conflicts, relocation of unidentified utilities, or identified utility relocation impacts	• To the extent possible, the owner addresses utility relocation early in the project development phase for higher risk projects and completes utility relocation work before procurement. • If utilities cannot be relocated in advance of procurement or unknown utilities are discovered or are in a substantially different location than shown on plans, the design-builder may be eligible to a change order due to the extra work or a critical delay. • Similarly, the design-builder may be eligible for a change order or a time extension resulting from the failure of a utility to relocate its utility in accordance with an Advance Utility Relocation Agreement with the owner.	• The design-builder is required to coordinate with utilities. Particularly if a utility was a "non-prior right," the design-builder is responsible for utility agreements, utility adjustment work and whatever costs and time are necessary for relocation. • The design-builder is not entitled to a change order for adjustment work that was initially anticipated to be performed by the utility owner.	• If it is not possible to relocate utilities in advance, shared risk strategies are considered whereby the design-builder is responsible for an initial deductible and the owner pays for utility-related costs above the cap. • Along with deductibles, allowances are also being considered for certain utilities, including potential incentives for cost sharing of any unused allowance amounts.
Right-of-Way (ROW) Delays caused by additional ROW acquisition not completed before project execution, or resulting from a need for additional property outside the permit boundary	Owners may commit to a milestone schedule for obtaining ROW parcels that would entitle the design-builder to additional time and/or compensation for critical delay impacts for late ROW acquisition.	• If ROW acquisition is not completed before contract execution, the design-builder is responsible for acquiring the remaining project ROW. • The design-builder will acquire ROW, including real property within the boundaries included in the NEPA schematics ("Schematic ROW") and any additional real property needed for the project outside the Schematic ROW. All project ROW must be acquired by the design builder in the name of the State. ROW acquisition responsibilities including surveys, developing ROW plans, legal costs for condemnation, appraisals, and negotiations are to be included in price proposals. • Most contracts specified that the design builder was responsible for any additional ROW acquisition and payment needed for its convenience/design changes.	ROW acquisition responsibilities and costs can be shared in various ways between the owner and design-builder. For example, • If ROW acquisition is delayed, the risk of delay following the expiration of a 365-day period approval of a condemnation package, on an individual parcel basis, is borne equally by each party for the first 100 days thereafter (i.e., for each parcel, DB contractor is entitled to one day of time extension for every two days of delay). • After the expiration of the first 100 days after the initial 365-day period, the design-builder is entitled to one day of time extension for each day of eligible delay.

Risk	Contractual Risk Allocation Strategies		
	DOT Retains Responsibility	**Design-Builder is Assigned Responsibility**	**Shared Responsibility**
Govt. Permits and Approvals Delays in obtaining required environmental or other permits and approvals	• The owner will obtain all initial owner-required permits and approvals prior to the award or commercial closing date including environmental decision documents approved under NEPA; USACE permits under Section 404 of the Clean Water Act; and local government agency approvals. • The owner will grant relief for critical delays caused by late government permits and approvals.	• In certain cases, the design-builder is assigned with obtaining governmental permits and approvals except for those that the contract documents expressly make the responsibility of the owner, particularly if revisions to permits are likely during the procurement process. • If the design-builder proposed Alternative Technical Concept or design solution requires changes to existing permits or approvals for any reason other than for an owner-directed change or other relief event, the design-builder is responsible for all costs and delays related to revised permits and approvals.	• The owner and design-builder collaborate on obtaining agreements or memorandums of understanding with permitting agencies that define approval requirements and processes, jointly develop permit applications, and conduct design reviews with permitting agencies based on a preferred alternative or ATC.

Site Investigations and other Pre-Procurement Practices

10.16 Many of the industry stakeholders' concerns related to WSDOT's risk transfer practices can be attributed, in part, to the uncertainties that may arise from an insufficient site investigation and third-party coordination effort conducted prior to procurement.

10.17 WSDOT and the other public owners interviewed as part of this study largely agreed that the more preliminary work that they can perform to define project requirements and identify and equitably allocate risks will help ensure that DB projects are constructable and biddable with manageable risks.

a) This means that the typical studies and investigations that an owner will perform for its traditional DBB projects – including design surveys, geotechnical field investigations, utilities investigations, environmental investigations, hydrologic and hydraulic studies, and third-party outreach and coordination activities – will generally still be necessary for a DB project.

b) The challenge, however, is to find the right balance in conducting the necessary front-end due diligence to adequately define project risks while not advancing the design so far that it acts to limit or constrain design-builder innovation.

10.18 Regarding WSDOT's DB practices, the industry stakeholders largely felt that WSDOT, particularly in recent years, has been erring on the side of not advancing its data collection, concept designs, and third-party coordination efforts far enough to:

a) Support an adequate assessment and pricing of project risks; and

b) Ensure projects are constructable as presented in the procurement documents (e.g., without requiring waivers from WSDOT's own standard requirements).

10.19 The resulting uncertainty regarding project conditions was cited by several industry interviewees as being:

a) A key factor driving their decisions to not compete for certain projects (particularly if site access or other procurement constraints prevented proposers from doing their own exploratory investigations), as well as a

b) A suspected cause for the wide variances often seen between WSDOT's Engineer's Estimates and the bids received.

DBE Goals

10.20 Another factor several industry stakeholders mentioned as having the potential to impact their pursuit decisions involves DBE goals and their confidence in meeting the participation percentages established by WSDOT.

10.21 In general, they viewed goals as often being too "aggressive" and questioned whether WSDOT, in establishing project-specific goals, was appropriately capturing the "true capacity" of the DBE contracting community.

10.22 Additional representative feedback heard from prime contractors includes the following:

a) The construction market, particularly in the Puget Sound region, is currently busy, if not at capacity, allowing potential DBE partners to be more selective about the opportunities they choose to pursue and the risks they are willing to assume (e.g., DBE firms tend to be more

reluctant to pursue DB opportunities where the scope and schedule are less certain than traditional DBB).

b) Given these market conditions, high goals may be overburdening the small business and DBE community, driving DBE price inflation and possibly causing good DBE firms harm as they are pushed to take on more work than they can reasonably manage. Such results are counterproductive to building a sustainable DBE industry.

c) WSDOT does not appear to be recognizing the very success of its DBE program.

   i) By maintaining goals at a high level, WSDOT may be overlooking the fact that several companies have graduated from the program and no longer meet the criteria for DBE status.

   ii) Prime contractors note that they are now contending with DBE firms that may lack the appropriate experience and/or resources to excel on a fast-paced DB project. To mitigate this risk, primes are including premiums in their bids to cover the potential need to expend additional resources on administration, mentoring and/or corrective action, or are refraining from bidding on certain projects all together.

10.23 In response to such concerns from the prime contracting community (which are largely consistent with those reported in WSDOT's 2024 Disparity Study), the Office of Equity noted the following:

a) WSDOT generally accommodates prime contractors who can demonstrate having made "good faith efforts" to meet DBE goals.

b) The challenge is that primes often fail to adequately document such efforts, leading to approval delays.

10.24 Other public owners in Washington State noted that, relative to traditional DB, PDB and GC/CM may provide the ability for primes to better tailor work packages to the strengths of the available DBE community.

Owner Reputation

10.25 All industry interviewees noted that the owner's reputation, including that of specific members on the owner's procurement and project management teams, can have a significant bearing on their decision to compete or pass on a project

10.26 In response to whether WSDOT could be seen as an "owner of choice", the stakeholder feedback was mixed.

10.27 While interviewees commended WSDOT's efforts to engage with industry on programmatic matters (e.g., DB Manual updates, contract templates, etc.), they also identified several issues regarding working with WSDOT:

a) The experience levels of WSDOT project staff assigned to DB projects vary significantly, along with their familiarity with DB best practices. Given staff attrition, WSDOT now has several relatively inexperienced project engineers, which can make it challenging to receive timely decisions.

b) There is also a perceived lack of consistency across project teams in administering procurements and applying contract terms, which also adds to process uncertainty.

c) WSDOT relies on general engineering consultants (GECs) for larger projects or when their staff is overextended. In some cases, GECs can hinder efficient progress by excessively commenting on design and other submittals. Redundant and/or conflicting design comments may occur when GECs are incentivized (under cost-plus fee agreements) to excessively comment on submittals.

d) WSDOT's internal culture and siloed organization does not foster the "best for project" mindset needed to promote innovation and cost and schedule efficiencies.

e) WSDOT's subject matter experts do not appear to coordinate their responses or reviews among different disciplines. Each discipline will independently review design submissions and may request preferential changes without considering the impact of such change on other disciplines.

Recommendations

10.28 To address some of the issues identified above, HKA offers the following recommendations:

a) **Early outreach to industry:**

i) WSDOT would benefit from sharing project pipeline information as early as 4 to 5 years in advance to allow contractors to forward plan staffing and resources, with the understanding that the biennial legislative budgeting process may result in changes to the long-term plan due to funding constraints or adjustments.

ii) To the extent that a large project could feasibly be phased or subdivided, WSDOT should start its outreach activities as early as possible in the project planning and development process to gauge market interest and identify any packaging strategies that could limit or expand competition. If such outreach is performed in a timely manner, it may still be possible prior to advertisement for WSDOT to repackage or refine the project scope (e.g., dividing a mega project into smaller projects or components) to better align with current market capacity and appetite for risk assumption.

iii) As part of pre-procurement outreach, WSDOT should also seek to obtain feedback from industry on risks and the impact of the risk allocation on potential project costs.

b) **Collaboration with other local public agencies on timing of large lettings.** As part of early outreach, WSDOT should consider engaging with other local agencies with large capital programs (e.g., Sound Transit and the Port of Seattle) to share project pipeline information to optimize the timing of major WSDOT project solicitations so as not to exceed the capacity of the industry.

c) **Site investigations:** The necessary level of front-end investigation and design will largely depend on project goals and the intended risk allocation strategy established for the project. For a fixed price DB procurement process to be effective, data collection and third-party coordination efforts should be sufficient for both the owner and prospective design builders to be able to adequately assess and price project risks.

i) To help determine the appropriate level of front-end investigation for a given project, consideration should be given to the following factors:

- The quality or level of information associated with potential project issues;

- Whether the current levels of project data could reduce project competition and/or increase risk premiums (a question that could be addressed through early industry outreach as described in Item a) above);
- Whether sufficient time and/or funding is available to support additional investigations;
- Whether additional investigations or coordination efforts conducted prior to advertisement would generate benefits worth their cost, and
- Whether it might be more beneficial to use a more collaborative delivery approach (e.g., PDB or GC/CM)

ii) To assist with the cost/benefit analysis of performing additional studies:

- WSDOT's risk management process (CRA/CEVP) could be used to evaluate the impact of performing varying levels of investigation and design before starting the procurement phase. The higher the risk rating, the more resources that should be applied to front-end investigation.
- The early outreach process described in Item a) above could also be used to obtain industry thoughts on the amount of front-end investigation and coordination that would help provide a realistic baseline of project conditions.

d) **Risk Allocation:** Key project risk areas noted by industry include excessive geotechnical risks due to overly conservative geotechnical design assumptions, utility risks related to verifying and coordinating with utilities to accommodate utility relocations, and risks related to coordinating with third party permitting agencies and other stakeholders (e.g., Tribes). For DB projects with a high-risk potential, WSDOT should conduct a careful review of its standard contract terms and conditions regarding retaining or transferring key risks. If the delivery decision is to use traditional DB for time savings or innovation:

i) If possible, conduct further site or geotechnical investigations and surveys prior to procurement to minimize uncertainty. Alternatively, short-listed proposers could be offered the opportunity to direct or conduct additional investigations.

ii) Review the final Geotechnical Baseline Report included with the procurement documents to ensure it:

- Presents conditions using clear and definitive language (i.e., using measurable or quantifiable terms consistent with the recommendations set forth in WSDOT/AGG/ACEC document Recommendations Regarding Geotechnical Baselines and Risk (January 2025))
- Minimizes or avoids unrealistic design assumptions or unnecessary constraints or restrictions that could increase costs.

iii) Include standard contract terms in the solicitation documents and use special one-on-one meetings to discuss risks and possible risk-sharing strategies with proponents.

iv) Consider retaining risks related to third party coordination and permitting, coordination of design, "prior right" utility relocations, site conditions, or other risks that cannot effectively be managed or mitigated by industry.

v) Alternatively, consider using a progressive delivery approach (PDB or GC/CM). Some owners indicated that they have had success in using the PDB and GC/CM delivery methods to collaborate with industry to determine an equitable allocation of risk and the most cost-effective risk mitigation plan.

e) **DBE Participation**. To enhance the ability of prime contractors to build competitive teams to meet DBE participation goals, WSDOT should consider the following strategies:

i) Sponsor regular networking events statewide for prime contractors to meet and network with DBE firms.

ii) Evaluate DBE firms on a case-by-case basis to evaluate their current capacity to perform the specific scopes of work for a given project. Consider factors such as the location of the project; whether the work is of a specialized nature; current WSDOT or other major projects underway that may impact the ability of DBEs to work on the project; and the entry of newly certified firms into the program.

iii) Develop and provide additional guidance on how contractors should document their Good Faith Efforts (GFE) to meet DBE goals. Guidance could include checklists, templates and examples, and training materials help to ensure that the steps to document GFE are clear, and WSDOT's process for evaluating submissions is transparent.

iv) On PDB or GC/CM projects, encourage the prime contractor to develop subcontractor work packages tailored to the specific DBE skills.

v) Use quantitative performance criteria to measure the overall success of the DBE program and evaluate its cost-effectiveness in reducing the systemic barriers. Implement and track performance benchmarks that might include:

- Increased number of prime contract awards to certified firms
- Increased variety in the industries in which DBE firms are awarded prime contracts and subcontracts
- Increased "capacity" of certified firms as measured by bonding limits, size of jobs, profitability, etc.

f) **Owner-of-choice:** WSDOT could reinforce its standing as an owner of choice, especially regarding APD projects, by implementing some of the longer-term initiatives described below.

The Design Build Institute of America (DBIA) emphasizes that successful project delivery whether using DB or PDB, embraces "teaming philosophies of integration and collaboration, as well as environments based on trust and flexibility — characterized by integrity and honest communication and mutual respect for and appreciation of diverse perspectives and ideas."

To this end WSDOT should:

i) Engage champions or mentors to provide ongoing training and mentoring for WSDOT staff managing projects using alternative delivery methods (e.g., DB, PDB, and GC/CM) to instill a "Best for Project" management approach in the WSDOT Project Engineer and dedicated project staff assigned to the project.

ii) Foster a collaborative working relationship between the WDOT and Contractor teams that focuses on problem solving and timely decision-making. For example, the Project

Engineer should work with the Contractor's team to collaboratively deconflict, prioritize, and manage WSDOT SME design reviews and comments to maintain schedule, assist with coordination of third-party reviews, and respond to request for information (RFIs) regarding scope of work clarifications. SMEs should not be relying on the design review process to further refine or add new requirements.

iii) Avoid having multiple points of contact between the Contractor and WSDOT staff or third parties. Set up the project organization to avoid silo effects so that the project team has final decision-making authority regarding design, construction, quality or other aspects of the project.

iv) If using GEC staff, WSDOT should provide additional "best for project" guidance regarding design reviews to minimize the number and improve the quality of design reviews. Comments should focus on verifying compliance with contract performance criteria, standards and quality requirements.

v) WSDOT should work with Legislature to the extent it is possible to provide greater certainty regarding the budgeting and appropriation process when longer term multi-year projects are programmed.

11. Procurement Practices

Overview

11.1 In addition to those factors discussed in Section 10, other considerations that may deter contractors from bidding on WSDOT projects relate to specific aspects of the procurement process itself.

11.2 According to the industry stakeholders interviewed as part of this study, WSDOT procurement practices that can affect competition and pricing include:

a) restrictive qualifications criteria,

b) proposal evaluation criteria that are weighted heavily towards price,

c) perception of WSDOT bias towards certain contractors,

d) inconsistent administration of the ATC process across project offices, and

e) unreasonable procurement timelines.

11.3 Such perceived issues are discussed in greater detail below, along with recommendations as to how WSDOT can ease such concerns in the interest of attracting more competition.

Observations

Procurement Process

Design-Build (Conventional)

11.4 WSDOT procures DB services generally following the award process prescribed by statute (RCW 39.10.330). WSDOT uses a two-step "best value" process entailing:

a) A Request for Qualifications (RFQ) step through which WSDOT establishes a shortlist of 3 to 5 qualified design-builders, followed by

b) A Request for Proposals (RFP) step, during which the shortlisted teams are invited to submit technical and lump price proposals for the work, which WSDOT then evaluates based on price and non-price factors set forth in the RFP to select the team that offers the best value.

11.5 The industry stakeholders who were interviewed expressed that they have grown accustomed to WSDOT's two-step process and do not perceive the process itself as being overly burdensome (although some raised concerns regarding the qualifications criteria and the weightings applied, as discussed further in the next subsection).

11.6 This contrasts with the experience of other DOTs (e.g., Florida, Utah, Minnesota, Colorado, Virginia, Ohio, Maryland, Georgia, and others) that have the flexibility to use more streamlined procurement options (e.g., one-step best value, or one or two-step low bid) to meet the unique needs of a given project.

a) Having flexibility regarding procurement options allows owners to scale the procurement effort to project-specific needs and goals. For small or less complex projects, this can conserve

time and resources not only for WSDOT personnel but also for potential bidders who may find participating in a streamlined procurement process more appealing.

i) When deciding upon the optimal procurement approach, most owners consider project size and complexity. For example, a low-bid procurement process for DB is most often applied to smaller projects having clearly defined scopes of work and lower risks, and where innovation is not sought. Conversely, best value is generally applied to larger, more complex projects where innovation is sought.

ii) Some agencies including WSDOT (e.g., Project No. 9242 I-405/Renton to Bellevue) also procure DB using a "fixed price, maximum scope" (or "build-to-budget") approach in which proposers compete based on how much scope they can deliver within a predefined budget. WSDOT refers to this as a "Maximum Scope Best Value procurement process." Under this approach, the procurement documents set forth a base scope of work with additional scopes of work that proposers may choose to include in their proposals.

b) Table 11.1 summarizes how agencies generally distinguish between different DB procurement options.

Table 11.1: Comparison of DB Procurement Options

	Low Bid Design-Build	Best Value Design-Build	DB (Build to Budget)
Description	Selection of design-builder based on lowest price. (This is typically implemented by requesting separate pricing and qualifications packages, followed by selection of the lowest priced offeror that meets the qualification requirements)	Selection of the design-builder based on price and other factors including qualifications, experience, and technical solutions	Selection of the design builder based on how much scope can be delivered without exceeding the stipulated budget and representing the best value to the owner
Objective	Save time and effort during the procurement phase	Encourage industry innovation	Control cost by seeking the maximum scope for a defined budget ceiling
Application	Smaller projects, with less flexibility or room for innovation	Larger, more complex projects with more flexibility or opportunity for innovation	Projects having a set budget for which scope can be considered variable

11.7 DOTs have used different approaches to procuring traditional DB services:

a) Using DB on smaller projects to allow contractors/designers with less capacity to gain experience with DB.

b) Using single phase or qualified two-step low bid DB for projects where time saving is the predominant goal and innovation is not sought.

c) Using a maximum or upset price with a fixed or base scope with variable options as recommended by CPARB "Review of WSDOT Projects Pursuant to ESHB 2134, Part 2B, Report to the Legislature", December 1, 2024.

Progressive Design-Build (PDB)

11.8 Unlike some owners, WSDOT currently does not have a specific policy that addresses PDB procurement. These projects are procured and awarded in the same general manner as described above for traditional DB projects .

a) WSDOT issues an RFQ and then shortlists proposers to move on to the RFP stage.

b) At the RFP stage, the shortlisted teams are not asked to propose design solutions or a cost or schedule for the work (unlike traditional DB). Instead, the final selection generally entails an evaluation of the proposers' management and execution strategies, along with pricing elements such as hourly rates or the level of effort required to carry out preconstruction phase services, and overhead and profit percentages.

c) Since the price elements evaluated for a PDB project represent only a minor portion of the total project cost, the price weighting is significantly lower, ranging from 10 to 20%, compared to what WSDOT typically applies for its DB projects.

11.9 This approach is generally consistent with that used by other DOTs and public owners.

GC/CM

11.10 To procure GC/CM services, RCW 39.10.360 has required WSDOT to include an estimated Maximum Allowable Construction Cost (MACC) in the solicitation documents. The GC/CM firm is then selected using a best-value procurement process that considers both qualifications criteria and price-related factors, such as a proposed percent fee on the estimated MACC. Following enactment of HB 1970 and approval by CPARB of the first three GC/CM projects, WSDOT will be developing its own project approval requirements for GC/CM procurements.

a) In Washington State, GC/CM projects can be delivered as either a traditional GC/CM, which is aligned more closely with vertical (building) construction, or "Heavy Civil" GC/CM, which is often applied to horizontal or transportation projects with significant civil scopes of work. In either instance, RCW 39.10.380 requires trade subcontract packages to be competitively bid. Alternatively, RCW 39.10.385 allows for an alternative subcontractor selection process where a GC/CM can select one or more subcontractors based on a competitive proposal process to provide pre-construction services during the design phase and subcontracting services during the construction phase if it is in the best interests of the public to do so and where the value of the subcontract exceeds $3,000,000.

b) Under traditional GC/CM, the GC/CM can bid on subcontract work not to exceed 30% of the negotiated MACC (RCW 39.19.390). For Heavy Civil GC/CM, the GC/CM can bid on up to 50% of the subcontract packages and may also openly compete for another 20% of the work. Heavy Civil GC/CM thus allows the GC/CM firm to self-perform up to 70% of the work, which in turn would allow this firm to control the schedule and phasing of the work, ideally promoting construction efficiencies and reduced durations.

Evaluation Criteria and Selection Decisions

11.11 Evaluation criteria for WSDOT DB projects have been largely prescribed by statute, pursuant to RCW 39.10.330:

a) Evaluation factors for the qualifications stage include "technical qualifications, such as specialized experience and technical competence of the firms and the key design and construction personnel; capacity to perform; the proposer's past performance in utilization of

business entities certified with the office of minority and women's business enterprises, including small businesses and business entities certified with the department of veterans affairs, to the extent permitted by law; ability to provide a performance and payment bond for the project; and other appropriate factors".

b) Evaluation factors for proposals are then to include a management plan to meet time and budget requirements, one or more price-related factors, and an "inclusion plan for business entities certified with the office of minority and women's business enterprises, including small businesses and business entities certified with the department of veterans affairs as subconsultants, subcontractors, and suppliers for the project, to the extent permitted by law."

With enactment of HB 1970, WSDOT will have the ability to refine its DB evaluation factors.

11.12 Several of the contractors who HKA interviewed suggested that WSDOT's current evaluation process appears to benefit specific firms.

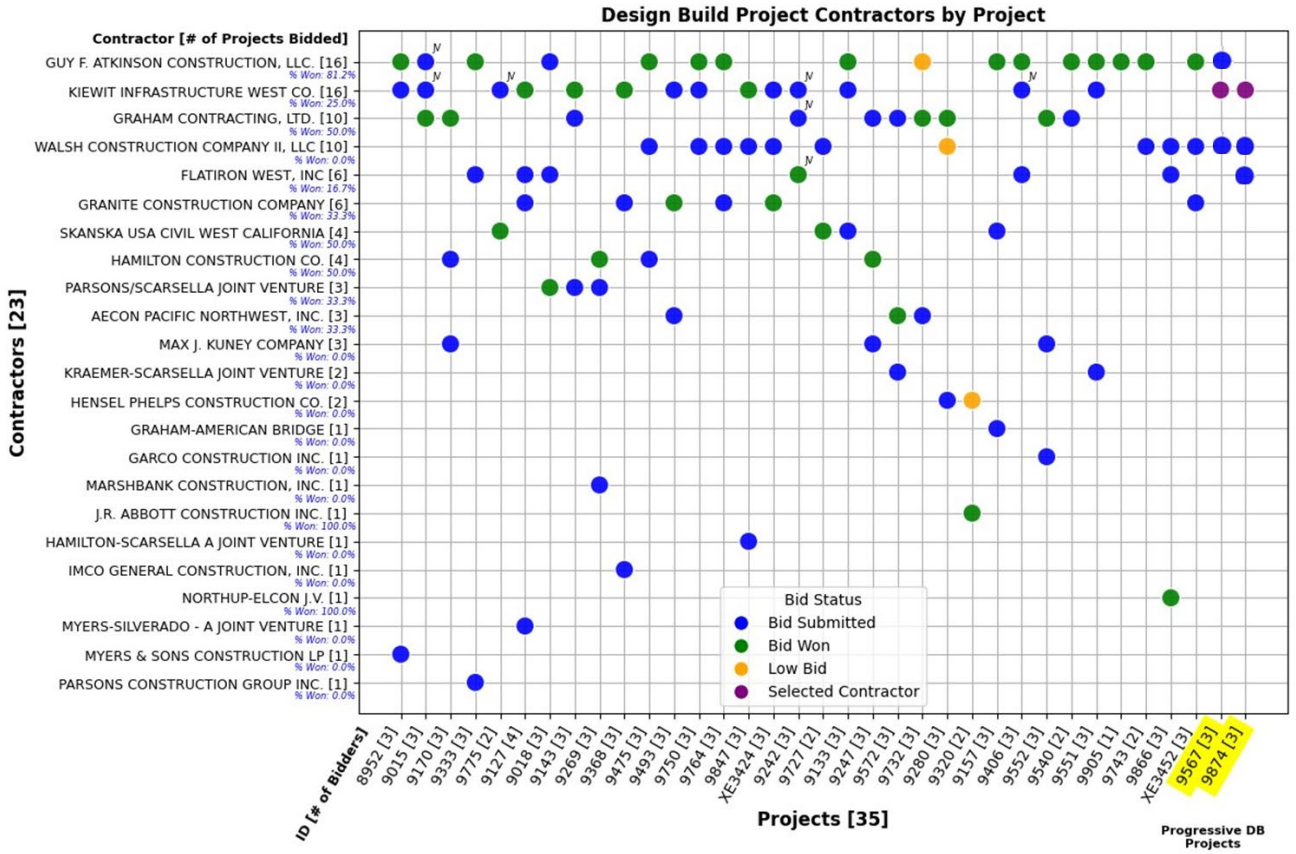
a) They suggested that WSDOT consider "refreshing" their evaluation criteria, noting that in some cases criteria seem to remain unchanged from project to project regardless of project size, scope or goals.

b) They also noted experience requirements can be overly restrictive, particularly the required years of key personnel experience in specific roles and firm experience with methods such as PDB. Several questioned why experience with GC/CM delivery for other owners could not be counted towards PDB experience.

11.13 This perception of WSDOT favoritism towards certain design-build teams is not new. As shown previously Figure 10.2, "Perceived WSDOT Bias Towards Specific Submitters" received the second highest number of votes (behind only "Project Sizes are Too Large") as a reason to pass on WSDOT DB opportunities in the 2023 survey WSDOT conducted.

11.14 To help assess the validity of this impression, Figure 11.1 takes a closer look at WSDOT's competition data, focusing on the design-build teams that have been bidding, and winning, WSDOT's DB work between 2017 and 2024. As shown, one firm has been particularly successful in responding to WSDOT DB opportunities, winning over 81% of the projects on which they propose, while another firm was selected for both of WSDOT's initial PDB projects.

Figure 11.1: Competition on WSDOT's DB Projects, by Design-Build Team



11.15 Figure 11.1 also identifies projects where the winning proposer did not offer the lowest price but was selected based on providing the best value to WSDOT. This happened on three occasions out of 35, consistent with the industry feedback that suggested WSDOT's evaluation criteria are weighted more heavily towards price, favoring the low bidder. A contractor's "win" rate for WSDOT DB projects can thus be significantly influenced by its willingness to assume risk (i.e., without incorporating a high-risk premium into its bids to cover uncertainties).

GC/CM

11.16 For GC/CM, current evaluation factors (pursuant to RCW 39.10.360) include experience and technical competence of key personnel, the proposer's past performance on similar projects, capacity to perform the work, proposed project execution approach, and past performance using MWBEs, including small and veteran-owned businesses. After the public agency selects the most qualified finalists, these finalists submit final proposals including sealed bids for the percent fee on the Maximum Allowable Construction Cost (MACC) and other price-related factors. The public agency then selects the firm with the highest scored proposal based on the weighted scores of all the non-price and price evaluation factors. The selected GC/CM may provide services during the design phase that may include value engineering, scheduling and estimating, constructability, and alternative cost-saving construction options, and act as the GC/CM during the construction phase

Alternative Technical Concepts (ATC)

11.17 Consistent with leading practice, WSDOT routinely incorporates an ATC process into its procurement documents.

a) An ATC is a request by a proposer to modify a contract requirement, specifically for that proposer's use in gaining a competitive benefit during the proposal process. To be approved, the ATC must provide a solution that is determined to be "equal to or better" than the contract requirement it is modifying.

b) Many DOTs report that the use of ATCs during the procurement process can be a powerful and key source of innovation or cost savings, particularly for more complex projects.

11.18 The industry representatives who were interviewed as part of this study generally hold a positive view of ATCs and feel that WSDOT's process, at least on paper, is thoughtful and well-designed. However, the consensus is that:

a) WSDOT's implementation of the ATC process may hinder innovation. Some industry interviewees speculated that the region and project offices likely lack sufficient authority to drive decision-making on ATCs and instead defer to discipline leads at WSDOT headquarters who appear to assert their own preferences instead of adopting a more holistic "best for project" approach to reviewing alternative solutions.

b) Similarly, another interviewee expressed frustration that WSDOT project teams will often reject ATCs without offering any explanation, noting that it can be a very helpful learning experience when WSDOT staff are more forthcoming with their ATC feedback.

Stipends

11.19 To encourage competition and motivate the industry to innovate, WSDOT routinely offers stipends to shortlisted proposers that have submitted responsive technical proposals.

11.20 None of the industry stakeholders HKA interviewed for this study brought up the topic of stipends, indicating that WSDOT has made considerable progress in aligning stipend amounts to industry expectations.

a) In the survey results (from September 2023) shown in Figure 10.2, "Stipends are too Low" was the third most cited reason for not proposing on WSDOT DB projects.

b) The fact that this topic was not raised during any of the interviews suggests that WSDOT's Construction Bulletin #2024-04, Minimum Stipend Amounts for Design-Build Projects, issued in March 2024, has largely addressed industry concerns related to stipends.

Recommendations

11.21 To address some of the issues identified above, HKA offers the following recommendations:

a) **Continue to refine RFQ qualifications criteria.** WSDOT has recently been updating qualifications requirements related to key personnel experience and past performance to require more generic experience with transportation projects of similar scope and complexity. However, WSDOT should continue to review criteria to avoid unintentionally restricting or reducing the number of bidders (e.g., experience with PDB or specialty fish passage projects).

b) **Scale proposal requirements to project needs.** WSDOT should align proposal requirements (i.e., the amount of effort and information requested) based on project size and complexity as recommended by DBIA so that the RFP responses are focused and commensurate with project goals and risks. To implement a streamlined process, WSDOT should develop associated RFP templates that could be used to support a one-step Best-Value or a DB low bid process.

c) **Reevaluate weightings and selection algorithm.** WSDOT's best value proposal evaluation criteria for "traditional" DB projects are typically weighted much more heavily towards price than technical criteria. This has created a perception within the industry that WSDOT is biased towards certain firms who happen to often submit the lowest bids.

   For traditional Best-Value DB projects where technical factors (design solutions, innovation, or constructability) are critical to success, WSDOT should revise evaluation criteria to either significantly increase technical credits or use a weighted criteria formula (similar to the current PDB solicitations) where greater weighting is assigned to non-cost criteria.

d) **ATC Evaluation.** WSDOT should provide periodic training and mentoring to DB project teams to promote a consistent approach towards the review and evaluation of ATCs. To provide transparency, RFPs should identify the performance-based requirements eligible for ATC proposals, and clearly state any elements for which WSDOT would not consider ATCs.

e) **Develop PDB and GC/CM procurement guidance and templates.** WSDOT should develop RFP templates based on industry best practices and lessons learned on the WSDOT PDB projects and Colman Dock GC/CM project.

Note: HB 1970 concerning state highway construction project alternative contracting procedures enacted in the 2025 Legislative Session amends certain statutory requirements under chapters 39.10 and 47.20 RCW regarding WSDOT's procedures for administering DB, GC/CM and PDB projects.

12. Project Delivery Method Selection

Overview

12.1 Forward thinking state and local agencies throughout the U.S. have worked with state legislators to support and pass enabling legislation to authorize alternatives to traditional DBB delivery.

12.2 Alternative methods such as traditional Design-Build (DB), Progressive Design-Build (PDB), GC/CM, and P3 are all seen as viable delivery methods that can enhance project outcomes if used under the right circumstances.

12.3 For any given project, a key early decision in the project development process therefore entails selecting the *optimal* delivery approach based on project characteristics, goals, risks, and constraints. To this end, owners with mature alternative delivery programs generally have:

a) Developed project delivery selection processes and criteria to help determine the best delivery approach for a given project.

b) Delivered training/outreach to foster a common understanding of the potential benefits, limitations, and attributes of various delivery methods to both internal and external stakeholders.

Observations

WSDOT's Delivery Method Selection Process

12.4 WSDOT has developed a formal and systematic PDM decision process (referred to as the Project Delivery Method Selection Guidance (PDMSG)) to assist WSDOT staff in evaluating the most appropriate PDM for a given project.

12.5 The process, which is fully integrated into WSDOT's overall project development phase, evaluates projects in two steps:

a) The "Probable Project Delivery Method" is determined during the Project Definition Phase and is used for project planning purposes.

b) The "Final PDM" is determined early in the Preliminary Engineering (PE) phase after validating (and updating or revising as necessary) the Probable PDM early in the Preliminary Engineering stage (i.e., 10 to 30% design).

12.6 As summarized in the table below, the PDMSG provides built-in scalability to streamline the selection process for simple projects that do not require significant deliberation to identify the optimal delivery method.

a) For smaller projects, WSDOT's Selection Checklist is usually sufficient to arrive at a PDM decision.

b) If the Selection Checklist does not determine a Probable PDM or if the project is $100 million or more, a more robust decision matrix (i.e., the "Selection Matrix") is to be used. The Selection Matrix is to be prepared in a workshop setting.

Project Cost	Selection Document/Tools
Less than $25 Million	Selection Checklist
$25 Million or Greater but Less than $100 Million	Selection Checklist and Consider Selection Matrix
$100 Million or Greater – Design Build Recommended	Selection Matrix

12.7 It is important to note that the Selection Checklist and Selection Matrix currently only support a comparison of DBB to traditional DB delivery. GC/CM and PDG are not included in the analysis.

a) WSDOT has developed a "PDM Attribute Comparison Spreadsheet" that includes GC/CM in the comparison of PDM pros and cons and is in the process of a complete overhaul of the PDMSG to include GC/CM and PDB.

b) WSDOT is evaluating the recently implemented FHWA Alternative Contracting Methods (ACM) evaluation toolset, also known as the Contracting Alternatives Suitability Evaluator (CASE), as an empirical model for updating the PDMSG.

12.8 Regarding WSDOT's PDM selection process, the industry stakeholders who HKA interviewed as part of this study generally felt that WSDOT did a good job selecting the optimal delivery strategy for a given project; however, several also noted that:

a) The size ($ value) of projects is growing too large.

b) On DB projects, WSDOT has recently been attempting to shift too much risk to industry for items or events over which contractors have limited to no control.

c) The legislative process for using GC/CM and PDB is too onerous and acts to limit more widespread use of these methods. The industry interviewees felt that WSDOT should have the ability to use these methods without going through the CPARB process. *(Note: This observation suggests industry would be in favor of the recently enacted HB 1970 that waives WSDOT from certification requirements and approvals under RCW 39.10.270, which currently requires individual project approvals from CPARB for the use of DB, PDB, and GC/CM.)*

Stakeholder Perceptions of Different PDMs

12.9 Regarding different project delivery methods (PDMs), all stakeholders interviewed as part of this study agreed that no single PDM is appropriate for *all* projects and situations. The PDM that will best suit a particular project will depend upon a range of factors including the owner's project goals, project characteristics and constraints, financial considerations, and the state of the construction market.

12.10 Both owners and industry stakeholders also shared similar perceptions of the pros/cons of the different PDMs available and the project circumstances under which they could be most beneficial. For example,

a) **Traditional DB** was viewed as being most beneficial on time-driven projects that present minimal third-party risks.

i) Under such project circumstances, most interviewees felt traditional DB provided the owner with the highest likelihood of cost and schedule control.

ii) However, several interviewees also indicated that attracting and retaining staff to work on such projects is becoming more difficult, as the current workforce tends to dislike the fast-paced and often more stressful and adversarial nature of traditional DB.

b) **Progressive** delivery methods, including PDB and GC/CM, were seen as better alternatives for projects with high-risk profiles (e.g., due to utilities, geotechnical risks, significant third-party coordination issues, volatile market conditions, etc.) and/or design uncertainty (e.g., fish passage work).

i) The ability of these methods to help "de-risk" complex projects was identified by several stakeholders as a key benefit.

ii) Multiple owners also noted that the delayed establishment of the construction price (in contrast to traditional DB in which a firm fixed price is established at contract award) allowed them to collaborate with their selected industry partners to adjust a project's final scope to suit the owner's budget. Such scope flexibility allowed them to nimbly respond to late stakeholder requests, changing market conditions, and/or the availability of new information regarding existing conditions.

iii) While experienced practitioners were highly supportive of progressive methods, they still identified several concerns including:

- Reduced competitive tension on pricing;
- The consensus-driven design process, which may lead to scope creep and cost and schedule growth (i.e., design churn) unless strong owner oversight and cost controls are in place; and
- Difficulties in obtaining a highly qualified and experienced independent cost estimator.

Recommendations

12.11 HKA offers the following recommendations to enhance WSDOT's PDM selection process:

a) **Incorporate GC/CM and PDB into the PDMSG.** According to WSDOT, it is currently in the process of updating its PDMSG to include GC/CM and PDB. As part of this process, WSDOT should revisit criteria, goals, questions and considerations for the current PDM selection checklist and selection matrix to determine what questions and considerations or ratings need to be updated/revised to clearly differentiate the progressive delivery methods (GC/CM and PDB) from the existing (DBB and DB) delivery methods in the PDSM.

b) **Monitor APD project performance and lessons-learned and refine the PDMSG as appropriate.**

i) WSDOT does not appear to be actively tracking the performance history of its APD projects (e.g., award to final cost growth; schedule growth, change order history, quality etc.). If such metrics were recorded and assessed, it might be possible to make more objective and informed comparisons of DBB, DB, PDB, and GC/CM projects with comparable scope and cost. As a long-term initiative, the PDMSG could then be refined

as appropriate to reflect any insights gained through actual performance of WSDOT APD projects.

ii) As a project closeout activity, WSDOT should identify lessons-learned and assess if the chosen delivery method was appropriate. One approach could be to re-score the PDMSG matrix and compare the results with the original PDMSG matrix. Feedback from such assessments can be used in the long term to identify any necessary changes or enhancements to the PDMSG

c) **Promote use of GC/CM.** Consistent with CPARB recommendations, WSDOT should explore the use of GC/CM for future projects (including Heavy Civil GC/CM). The method can provide multiple benefits including early contractor input in design, early contractor estimating and assistance in identification of budget/scope misalignments, and early risk identification and allocation.

d) **Timing of GC/CM negotiations.** Following CPARB's approval of its first three GC/CM projects, WSDOT should explore changing the requirement that construction documents be at least 90% complete before negotiating a maximum allowable construction cost (MACC). Having greater flexibility in the timing of negotiations would allow WSDOT to adapt its process to project-specific goals (e.g., buying out work packages at 60% design may help achieve time savings vs. negotiating at higher levels of design may provide for more accurate pricing.)

13. Project Administration

Overview

13.1 According to the industry stakeholders interviewed as part of this study, WSDOT implementation practices that can affect the efficient and cost-effective delivery of projects include:

a) Varying levels of WSDOT staff experience

b) Inconsistent administration practices across WSDOT offices and project teams

c) Siloed decision making

d) Inefficient and/or noncollaborative design oversight practices

13.2 These perceived issues are discussed in greater detail below, along with recommendations as to how WSDOT can ease such industry concerns. (Note for STT: More recommendations are anticipated, including those related to utilization of the advanced environmental mitigation revolving account and advance right-of-way revolving fund and other potential cost saving measures.)

Observations

Project Implementation

DB Projects

13.3 WSDOT has developed a comprehensive manual to assist staff in implementing the DB delivery method.

a) With regard to the design development process, WSDOT's DB Manual states the following:

> *WSDOT's intention is to allow the Design-Builder flexibility in design and construction by accommodating the processes, procedures, and innovative techniques that are preferred by the Design-Builder, as long as they are consistent with the Basic Configuration, site conditions, accepted engineering practices, environmental commitments, and the standards, guidelines, and procedures identified in the contract.*

b) The manual further states:

> *The intent of design submittals is to provide a formal opportunity for WSDOT, the Design-Builder, various design team disciplines, and other approved project stakeholders to review the construction documents in order to ensure that:*
>
> - *The design is progressing appropriately and proceeding in accordance with contract requirements*
> - *The plans reflect the Design-Builder's requirements for construction*
> - *The design features are coordinated*
> - *That there are no fatal flaws within a given discipline or between disciplines*

- *The necessary WSDOT Engineer approvals are received (i.e. Design Analysis, maximum extent feasible, etc.) prior to incorporation into the project*

13.4 Despite such best practice guidance, feedback from the industry suggests that WSDOT's actual design oversight often strays from simply reviewing for compliance and is instead used by subject matter experts to impose their own design preferences, which impedes innovation.

13.5 Complaints regarding redundant and/or conflicting design comments raised by WSDOT's general engineering consultants (GECs) were consistently provided by stakeholders during interviews.

PDB and CM/GC Projects

13.6 Some practitioners have expressed that progressive delivery methods (GC/CM and PDB) are not necessarily a panacea to address the risks and pricing issues with fixed price DB; however, both methods involve early industry involvement and collaboration to mitigate risk and obtain more realistic pricing. They can also be used to help incentivize and align team members to work together during pre-construction to resolve risk issues, solve problems and potentially bring in more scope for a target budget.

13.7 WSDOT currently lacks guidance on the implementation of these delivery methods. However, a review of PDB contract documents suggests that WSDOT has adopted several leading practices related to their use.

a) For PDB, the Design-Build Institute of America recommends that the preconstruction phase be separated into a Validation Period and a Design Development Period. After the Validation Period, the parties negotiate and agree to a target budget, scope, and schedule for the pre-construction phase. Progressive methods allow the parties to work through the process to evaluate and mitigate risks, confirm the scope with the contractor and designer and maximize what the owner is getting for the price.

b) Most practitioners agree that using an independent cost estimator (ICE) to negotiate pricing for Phase 2 final design and construction is generally a best practice for projects using the GC/CM or PDB delivery methods to determine the fair and reasonable cost of the work. A standardized cost model (breakdown structure/format) between the GC/CM and ICE helps obtain valid comparisons of costs, develop a realistic MACC or GMP and assures that all cost elements are identified and in the right bucket.

13.8 Other owners have implemented PDB and GC/CM in two ways.

a) One option is that project team develops the design to meet the established goals ("Design to Scope"). The cost and schedule are established based on this set scope/design (i.e., in this case the cost is a dependent variable).

b) The second option is for the budget to be fixed, and the project team strives to include as much scope as possible (i.e., "Design to Budget").

Either process can be effective. However, the Design to Budget process may not yield the scope that the budget anticipated without implementing creative cost-saving solutions to design and construction.

Performance Monitoring

13.9 Similar to the other transportation agencies, WSDOT lacks a formal system to collect and disseminate lessons-learned in a manner that could be used to inform future project development activities.

13.10 WSDOT also lacks a formal system to monitor any metrics or key performance indicators (KPIs) that could be used to assess the overall performance of WSDOT's APD program in terms cost, schedule, or quality performance, or that could be used to develop objective comparisons to DBB project performance.

13.11 To evaluate the cost performance of WSDOT's DB program, HKA attempted to compare the award price to the final cost. However, WSDOT has only completed and closed out 9 of the 33 DB projects it initiated between 2017 and May 2024. Given the limited number of completed projects, it is difficult to identify meaningful trends regarding the cost growth exhibited on these projects.

Table 13.1: Cost Growth on Completed DB Projects

Project	Engineers Estimate	Contract Amount	Final Contractor Payment	Cost Growth
Design Build I-5, Nb Mlk Jr Way To Ne Ravenna Brid	35,975,513	38,599,899	43,561,105	12.9%
Us 101 Coffee Creek - Remove Fish Barrier	17,464,822	13,889,997	14,831,560	6.8%
Us12, Wildcat Creek Bridge - Replace Bridge - Desi	5,896,872	4,799,336	4,999,355	4.2%
Sr 530, Trafton Creek & School Yard Creek Fish Pas	13,061,000	12,572,772	15,683,487	24.7%
Sr 99, Awv Demolition Decommissioning & Surface St	83,803,960	93,749,999	118,762,384	26.7%
Olympic Region Maintenance And Administration Faci	47,665,000	47,999,000	50,241,668	4.7%
I-82, South Union Gap Interchange - Construct Ramp	15,949,437	14,128,990	17,321,541	22.6%
Sr 202, Evans Creek & Patterson Creek Fish Passage	10,283,810	11,975,000	8,081,568	-32.5%
I-5 & Sr 548, Tributaries To California Fish Passa	4,201,343	8,460,000	8,590,490	1.5%

Recommendations

13.12 To address some of the issues identified above, HKA offers the following recommendations:

a) **Update the DB Manual.** The current DB manual should include additional guidance and training on the coordinated administration of design for DB projects. For example, provide additional guidance addressing a "project-first" mentality for all WSDOT personnel, from field staff to discipline leads at headquarters, regarding improved coordination of design reviews and comments. This will help ensure that innovative ideas offered by industry are viewed holistically rather than through a narrow lens of what might be considered most ideal for one specific project element.

b) **Align motivations of General Engineering Consultant (GEC) with WSDOT and Contractor Projects Teams.** WSDOT should provide additional "best for project" guidance on design reviews for WSDOT PM staff and GECs to expedite review and decision making and minimize excessive or unnecessary design comments (e.g., that express preferences or exceed reviews for compliance with Contract or performance requirements).

c) **Develop implementation guidance for PDB and GC/CM.** Additional implementation guidance is needed for the development, procurement and administration of PDB and GC/CM projects. The PDB guidance could be incorporated into the existing DB Manual or developed

as a standalone guide. Possible subjects include preconstruction services, risk assessment, and the process for using an ICE for cost estimate reconciliation and GMP (MACC) negotiation.

d) **Continue to train/mentor staff on APD methods.**

i) WSDOT is in the process of providing training to Project Managers on strategies to streamline fish passage projects using full weekend shutdowns and expanded in-water work windows.

ii) Consistent with competition recommendations, provide training and mentoring to instill a "best-for-project" mindset in WSDOT staff regarding project administration of design and construction

iii) Additional basic training is needed for PMs on design and construction administration for the newer PDB and GC/CM delivery methods. One important aspect of the training should address the process of developing a cost model and conducting open book negotiations to get to an OPCC or a MACC involving the DOT staff, Contractor staff, and the ICE.

e) **Performance Monitoring and Reporting to the Legislature.** On an annual basis, capture and present to the Legislature capital program performance data (e.g., % of projects completed on time/on budget by delivery method). The presentation should be viewed as an opportunity to tout program successes, engage in productive dialogues regarding challenges facing certain capital projects, and dispel misperceptions regarding project costs.

14. Summary of Findings and Recommendations

14.1 The study Proviso asked for recommended improvements to project delivery aimed at reducing costs, improving competition, shortening delivery schedules, or a combination of these factors.

14.2 Based on the assessment of WSDOT's project delivery practices as presented in Part 2 of this report, Tables 14.1 through 14.5 highlight WSDOT's strengths and improvement opportunities in the following areas:

- Cost Estimating
- Competition
- Procurement Practices
- Project Delivery Method Selection
- Project Administration

14.3 Additional innovative cost and time saving practices identified from the study (and the fish passage program) include the following:

a) WSDOT can utilize an Advanced Environmental Mitigation Revolving Account for a variety of expenses related to environmental mitigation including the purchase of property, water, or air rights and development of property for improved environmental management to fulfill project environmental permit requirements, in advance of funding becoming available for an individual project. WSDOT reported advanced environmental mitigation is useful as a cost containment strategy and creates time savings for future projects by streamlining the permitting process and providing efficiencies in property acquisition, construction and monitoring when establishing one larger advance mitigation site as opposed to several smaller sites. Details of the program are provided in Appendix B of this report.

b) To further improve the environmental permitting process, WSDOT is implementing a "Multi-agency permit program" under RCW 47.85.020 to coordinate permitting among multiple regulatory agencies and expedite the environmental decision-making and the permit application process.

c) "Bundling," or combining multiple small projects into one based on proximity and/or similar or complementary scopes of work, has been used by several owners to achieve cost and/or time savings attributable to economies of scale, design efficiencies, quality management savings, and/or the ability of a design-builder or GCCM to determine the optimal schedule and phasing for all project components. Bundling is currently being implemented on WSDOT's fish passage program by grouping the fish passage sites along the same roadway to streamline traffic management and combine sites with similar scopes of work with the objective of saving design and construction costs and to accelerate the delivery schedules.

d) Many highway agencies use Indefinite Delivery Indefinite Quantity (IDIQ) or Job Order Contracting (JOC) for maintenance or construction projects to streamline project delivery, save money, and/or increase the rate at which needed improvements are installed. In the case of IDIQ contracting, agencies often "bundle" relatively small projects with repetitive or standardized designs under a single contract. As noted by the Federal Highway Administration (FHWA https://highways.dot.gov/safety, April 2023 FHWA-SA-23-01),

> *The amount of time it takes to put together a project and plan package for a JOC is reduced from an average of 1-2 years using traditional contracting methods for similar projects, down to an average of 5 months. In addition, the average cost reduction has been 26 percent below the engineer's estimate.*

e) Standardization of prefabricated structures can reduce design cost and time, fabrication cost, and construction. For example, WSDOT's use of Buried Structure standard plans streamlines the design process for "box culvert" structures, reducing design time, cost, and procurement time.

f) Periodic peer-to-peer exchanges among WSDOT and local agencies in Washington State (i.e., Sound Transit, Port of Seattle, King County, City of Seattle) regarding best practices, local construction market conditions, and timing of major projects could be used to help to enhance competition and get better bids for major projects

g) As noted in the WSDOT's Fish Passage Program Cost Management Recommendations, innovative traffic management strategies including reducing travel lanes during construction, use of single lane reversible traffic and implementing full traffic closures over shorter time periods have the potential to save costs, shorten construction schedules, and enhance safety.

h) As similarly noted in the WSDOT's Fish Passage Program Cost Management Recommendations, WSDOT is in discussions with the Washington Department of Fish and Wildlife (WDFW) to explore allowing more flexible or longer In-Water Work Windows (IWWW) and the use of temporary bypass crossings outside of fish passage IWWWs for fish passage projects to potentially lower bids, better manage traffic impacts, and shorten construction schedules.

Table 14.1: **Cost Estimating:** Findings, Recommendations, and Benefits of Implementation

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
Programmatic Considerations		
• WSDOT has developed several guidance materials related to the estimating process that reflect industry best practices, including: – Cost Estimating Manual for Projects (January 2023) – Cost Risk Assessment (CRA) and Cost Estimate Validation Process (CEVP) guidance and template documents – Project Delivery Memo #25, Project Risk Management and Risk-Based Estimating (updating the Secretary's Executive Order Number: E 1053.02) • WSDOT has reported it is planning to establish a working group to refine its estimating processes.	Despite having largely implemented leading practices in cost estimating, WSDOT has been experiencing a trend of significant variances between its Engineer's Estimates and bid prices. To improve the reliability of its estimates moving forward, WSDOT should consider the following. The working group that WSDOT plans to establish should be used to: a) Develop clear guidance on the following topics areas (updating as appropriate, the Cost Estimating Manual, CRA/CEVP process, and DB Manual): – Parameters for when to engage an independent cost estimator (ICE) vs. refresh the initial CRA/CEVP analysis – Use of the CRA/CEVP results to help evaluate the cost/benefit of conducting more detailed preliminary engineering and site investigation – Incorporation of a Contractor's view of cost into the Engineer's Estimate to better capture costs related to complying with federal/state regulations and policies (e.g., diversity goals, local hires, PLAs, etc.) and bid premiums related to the risks that are being shifted to industry – Development and documentation of the published range and final Engineer's Estimate b) Develop a rollout strategy for the updated guidance, including training and mentoring c) Establish a performance monitoring function by which the working group periodically reconvenes and assesses the following to determine if further adjustments to the estimating guidance are needed: – Variance between Engineer's Estimate and contract award – Variance between contract award and final cost	• Increased consistency in how estimates and published ranges are developed • Increased consistency in how risk analysis results are applied • Improved ability to effectively review and compare the reasonableness of bids received • Increased transparency regarding the performance of WSDOT projects

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
Project-Level Considerations		
• As part of the estimating working group initiative, WSDOT will reportedly evaluate the following strategies: – Improve planning level cost estimates (less than or equal to 30% design) by conducting more detailed preliminary engineering and site-specific investigations. – Supplement current practices with Independent Cost Estimate (ICE) services for complex projects in excess of $25M.	**II. Project-Level Recommendations** To implement the updated estimating guidance on a specific project may entail the following: a) Engaging a risk consultant to refresh the CEVP assessment closer to the advertisement date b) Engaging an Independent Cost Estimator to prepare a contractor-style estimate c) Pre-procurement outreach to obtain industry feedback on risks and the impact of the intended risk allocation strategy on potential project cost d) Additional site investigations and preliminary engineering to reduce estimating uncertainty and associated risk premiums	• Increased alignment between how WSDOT and contractors estimate work • Improved visibility into what project risks are reflected in the published range and final Engineer's Estimate

Table 14.2: **Competition**: Findings, Recommendations, and Benefits of Implementation

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
Project-Level Considerations		

• WSDOT routinely meets with industry and shares information regarding upcoming procurement actions through several forums, including:
  − A quarterly meeting to discuss the project pipeline
  − Meetings of an AGC/ACEC group focused on DB, at which upcoming DB projects can be discussed
  − WSDOT website postings of the STIP and annual project delivery plans
• WSDOT has been receptive to industry suggestions regarding its geotechnical risk allocation practices, as developed by the AGC/ACEC/WSDOT committee.
• According to the Fish Passage Program Cost Management Recommendations (Dec. 15, 2024), WSDOT recognizes the importance of conducting market analyses of the transportation industry and workforce to align project packaging with contractor and consultant capacity.
	Competition for large WSDOT DB projects has diminished in recent years. To help reverse this trend, WSDOT should consider implementing the following:
	a) Conduct early outreach to industry, including
	  − Sharing pipeline information up to 4 to 5 years in advance to allow industry to plan staffing and resource decisions
	  − Communicating with industry to identify any delivery or packaging strategies that could limit or expand competition (e.g., dividing a mega project into smaller projects or components; bundling smaller projects into one)
	b) Communicate with other local agencies (e.g., Sound Transit, Port of Seattle) on the timing of major lettings so as not to exceed the capacity of local industry.
	c) Conduct sufficient site investigations and third-party coordination efforts to allow both WSDOT and potential bidders to adequately assess and price project risks.
	d) For traditional DB projects, consider adopting a more balanced risk allocation approach (e.g., allowance or other sharing schemes) regarding geotechnical and utility risks. Alternatively, consider using a progressive delivery approach (PDB or GC/CM).
	e) To enhance the ability of prime contractors to build competitive teams, carefully review and adjust the DBE goals based on an assessment of the available pool and capacity of subcontractors/DBE firms in the project region. On PDB or GC/CM projects, encourage the prime contractor to develop subcontractor work packages tailored to the specific DBE skills.
		• Increased competition
		• Better pricing
		• Increased reliability of WSDOT's Engineer's Estimates

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
Programmatic Considerations		
• WSDOT is generally considered a trustworthy and fair owner.	a) Embark on a concerted effort to become an "owner-of-choice. This long-term effort will likely entail: – Training and mentoring to instill a "best-for-project" mindset in WSDOT staff – Consistency in procurement and administration practices across regions / project teams – Breaking down organizational silos – Aligning GEC motivations with the rest of the project team to improve the quality of design review comments – Working with the Legislature to provide greater certainty regarding the budgeting and appropriation process for projects b) To enhance the DBE program: – Sponsor regular networking events statewide for prime contractors to meet and network with DBE firms. – Develop and provide additional guidance on how contractors should document their Good Faith Efforts (GFE) to meet DBE goals. Guidance could include checklists, templates and examples, and training materials help to ensure that the steps to document GFE are clear, and WSDOT's process for evaluating submissions is transparent. – Use quantitative performance criteria to measure the overall success of the DBE program and evaluate its cost-effectiveness in reducing the systemic barriers. This could entail implementing and tracking performance metrics related to the number of prime contract awards to certified firms; the variety in the industries in which DBE firms are awarded prime contracts and subcontracts; and the "capacity" of certified firms as measured by bonding limits, size of jobs, profitability, etc.	• Enhance WSDOT's standing as an "owner of choice"

Table 14.3: **Procurement Practices**: Findings, Recommendations, and Benefits of Implementation

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
• In response to industry concerns regarding key experience requirements being too restrictive, (especially the PDB fish passage projects that initially required 10 years' experience with PDB and fish passage projects) WSDOT has updated its staffing PM experience and past performance requirements to require more generic experience with transportation projects of similar scope and complexity. • In response to industry concerns that stipends are too low for the level of effort needed to prepare technical and cost proposals under a DB two-step Best Value process, WSDOT updated its policy on Stipends to increase minimum stipend amounts for Fish Passage and Other DB projects per Construction Bulletin #2024-04	a) Continue to review RFQ qualifications criteria to avoid unintentionally restricting or reducing the number of bidders. b) Scale proposal requirements (i.e., time and amount of effort to provide a response proposal) based on project size and complexity. To implement a streamlined process, WSDOT should develop associated RFP templates that could be used to support a one-step Best-Value or a DB low bid process. c) For traditional Best-Value DB projects where technical factors (design solutions, innovation, or constructability) are critical to success, revise evaluation criteria to either significantly increase technical credits or use a weighted criteria formula (similar to the current PDB solicitations) where greater weighting is assigned to non-cost criteria. d) Provide periodic training and mentoring to DB project teams to promote a consistent approach towards the review and evaluation of ATCs. To provide transparency, RFPs should identify the performance-based requirements eligible for ATC proposals, and clearly state any elements for which WSDOT would not consider ATCs. e) Develop PDB and GC/CM procurement guidance and templates.	• Increased competition • Industry innovation • Reduced perceptions of favoritism in award selections

Table 14.5: **Project Delivery Method Selection**: Findings, Recommendations, and Benefits of Implementation

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
• WSDOT has developed a formal and systematic PDM decision process (referred to as the Project Delivery Method Selection Guidance (PDMSG)) to assist WSDOT staff in evaluating the DBB and DB delivery options. • Also of note is the passage of HB 1970 in the 2025 Legislative session which eliminates CPARB approval, and associated delays	a) Incorporate GC/CM and PDB into the PDMSG. b) Monitor APD project performance (e.g., award to final cost growth; schedule growth, change order history, quality etc.) and lessons-learned, and refine the PDMSG as appropriate. c) Promote use of GC/CM for projects with high-risk profiles or that would otherwise benefit from early contractor input.	• More objective and informed comparisons of DBB, DB, PDB, and GC/CM projects • Improved capture and transfer of institutional knowledge regarding what works well/not so well on APD projects

Table 14.5: **Project Administration**: Findings, Recommendations, and Benefits of Implementation

What is WSDOT doing well?	What improvement(s) could WSDOT make?	Potential Benefits of Implementing Recommendations
• WSDOT has developed a standalone manual related to DB project delivery. • Industry generally perceives WSDOT as a trustworthy and fair owner, particularly for construction phase management. • In response to industry feedback and in the interest of enhancing project efficiency, WSDOT is considering relaxing traffic management requirements to allow for complete road closures and extending in-water working windows in streams beds.	a) Update the DB Manual to include additional guidance on the design oversight process. b) Consistent with competition recommendations, provide training and mentoring to instill a "best-for-project" mindset in WSDOT staff and GEC consultants regarding the administration of design and construction. c) Develop implementation guidance for PDB and GC/CM to support the development, procurement and administration of PDB and GC/CM projects. Possible subjects include preconstruction services, risk assessment, and the process using ICE for negotiation of a Guaranteed Maximum Price (or Maximum Allowable Construction Cost) d) On an annual basis, capture and present to the Legislature capital program performance data (e.g., % of projects completed on time/on budget by delivery method). The presentation should be viewed as an opportunity to: – tout program successes – engage in productive dialogues regarding challenges facing certain capital projects – dispel misperceptions regarding project costs	• Increased consistency in the management and administration of APD projects • Increased transparency of actual project performance (i.e., that taxpayer dollars are being spent efficiently and wisely) • Enhanced monitoring and control of project performance

Appendix A

Study Proviso

ESHB 2134, Section 204 (9)

(a) $450,000 of the motor vehicle account—state appropriation is for the joint transportation committee to conduct a study and make recommendations on alternative project delivery methods that may be used by the Washington state department of transportation in public works contracting. The study must review use of design-build, design-bid-build, progressive design build, general contractor/construction manager, public-private partnerships, and other contracting methods, and how choice of project delivery method impacts cost, contract competition, and project delivery schedule.

(b) The study must also evaluate other innovative project delivery practices utilized around the country and Washington state-specific possibilities such as: (i) Increased use of the advanced environmental mitigation revolving account and advance right-of-way revolving fund as cost containment strategies; and (ii) benefits and costs associated with the bundling of bridge, culvert, or other groups of projects into single procurement packages.

(c) The study must specifically examine contracting methods, alternative bundling concepts, and other options to manage costs as the Washington state department of transportation continues to make progress on meeting the requirements of the federal U.S. v. Washington court injunction.

(d) The study must include recommendations on any changes to current practices and statutory requirements.

(e) In developing project delivery method recommendations, the joint transportation committee must engage with industry stakeholders including, but not limited to, engineering, contracting, environmental, and women and minority-owned business communities.

(f) A preliminary report is due to the office of the governor and the transportation committees of the legislature by December 15, 2024. The final report is due to the office of the governor and the transportation committees of the legislature by June 30, 2025.

Appendix B

Case Studies

In response to the highlighted provision of the study proviso in ESHB 2134, Section 204 (9) (below), the following case studies have been developed.

> *(b) The study must also evaluate other innovative project delivery practices utilized around the country and Washington state-specific possibilities such as: (i) Increased use of the advanced environmental mitigation revolving account and advance right-of-way revolving fund as cost containment strategies;*

Appendix B.1: Environmental Mitigation Bank

Background

- The US Clean Water Act, Section 404, requires environmental mitigation to offset unavoidable adverse impacts to aquatic resources, such as wetlands and streams, that result from development activities including filling that occurs due to transportation infrastructure projects.

- Washington State has an Advanced Environmental Mitigation Revolving Account (AEMRA), that was established in 1997 with initial funding of $10 million[13] to "help the state to improve permit processes and environmental protection when providing transportation services". Below is an overview of projects funded from the account.

Advance Environmental Mitigation Revolving Account: No activity planned at this time.

Project Funding History

Ref. #	Project	Approved Funding	Funding Approved	Expected Payback	Payment Received
1	N. Fork Newaukum River Mitigation Bank	1,621,000	12/24/1998	6/30/2018	partial
2	Dillenbaugh Creek Mitigation Bank	167,000	1/29/2004	6/30/2018	
3	Moses Lake Wetland Bank	253,000	12/24/1998	6/30/2018	partial
4	South Sequim Bay Vicinity Projects	546,000	6/20/2002	6/30/2018	partial
5	Bogachiel River (SR101/SR110)	110,000	11/19/2002	6/30/2018	
6	Tarlett Slough Phase I (Acquisition)	293,000	6/24/2003	9/30/2015	2015
7	Tarlett Slough Phase II (Development)	460,000	4/28/2009	6/30/2013	2013
8	SR3 Belfair Area Widening and Safety	805,000	4/10/2009	9/30/2012	2012
9	Bainbridge Island Ferry Terminal Project	250,000	12/24/1998	6/30/2007	2006
10	I-405 Corridor Program	250,000	8/19/2002	6/30/2007	2006
11	I-405 Congestion Relief /Bus Rapid Transit	800,000	4/21/2003	6/30/2007	2006
12	SR14 Land Purchase Mitigation Site	280,000	10/20/1999	6/30/2007	2000
13	Mt. Baker SR5/542 Safety Improvement Projects	375,000	11/30/2007	Cancelled	
14	Deer Creek Loop Road to Agate Road	73,000	5/24/2002	6/30/2009	2009
	Total	**6,283,000**			

Note: The shaded area indicates closed loans.

Washington State Department of Transportation (WSDOT) Utilization

- WSDOT has the ability to utilize the Advanced Environmental Mitigation Revolving Account, for a variety of expenses related to environmental mitigation including the purchase of property, water, or air rights and development of property for improved environmental management to fulfill project environmental permit requirements, in advance of funding becoming available for an individual project.

- WSDOT utilized the account regularly from the time it was established in the late 1990s until the late 2000s. In 2011-2013, 2013-2015, 2019-2021 biennial transportation budgets, the legislature transferred funds from the AEMRA to the motor vehicle account. Approximately

[13] *$2 million included in the 1998 Supplemental and $8 million in the 1999-2001 Biennial budget

$1.5 million remains in the AEMRA. This left the account without sufficient funding to purchase new properties for significant environmental mitigation.

- The past process to utilize funds was for the project team within WSDOT that foresees future mitigation needs in a particular area (where existing mitigation options either do not exist or are expected to be insufficient for the project's compensatory mitigation need) to request advanced environmental mitigation. This request is then reviewed by both WSDOT Environmental Services and CPDM before approval.

- WSDOT reports advanced environmental mitigation is useful as a cost containment strategy and creates times savings for future projects, including:

  – 15-50% decrease in required mitigation area depending on the timing of mitigation need

  – Streamlined permitting process, providing reduced costs from shorter design and permit review timelines

  – Efficiencies in property acquisition, construction, and monitoring when establishing one larger advance mitigation site as opposed to multiple smaller sites

Conclusion

The Advanced Environmental Mitigation Revolving Account provides a good return on investment, saving time and money for transportation infrastructure projects.

Recommendation

As feasible, add funding to the AEMRA to restore the fund balance to $10 million, to gain the greatest return on investment. This is a one-time cost, as the account is repaid by the project that utilizes the environmental mitigation credit(s).

Appendix B.2: Advance Right of Way Purchase

Background

- USC 23 §108 allows a state, with permission of the USDOT Secretary, to utilize apportioned federal funds for the "advance acquisition of real property" or Right-of-Way (ROW) for federal transportation improvement projects. This authorization was established by Congress in Public Law 85-767, August 27, 1958.

- In 1961, the Washington State Legislature authorized advance acquisition of property "necessary for the improvement of the state highway system, in advance of actual construction, for the purposes of eliminating costly delays in construction, reducing hardship to owners of such property, and eliminating economic waste occasioned by the improvement of such property immediately prior to its acquisition for highway use". RCW 47.12.180

- In 1991, the legislature provided an initial deposit of $10 million from the motor vehicle fund to utilize for Washington State Department of Transportation (WSDOT) Advance ROW purchase. RCW 47.12.244

- Washington State had a City and County Advance Right-of-Way Revolving Account established in 2001 that was underutilized and inactivated in 2010 (SB 6572).

Washington State Department of Transportation (WSDOT) Utilization

- In Washington State, WSDOT has the ability to utilize the Advance Right of Way (ROW) Revolving Account for purchase of ROW for programmed highway construction projects in advance of funding becoming available for the project.

- To utilize the account, a WSDOT Region requests approval from HQ Real Estate Services

- In recent years, it has had low utilization, 1-2 times/year

- As a cost containment strategy, WSDOT reports Advance ROW purchase is not very useful. However, it has other benefits outlined below.

Potential Benefits and Drawbacks of Advance Right of Way Purchase:

- Early acquisition can be helpful in the following scenarios:

  – "Protective Buying" which is acquiring a parcel slated for other development, before construction on that site begins.

  – "Hardship Acquisition" initiated by the owner of the property that is unable to otherwise sell their property due to an impending project.

- Under most circumstances, advanced acquisition of ROW would be more expensive, sometimes significantly more costly. This is because the ROW needed is not determined until the project team has enough design completed to understand the requirements (and the limits) of the acquisition. For most projects, this happens around the 30% design level. At this point, project funding is available for ROW procurement and there is no need to use the Advance ROW Revolving Account.

  – Additionally, advanced acquisition creates risks because of the uncertainty of what needs to be acquired for a particular project could lead to the state acquiring more right-

of-way, at greater costs and impact to property owners, than if it had just waited for more design refinement.

Conclusion

The Advance ROW Revolving Account can be useful under certain circumstances, but low utilization is ideal, as advance ROW acquisition is not practical or necessary for the majority of WSDOT projects.

Recommendations

- Maintain a $1million balance in the Advance Right-of-Way Revolving Account
- Consider an update to the guidance in the WSDOT Right-of-Way Manual, Chapter 4, on utilization to limit early acquisition regardless of fund source to “Protective Buying” and “Hardship Acquisition”.
- Consider updating the Account statute (chapter 47.12.244, RCW) to reflect current WSDOT Administration (it is no longer under the jurisdiction of the Transportation Commission).

Appendix C

Stakeholder Interviews

Project Delivery and Innovative Practices Study of WSDOT

Stakeholder Feedback

FOR: Washington State Joint Transportation Committee

DATE: APRIL 29, 2025

HKA Global Inc.
One Commerce Square
1735 Market Street
Suite 1100
Philadelphia, PA 19103

Contents

1. Introduction

Study Overview

1.1 The Joint Transportation Committee (JTC) of the Washington State Legislature engaged a team led by HKA Global LLC to:

a) Study the Washington State Department of Transportation's (WSDOT) current project delivery practices, and

b) Recommend changes as appropriate to current policies, practices and statutory requirements that could reduce costs, improve competition, shorten the delivery schedule, or make progress in a combination of all three of these factors.

1.2 To accomplish the study objectives, the Request for Proposals for the study set forth the following integrated tasks:

- Task 1: Project Delivery Methods – Background, Overview & Examples
- Task 2: Engagement with WSDOT & Industry Stakeholders
- Task 3: Document Issues, Opportunities & Suggested Improvements
- Task 4: Recommendations: Improvements to Existing Project Delivery Practices, Other Innovative Approaches, and Washington-Specific Opportunities
- Task 5: Coordinate with the Staff Technical Team
- Task 6: Presentations
- Task 7: Preliminary and Final Reports

Oversight and Direction

1.3 The study is being guided by JTC staff and a Staff Technical Committee (STT) consisting of the individuals identified in Table 1.1.

Table 1.1: STT Roster

Organization	Representatives
Washington State Department of Transportation	• Art McCluskey, Design-Build Program Manager, Construction Division • Joanna Lowery, Assistant State Design Engineer, Development Division • Nina Jones, ECMCA, Assistant Director of Business Diversity and Inclusion, Office of Equity & Civil Rights • Travis Snell, Legislative Relations

Organization	Representatives
Office of Financial Management	• Maria Thomas, Budget Advisor to the Governor
House & Senate Transportation Committees	• Chris Thomas, HTC Senior Fiscal Analyst • Danny Masterson, STC Senior Fiscal Analyst,
Senate and House Democratic and Republican Caucuses	• Hannah McCarty, Senior Staff Counsel • Martin Presley, Senior Staff Counsel • Loren Othón, Senior Policy Analyst • Dana Quam, Senior Counsel
Joint Transportation Committee	• Alyson Cummings, Senior Policy Analyst, Project Manager • Rachel Dean, Policy Analyst

Approach

1.4 In conducting the study, HKA applied an iterative process of document reviews, project data analyses, and stakeholder interviews to identify:

a) Factors contributing to the cost and schedule performance of WSDOT projects,

b) Any practices applied by other public owners that could be adapted by WSDOT to optimize project delivery in terms of cost, schedule, competition, and/or other performance parameters important to stakeholder satisfaction

c) Other issues of concern to the different stakeholder groups and potential improvement opportunities.

1.5 HKA worked with the STT, as well as representatives from the local chapters of the Associated General Contractors of America (AGC) and the American Council of Engineering Companies (ACEC), to identify people to interview from the following stakeholder groups:

a) Industry (contractors, design firms, subcontractors/minority firms)

b) WSDOT (staff from the project development, alternative project delivery, estimating, risk management, project controls, and the Office of Equity)

c) Other public owners in Washington State (Sound Transit, Port of Seattle, City of Wenatchee, City of Seattle, Spokane County, University of Washington, Washington State University)

Scope of this Report

1.6 This report, prepared as the deliverable for Task 2, documents the feedback received through stakeholder interviews.

1.7 Findings have been organized into the following general topic areas:

a) Project Development and Pre-Procurement Practices (see Section 2)

b) Risk Management (see Section 3)

c) Procurement Practices (see Section 4)

d) Project Administration (see Section 5)

Key Findings from Industry Stakeholder Interviews

1.8 Contractors and designers cited several factors that can drive their decision-making regarding whether to pursue WSDOT project opportunities, particularly for traditional, fixed-price DB projects. Such considerations included the following:

a) Project size and complexity

b) Reputation and experience of the WSDOT project team (internal staff as well as general engineering consultants)

c) Reasonableness of the intended risk allocation strategy (including the extent to which WSDOT has performed a sufficiently robust field exploration program to reduce uncertainty)

d) Availability of suitable teaming partners, including DBE firms

e) Reasonableness of the procurement schedule

f) Restrictive qualifications criteria

1.9 Recommendations offered by stakeholders on strategies WSDOT could adopt to improve competition and obtain better value for money on large DB projects include the following:

a) Conduct early industry outreach to obtain feedback on project packaging strategies that would maximize competition (e.g., subdividing mega-projects; bundling small projects).

b) Conduct more thorough site investigations to develop a more realistic and reliable baseline of project conditions that would support more accurate pricing of project risk.

c) Promote more consistency across project teams in their review of alternative technical concepts and oversight of design and construction.

d) Conduct more effective oversight of GECs and help ensure that any review comments forwarded to the design-builder are substantive and non-duplicative.

e) Foster a “project-first” mentality in all WSDOT personnel, from field staff to discipline leads at headquarters, to ensure innovative ideas offered by industry are viewed holistically for the project, rather than through a narrow lens of what might be considered most ideal for one specific project element (e.g., relax traffic management requirements to allow for complete road closures; work with the permitting agencies to modify or extend the IWWWs or use temporary bypass fish crossings.)

f) Consider eliminating warranties on fish passage projects.

2. Preliminary Engineering and Pre-Procurement Practices

Overview

2.1 The stakeholders interviewed shared several insights and ideas from their different perspectives regarding the pre-procurement practices owners apply during a project's planning and development stage to:

a) Identify and refine project needs, risks and constraints

b) Package/size projects to align with market capacity and appetite for risk

c) Select a project delivery method

d) Estimate project costs

Design Studies, Investigations and Preliminary Engineering

2.2 WSDOT and the other public owners interviewed as part of this study largely agreed that the more preliminary work that they can perform to define project requirements and identify and equitably allocate risks will help ensure that DB projects are constructable and biddable with manageable risks.

a) This means that the typical studies and investigations that an owner will perform for its traditional DBB projects – including design surveys, geotechnical field investigations, utilities investigations, environmental investigations, hydrologic and hydraulic studies, and third-party outreach and coordination activities – will generally still be necessary for a DB project.

b) The challenge, however, is to find the right balance in conducting the necessary front-end due diligence to adequately define project risks while not advancing the design so far that it acts to limit or constrain design-builder innovation.

2.3 Regarding WSDOT's DB practices, the industry stakeholders largely felt that WSDOT, particularly in recent years, has been erring on the side of not advancing its data collection, concept designs, and third-party coordination efforts far enough to:

a) Support an adequate assessment and pricing of project risks; and

b) Ensure projects are constructable as presented in the procurement documents (e.g., without requiring waivers from WSDOT's own standard requirements).

2.4 The resulting uncertainty regarding project conditions was cited by several industry interviewees as being:

a) A key factor driving their decisions to not compete for certain projects (particularly if site access or other procurement constraints prevented proposers from doing their own exploratory investigations), as well as a

b) A suspected cause for the wide variances often seen between WSDOT's Engineer's Estimates and the bids received.

2.5 As a cost control strategy on DB projects, the industry stakeholders therefore recommend that WSDOT increase the time and resources it expends during a project's pre-procurement stage to

develop a more realistic and reliable baseline of project conditions. For example, on a project with particularly complex geotechnical issues, this would entail conducting more borings and laboratory and field testing. A more robust field exploration program by public owners (in this instance WSDOT) could lead to increased competition, better bids, and reduced change orders and disputes.

Project Size / Packaging

2.6 Several owners noted that as their projects increase in size and complexity, it can be difficult to attract sufficient competition.

2.7 This observation is consistent with the concerns voiced by several industry representatives, who cited project size as being a key factor that can influence their decision to not pursue WSDOT work.

a) Multiple contractors indicated that if a project were to exceed $200M, they would be required to form a joint venture with another entity to perform the work.

b) Moreover, they noted that large projects that extend multiple years can be extremely difficult to price given volatile material and labor costs and therefore do not align with their firm's risk appetite.

c) Conversely, larger contractors expressed hesitation to pursue smaller DB projects (e.g., less than $20M), explaining that it can be difficult to develop competitive price proposals that still cover their overhead costs. (In such cases, they suggested that WSDOT consider exploring whether such work can be "bundled" to create a larger project or program of projects.)

2.8 Questions regarding the size of WSDOT DB projects are not new. In 2023, WSDOT surveyed designers and contractors to identify factors that can influence their decisions to pursue WSDOT DB projects. Out of 97 responses received, 49% identified "Project sizes are too large" as being a key reason for not competing on WSDOT DB projects.

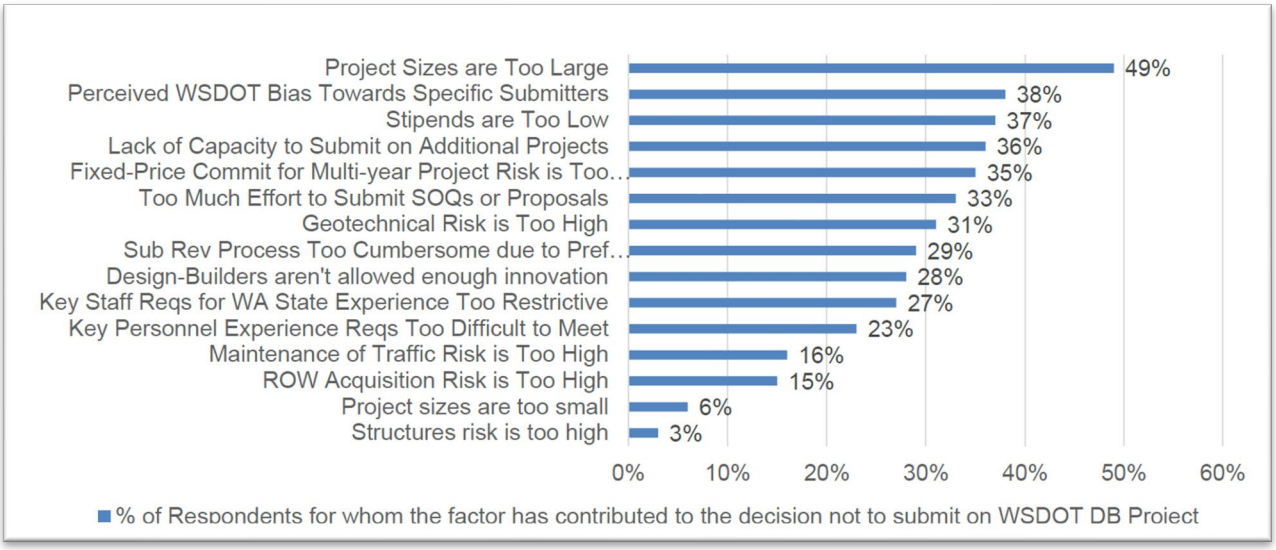


Figure 2.1: Factors contributing to a decision to not submit on WSDOT DB projects
Source: WSDOT/AGC/ACEC Design-Build Committee. Survey Results: Industry Interest in WSDOT Projects. September 7, 2023

2.9 To the extent that a large project could feasibly be phased or subdivided, industry stakeholders suggest that WSDOT start its industry outreach activities early in the project planning and development process to gauge market interest and identify any packaging strategies that could limit or expand competition. If such outreach is performed in a timely manner, it may still be possible for WSDOT to repackage or refine the project scope (e.g., dividing a mega project into smaller projects or components) to better align with current market capacity and appetite for risk assumption.

Delivery Method Selection

2.10 Regarding different project delivery methods (PDMs), all interviewees agreed that no single PDM is appropriate for *all* projects and situations. The PDM that will best suit a particular project will depend upon a range of factors including the owner's project goals, project characteristics and constraints, financial considerations, and the state of the construction market.

2.11 Both owner and industry stakeholders also shared similar perceptions of the pros/cons of the different PDMs available and the project circumstances under which they could be most beneficial. For example,

a) **Traditional DB** was viewed as being most beneficial on time-driven projects that present minimal third-party risks.

i) Under such project circumstances, most interviewees felt traditional DB provided the owner with the highest likelihood of cost and schedule control.

ii) However, several interviewees also indicated that attracting and retaining staff to work on such projects is becoming more difficult, as the current workforce tends to dislike the fast-paced and often more stressful and adversarial nature of traditional DB.

b) **Progressive** delivery methods, including PDB and GC/CM, were seen as better alternatives for projects with high-risk profiles (e.g., due to utilities, geotechnical risks, significant third-party

coordination issues, volatile market conditions, etc.) and/or design uncertainty (e.g., fish passage work).

i) The ability of these methods to help "de-risk" complex projects was identified by several stakeholders as a key benefit.

ii) Multiple owners also noted that the delayed establishment of the construction price (in contrast to traditional DB in which a firm fixed price is established at contract award) allowed them to collaborate with their selected industry partners to adjust a project's final scope to suit the owner's budget. Such scope flexibility allowed them to nimbly respond to late third-party requests, changing market conditions, and/or the availability of new information regarding existing conditions.

iii) While experienced practitioners were highly supportive of progressive methods, they still identified several concerns including:

- The lack of competitive tension,
- The consensus-driven design process, which may lead to scope creep and cost and schedule growth (i.e., design churn) unless strong owner oversight and cost controls are in place; and
- Difficulties in obtaining a highly qualified and experienced independent cost estimator.

2.12 With regard to WSDOT's PDM selection process, the industry stakeholders generally felt that WSDOT did a good job of selecting the optimal delivery strategy for a given project; however, several also noted that:

a) The size ($ value) of projects is growing too large.

b) On DB projects, WSDOT has recently been attempting to shift too much risk to industry for items or events over which contractors have limited to no control (see Section 3 for more details).

c) The legislative process for using GC/CM and PDB is too onerous and acts to limit more widespread use of these methods. The industry interviewees felt that WSDOT should have the ability to use these methods without going through the CPARB process. *(Note: This observation suggests industry would be in favor of the recently passed HB 1970, which waives WSDOT from certification requirements under RCW 39.10.270 requiring approval from CPARB for the use of DB, PDB, and GC/CM.)*

Estimating

2.13 Owner and industry stakeholders agreed that recent market volatility has made it increasingly difficult to develop realistic estimates, particularly for large DB projects with anticipated lengthy (multi-year) durations.

2.14 Nevertheless, industry interviewees found the WSDOT practice of publishing the anticipated cost range of projects helpful in conveying what WSDOT thinks a project is worth. While this understanding does not impact a contractor's own cost estimating of the work, it may affect their pursuit decisions. For example, as one contractor noted:

If we do a green sheet estimate and our number is more than 5% higher than the published range, then we need to decide whether to spend additional resources on chasing a project we likely will not win or that alternatively could be canceled if all bids come in outside of the WSDOT budget.

2.15 Regarding the wide variances often seen between WSDOT's published ranges and the winning bid, several industry stakeholders questioned whether WSDOT adequately considers the following when developing its Engineer's Estimates:

a) Contractor overhead costs, including the cost of complying with federal/state regulations and policies (for example, diversity goals, local hires, PLAs, apprenticeship programs, equipment standards for emissions, environmental regulations, Buy America, etc.);

b) Subcontractor / trade inflation, including that of DBE firms;

c) The extent to which WSDOT is attempting to shift risk to industry (particularly the risk of geotechnical conditions and utilities as discussed in Section 3); and

d) Project scale and schedule (and the risk of price escalation over the course of a 4 to 6 year project).

2.16 In response to industry recommendations that WSDOT "take a hard look" at its estimating practices to avoid delaying or canceling projects when bids come in too high, WSDOT indicated that it is planning to put together a working group to refine its Cost Risk Assessment and CVEP estimating processes. This includes:

a) Improving planning level cost estimates (less than or equal to 30% design) by conducting more detailed preliminary engineering and site-specific investigations;

b) Supplementing current practices with Independent Cost Estimate (ICE) services for complex projects in excess of $25M; and

c) Incorporating more of a "contractor's" view of project costs, including various risks posed by project constraints, milestones, third parties, site conditions, market conditions, etc.

DBE Goal-Setting

2.17 Prime contractors expressed several concerns regarding WSDOT's DBE goals. In general, they viewed goals as often being too "aggressive" and questioned whether WSDOT, in establishing project-specific goals, was appropriately capturing the "true capacity" of the DBE contracting community.

2.18 Additional representative feedback heard from prime contractors includes the following:

a) The construction market, particularly in the Puget Sound region, is currently busy, if not at capacity, allowing potential DBE partners to be more selective about the opportunities they choose to pursue and the risks they are willing to assume (e.g., DBE firms tend to be more reluctant to pursue DB opportunities, where the scope and schedule are less certain than traditional DBB).

b) Given these market conditions, high goals are overburdening the small business and DBE community, driving DBE price inflation and possibly causing good DBE firms harm as they are pushed to take on more work than they can reasonably manage. Such results are counterproductive to building a sustainable DBE industry.

c) WSDOT does not appear to be recognizing the very success of its DBE program.

   i) In continuing to set goals “high”, WSDOT is not considering that several firms have now graduated out of the program and no longer qualify for DBE status.

   ii) Primes are now contending with DBE firms that may lack the appropriate experience and/or resources to excel on a fast-paced DB project. To mitigate this risk, primes are including premiums in their bids to cover the potential need to expend additional resources on mentoring and/or corrective action.

2.19 In response to such concerns from the prime contracting community (which are largely consistent with those reported in WSDOT’s 2024 Disparity Study), the Office of Equity noted the following:

a) WSDOT generally accommodates prime contractors who can demonstrate having made “good faith efforts” to meet DBE goals.

b) The challenge is that primes often fail to adequately document such efforts, leading to approval delays.

2.20 Other public owners in Washington State noted that, relative to traditional DB, PDB and GC/CM may provide the ability for primes to better tailor work packages to the strengths of the available DBE community.

3. Risk Management

Risk Identification

3.1 The predominant risks on DB projects, from both the owner and industry perspectives, include unforeseen or differing site conditions, utility conflicts/relocations, and third-party coordination issues.

3.2 Industry practitioners further identified the owner's project management team, including what consultants may have been engaged, as a key risk item.

a) Multiple industry interviewees commented that if the General Engineering Consultant (GEC) team representing the owner is unknown, inexperienced with the PDM in question, or are incentivized (under cost-plus fee agreements) to excessively comment on submittals or over inspect the work, they may decline to pursue a project (or alternatively, include a high risk premium in their bids).

b) Others pointed to inexperienced WSDOT project engineers, who appear to lack sufficient empowerment to take a "best for project" approach and push back on preferences expressed by various design discipline leads at WSDOT headquarters.

Risk Allocation

3.3 As explored in interviews with other public owners in Washington State, as well as with other DOTs across the country, owner strategies for risk allocation can vary significantly based on internal preferences as well as the PDM being implemented. In general, however, most owners agree that the risk should reside with the party in the best position to manage it.

a) For fixed price DB projects, some owners have been moving away from their prior risk transfer approaches towards either:

i) Risk retention strategies by which the owner commits, for example, to a date certain for specific ROW or utility relocations, or

ii) Sharing strategies entailing deductibles, allowances, and contingency risk pools for geotechnical, utility, right-of-way or other potentially problematic risks.

b) Some owners also expressed that they have had success in using the PDB and GC/CM delivery methods to collaborate with industry to determine an equitable allocation of risk and the most cost-effective mitigation plan.

3.4 Such owner strategies are notable because industry stakeholders largely agreed that WSDOT, particularly in recent years, has been attempting to shift too much risk to contractors for things that they cannot control and for which they cannot in practice price into their bids a high enough contingency to make the risk versus reward tradeoff attractive. As a result, several shared that they opted to not pursue recent large DB projects such as the Brickyard and SR 520 projects.

3.5 According to various industry stakeholders, examples of WSDOT risk allocation practices that can adversely influence pricing and competition include the following:

a) **Geotechnical / Unknown Conditions**

i) The general consensus of industry stakeholders is that WSDOT does not perform a sufficiently robust field exploration program (with enough borings and lab/field testing) to allow contractors to interpret site conditions with confidence.

ii) Furthermore, WSDOT's Geotechnical Baseline Reports often direct bidders to assume highly conservative and thus unrealistic site conditions (e.g., the water table being at ground level despite field data showing it to be several feet below the surface).

iii) As these unlikely, yet conservative, assumptions will then form the basis for evaluating differing site conditions claims, bidders must choose to either develop what they think to be a competitive price based on their own assessment of the true site conditions risk or to price the more conservative design assumptions that WSDOT has set forth in its RFP.

b) **Utility Coordination / Relocation Risk**

i) WSDOT DB contracts typically shift responsibility for utility coordination, including executing relocation contracts with utility owners, to the contractor. Owner-provided utility information (included in the RFP) is for reference only, and the contractor must verify and coordinate with utilities to accommodate/ deconflict utility relocations as the design evolves.

ii) While shifting responsibility to the contractor, WSDOT still often inserts itself into the process and "quibbles" over language in the agreements the contractors are attempting to execute with the utilities, driving further process uncertainty.

c) **Permitting**

i) Several interviewees indicated that it is challenging to find innovative solutions for WSDOT projects. They attributed this perception in part to WSDOT's practice of adopting a very narrow project footprint for NEPA purposes, which can impose unnecessary constraints on a project's design and constructability.

ii) WSDOT's involvement with the permitting process was described as very inconsistent. Responsibility is assigned to the design-builder, yet WSDOT's permitting group typically acts as the intermediary between the design-builder and the permitting agency, controlling the flow of communications. If the design-builder were able to communicate directly with the permitting agency, they could get a better idea as to what is truly needed to satisfy agency needs.

d) **Stakeholder Coordination**

i) Contractors that have worked on fish passage projects indicated that the tribes, as part of the design review process, often request late additions, such as habitat restoration and infrastructure improvements, that were not part of the original scope of work, or that conflict with the review comments provided by WSDOT's internal subject matter experts.

ii) To avoid potentially time-consuming and costly design rework, one contractor suggested that WSDOT should consider inviting the tribes to the one-on-one meetings during the procurement phase so that potential conflicts between the expectations of the tribe and the WSDOT SMEs are identified early on. This would alleviate some of the uncertainty in pricing work.

4. Procurement Practices

4.1 According to industry stakeholders, in addition to the risk allocation practices discussed in Section 3 above, other WSDOT procurement practices that can affect competition and pricing include:

a) insufficient advance notice of project pipeline information,

b) restrictive evaluation criteria,

c) inconsistent administration of the Alternative Technical Concepts (ATC) process across project offices, and

d) unreasonable procurement timelines.

4.2 Such perceived issues are discussed in greater detail below.

Industry Outreach / Project Pipeline

4.3 Industry suggested that WSDOT would benefit from sharing project pipeline information as early as 4 to 5 years in advance to allow contractors to forward plan staffing and resources.

4.4 As noted in previously in paragraph 2.9, early socialization of projects with industry will not only allow the design and construction community to effectively plan a response and form teams, it would also help WSDOT develop a project scope that is attractive to contractors and aligns with market capacity.

4.5 In response to industry outreach questions, WSDOT indicated that it shares information regarding upcoming procurement actions through several forums, including:

a) A quarterly meeting to discuss the project pipeline

b) Meetings of an AGC/ACEC group focused on DB, at which upcoming DB projects can be discussed

c) WSDOT website postings of the STIP and annual project delivery plans

4.6 However, given legislative funding constraints, the question remains whether WSDOT can truly forecast its procurement schedule beyond one to two years to provide industry with a long-term capital plan that could confidently be used as a basis for staffing and business decisions.

Evaluation Criteria

4.7 A handful of contractors, noting that one firm has won a high percentage of traditional DB procurements, suggested that WSDOT consider “refreshing” their evaluation criteria to avoid the perception of bias. Interviewees found that in some cases:

a) Criteria seem to remain unchanged from project to project regardless of project size, scope or goals.

b) Experience requirements can be overly restrictive, particularly the required years of key personnel experience in specific roles and firm experience with methods such as PDB. Such requirements tend to favor larger firms with broader and more diverse experience.

4.8 This perception of WSDOT favoritism towards certain design-build teams is not new. As shown previously Figure 2.1, “Perceived WSDOT Bias Towards Specific Submitters” received the second highest number of votes (behind only “Project Sizes are Too Large”) as a reason to not submit on WSDOT DB opportunities.

4.9 To add some additional color to what other contractors perceived to be potential “bias” in selection decisions, one contractor (who has had reasonable but not remarkable success wining WSDOT work) countered with the following impressions of the WSDOT procurement process:

a) It is very easy to get shortlisted on a WSDOT project (i.e., the process and criteria are clear and transparent).

b) Once shortlisted, however, it becomes a matter of how much risk a firm is willing to assume. Because WSDOT’s DB scoring algorithm typically weights price much higher than technical (e.g., 80-90% price vs. 10-20% technical), the award is generally made to the lowest bidder.

c) It could therefore be inferred that the firm that has been very successful in winning WSDOT DB work simply has a much higher tolerance for risk (and therefore does not price as high a risk premium into its bids).

Alternative Technical Concepts (ATC)

4.10 The consensus of industry stakeholders is that WSDOT’s inconsistent administration of what is, on paper, a well-crafted ATC process, is hindering innovation.

4.11 A recurring theme in interviews was that some project offices are less receptive to considering ATCs than others.

a) As one interviewee noted, “We’ve heard ‘no’ so many times, we no longer waste our time attempting to develop innovative ideas if certain WSDOT personnel are involved”.

b) Similarly, another interviewee expressed frustration that WSDOT project teams will often reject ATCs without offering any explanation, noting that it can be a very helpful learning experience when WSDOT staff are more forthcoming with their ATC feedback.

c) Other industry interviewees speculated that the region and project offices likely lack sufficient authority to drive decision-making on ATCs and instead defer to discipline leads at WSDOT headquarters who appear to assert their own preferences instead of adopting a more holistic “best for project” approach to reviewing alternative solutions.

Procurement Timeline

4.12 Some interviewees felt that WSDOT does not provide proposers with adequate time to prepare responsive and competitive proposals.

4.13 By way of example, one interviewee pointed to the SR 520 Portage Bay project, recalling that for this project, which had a published range of $725-$900M, proposers only had 9-months to get plans to the design team, develop a conceptual design, meet with WSDOT on risk and ATCs, and develop an associated price proposal.

5. Project Administration

5.1 Industry stakeholders identified several factors that can influence the efficiency of the execution phase of a WSDOT DB project.

5.2 Such factors include the following:

a) **WSDOT staff experience.** Industry stakeholders indicated that there is a wide range in the experience levels of WSDOT project staff and familiarity with DB best practices.

i) Given staff attrition, WSDOT now has several relatively inexperienced project engineers, which can make it challenging to receive timely decisions.

ii) WSDOT also often relies heavily on GECs, who can hinder efficient progress by excessively commenting on design and other submittals.

b) **WSDOT design oversight processes.** Several industry stakeholders suggested that WSDOT's oversight processes add significant risk and uncertainty to the execution phase of a DB project. Contractors suspect that their design firm partners are now adding premiums to their price proposals to address the design churn that results from:

i) The perceived tendency of WSDOT's subject matter experts to request preferential changes (rather than reviewing design submittals for compliance only);

ii) Redundant and/or conflicting design comments raised by WSDOT's general engineering consultants (GECs) who are incentivized (under cost-plus fee agreements) to excessively comment on submittals; and

iii) WSDOT's practice of reviewing and "approving" contractor/trade/supplier-developed shop and working drawings that have already been accepted by the design-builder's Engineer of Record

c) **WSDOT hierarchy / information silos**

i) The industry perception is that innovation cannot be achieved on WSDOT projects due to overly empowered specialty discipline leads who continue to assert their own design preferences rather than take a more balanced, consensus-driven approach to what is best for the project as a whole.

ii) Furthermore, WSDOT's subject matter experts do not appear to coordinate their responses or reviews. Each discipline will independently review design submissions and request preferential changes without considering the impact of such change on other disciplines.