

Design-Build Pilot Program Evaluation

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16. Abstract The purpose of this project was to evaluate the Wisconsin Department of Transportation (WisDOT) pilot program for design-build project delivery. Under legislation adopted in 2019, WisDOT was authorized to award up to six highway or bridge projects under one of three delivery methods: low-bid design build, best-value design build, or fixed-price design build. The University of Wisconsin-Milwaukee Institute for Physical Infrastructure and Transportation (IPIT) research team interviewed alternative delivery program management staff from four peer states (Arkansas, Colorado, Maryland and Michigan). The pilot program presents several opportunities for WisDOT and its stakeholders. It allows WisDOT to develop and refine its policies and processes on a limited number of projects. Stakeholder outreach is particularly important when implementing an alternative delivery program.			
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EXECUTIVE SUMMARY

The purpose of this project was to evaluate the Wisconsin Department of Transportation (WisDOT) pilot program for design-build project delivery. Under legislation adopted in 2019, WisDOT was authorized to award up to six highway or bridge projects under one of three delivery methods: low-bid design build, best-value design build, or fixed-price design build. WisDOT is required to administer at least one of each of the three subtypes, with maximum costs of \$75 million for best-value and fixed-price, and \$25 million for low bid.

WisDOT is generally required to follow a two-step design-build procurement process, consisting of a qualification phase, followed by a proposal phase. In the qualification phase, a request for qualifications (RFQ) is prepared, and in response, design-build teams submit a statement of qualifications (SOQ). A technical review committee, consisting of WisDOT staff and representatives from the engineering and construction industries, reviews and scores the SOQs. WisDOT then has the option to obtain proposals, through a Request for Proposals (RFP) process, from at least two of the qualified firms. In a best-value procurement, the proposals are submitted in two parts: technical and price. Technical proposals may include “alternative technical concepts”, wherein the design-build team can propose different approaches that may reduce the cost or increase the quality of the project. The technical and price scores are combined in a predetermined manner to arrive at a final score for each team. In a low-bid procurement, only price is considered. To partially compensate for the cost of proposal preparation, unsuccessful teams are provided with a predetermined stipend which, if accepted, allows WisDOT to make use of any alternative technical concepts proposed by that team.

There are also a variety of requirements in the Code of Federal Regulations (CFR) which must be followed when using alternative delivery on a federal-aid highway project. The federal requirements relate to how projects are selected, how proposals are evaluated and the types of communication that are permitted between owners and design-build teams during the selection process.

The University of Wisconsin-Milwaukee Institute for Physical Infrastructure and Transportation (IPIT) research team interviewed alternative delivery program management staff from four peer states (Arkansas, Colorado, Maryland and Michigan). These states were selected as ones which might be able to offer valuable insights to WisDOT, based on discussions with FHWA and WisDOT staff. The interviewed states provided information about the structure and staffing of their alternative delivery program offices, project selection methods, evaluation and scoring procedures, stipend policies and lessons learned in the development of their programs.

Following extensive stakeholder outreach, WisDOT began the design-build procurement process. Using the screening tools proposed by their design-build consultant, WisDOT selected three projects, with the following results:

Table ES-1: Summary of Pilot Projects 1-3

Project	Type	Procurement Type	Est. Value	SOQs Rec'd	Teams Found Qualified	Proposals Requested	Award
US 45	Highway resurfacing	Low-bid	\$6 M	1	0	0	No
WIS 130	Bridge replacement	Best-value	\$35 M	5	5	2	Yes
WIS 125	Replace box culvert with bridge	Best-value	\$4 M	4	3	2	Yes

The IPIT research team reviewed the RFQ, SOQ, RFP and proposal documents, and conducted interviews with one or more design-build team(s) from each project, and with WisDOT project personnel on the WIS 130 and WIS 125 projects. Based on a review of the available data, the IPIT researchers concluded that the procurement process for the three projects conformed to the requirements of state statutes, federal regulations and the draft WisDOT Design-Build Manual for alternative delivery. However, researchers also concluded that two projects (US 45 and WIS 125) may not have been the best candidates for design-build delivery. As a non-complex pavement rehabilitation project, US 45 was an appropriate choice for the low-bid design-build delivery method. However, it failed to generate competitive interest, with only one SOQ received. As a relatively low-cost project with limited opportunity for design innovation, WIS 125 may have been too small and non-complex to benefit substantially from best-value design-build.

The IPIT research team developed 17 recommendations for possible improvement of the WisDOT alternative delivery program, divided into four categories:

Program Organization and Administration

1. Strengthen staffing and internal training.
2. Identify regional alternative delivery “champions.”
3. Continue outreach and stakeholder education.

Project Selection

4. Make greater use of the “Request for Letters of Interest”.
5. Increase minimum cost for projects considered for design-build.

Qualification and Proposal Phase

6. Consider one-step procurement for simple non-complex, low-bid design-build projects.
7. Revise Technical Review Committee membership and qualifications.

8. Increase the minimum number of qualified teams solicited to submit proposals.
9. Require receipt of environmental permits before issuing SOQ or RFP.
10. Allow alternative technical concepts (ATCs) for pavement design.
11. Allow more time for the development of ATCs.
12. Implement a tiered approach to stipends and allow stipends lower than 0.3 percent in certain circumstances.

Miscellaneous Recommendations

13. Expand WisDOT's alternative delivery toolbox to include Construction Manager/General Contractor (CM/GC) and progressive design-build.
14. Incorporate alternative delivery into WisDOT's performance improvement program.
15. Clarify the statutory ambiguity for projects receiving two SOQs.
16. Address issues related to the budgetary impact of encumbering funds for design-build projects.
17. Adapt the public information process to the different characteristics of design-build.

As noted in the report, recommendations 6, 7, 12, 13 and 15 would require a change in Wisconsin law and will not be immediately implementable by WisDOT.

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND

Like other state transportation agencies (STAs), the Wisconsin Department of Transportation (WisDOT) is tasked with the responsibility to plan, design, construct, operate and maintain a system of state trunk highways and bridges. It also administers a program to rehabilitate and improve higher functioning local streets and bridges. To perform this task, the department relies on a combination of internal staff and outside resources. These outside resources may include professional engineering consultants for project design, environmental documentation, construction oversight and related services. The department contracts with private construction firms to build the highway or bridge projects that have been planned, permitted and designed.

The goal of any agency is to construct infrastructure that meets purpose and need and provides the best value to system users. Like all public agencies, STAs are expected to deliver projects at a fair price, on a set schedule and with the least disruption to the traveling public. To accomplish these goals, a variety of contracting methods are used throughout the country to design and construct highway and bridge improvements. The most traditional of these methods, described below, is referred to as “design-bid-build”. A desire to improve the cost-effectiveness, efficiency, quality and schedule of highway and bridge projects has led to the adoption of a variety of “alternative” methods of project delivery.

This introductory chapter provides a brief overview of the introduction of alternative delivery in Wisconsin, an overview of alternative project delivery methods and the implementation of the pilot alternative project delivery program at WisDOT.

Introduction of Alternative Project Delivery in Wisconsin

Historically, except for a very limited number of specifically authorized exceptions, WisDOT has been restricted to utilizing the design-bid-build method of project delivery. Over the years, several studies have been undertaken, and proposals made, to expand the department’s authority to include other alternative methods of project delivery, including design-build. According to the Design Build Institute of America, 48 states have at least some authority to use design-build on transportation projects. These efforts culminated in the enactment of the Alternative Project Delivery statute (Sec. 84.062, Wis Stats.). This statute, which authorized WisDOT to proceed with up to six pilot design-build projects, is discussed in greater detail in Chapter 3.

As of the date of this report, three pilot projects have been selected for design-build delivery.

Table 1-1: WisDOT Pilot Design-Build Projects

Highway	Limits	County	Description	Delivery Method
US 45	CTH C-Gollnow Rd.	Waupaca/ Shawano	Construction/replacement of eight miles of pavement	Low-bid design build
WIS 125	I-41 – Bluemound Dr.	Outagamie	Removal of multi-cell box culvert and replacement with slab span structure	Best-value design build
WIS 130	WIS 23-Lone Rock	Richland	Bridge replacement	Best-value design build

The purpose of this study is to review the pilot program as it pertains to these three projects and to make recommendations for possible program improvements. The methodology used for this study is further detailed in Chapter 2.

Implementation of the Pilot Program

To assist in developing the pilot alternative delivery program, WisDOT hired a consulting firm which had previous experience assisting in the development of such programs. The scope of the consultant contract included:

- Project management plan, manual and guidelines
- Develop program management information system
- Assist with stakeholder outreach
- Recommend a project screening process based on FHWA tools
- Develop RFQ and RFP templates

Stakeholder outreach is particularly important when implementing an alternative delivery program. The different procurement methods require designers and constructors to employ new methods with which they may be unfamiliar. For example, construction firms that have not worked on design-build projects in other states may lack experience competing in a qualification-based selection process. Engineering firms and construction firms may not be experienced with forming joint teams to compete for projects. The requirement to provide a firm project cost before the design has been completed may also be an area where newly formed design-build teams are inexperienced. A good stakeholder outreach program can increase the willingness of firms to seek alternative projects, thus increasing competition and potential cost savings for owners.

A detailed summary of the stakeholder outreach plan is shown in Appendix A.

1.2 COMMON PROJECT DELIVERY METHODS

Although the authorizing statute is entitled “Alternative Project Delivery”, it is in fact limited to design-build, which is only one of the alternative delivery methods currently practiced in the United States. The most prevalent highway project delivery methods are:

Design-bid-build (DBB)

This is the most predominant method in the US, and, with very limited exceptions, the only method used in Wisconsin prior to 2022. Under this method, the project owner (WisDOT) follows a defined three-step process. First, project plans and specifications are developed. These can be developed by WisDOT, or by an engineering consultant hired by WisDOT using a qualification-based selection process. Second, itemized bids are accepted from a pre-approved list of qualified contractors, and the construction contract is awarded to the bidder with the lowest “responsive, responsible” total bid. Finally, the project is built by the selected contractor under WisDOT oversight. WisDOT may use private engineering consultants to assist it in the construction oversight process, however, final decision-making authority always rests with WisDOT. Although the base cost of the project is established in the bid, it is subject to addition and subtraction due to change orders necessitated by conditions unforeseen in the design process. For this reason, the final cost is not known by the owner until the project has been completed and closed out. It should be noted that change orders are also possible on design-build projects, although these may be reduced due to the transfer of risk from owner to contractor that is inherent in the design-build process.

Design-build (DB)

This is one of the more common methods of so-called “alternative project delivery”, and it differs from DBB in several key respects. Rather than separate design and construction contracts, the owner enters into a single contract with a design-build team to provide design and construction services. The design-build team typically includes a designer and contractor. A design-build project is typically awarded using a two-step process. First, the owner issues a Request for Qualifications (RFQ). Interested design-build teams then submit a Statement of Qualifications (SOQ), and a specified number of qualified teams are invited to submit a proposal for design and construction services. The evaluation of proposals can be based solely on cost (low-bid design-build), a combination of cost and technical merit (best-value design-build), or on the amount of services provided for a pre-determined cost (fixed-price variable scope design-build).

Construction Manager/General Contractor (CM/GC)

This method of alternative contract delivery was approved for use on federal-aid highway projects in 2012. Under this method, an owner enters into a pre-construction contract with a contractor, who then provides early input into the design process on constructability issues that may affect cost or schedule. This would increase WisDOT staff knowledge about

constructability issues, providing opportunity for improvement in the development of design-bid-build projects as well. Once the design has been completed, if the contractor and owner can agree on cost, they enter into a contract for construction, however, the owner is not obligated to do so. The owner will typically employ an independent cost estimator (ICE), to assist in the determination of reasonable cost.

According to the Federal Highway Administration (FHWA), “the CM/GC method has proven to be an effective method of project delivery through its limited deployment in the FHWA's Special Experimental Project Number 14 (SEP-14) Program¹. Utilizing the contractor's unique construction expertise in the design phase can recommend for the contracting agency's consideration innovative methods and industry best practices to accelerate project delivery and offer reduced costs and reduced schedule risks.”

Progressive Design-Build

Progressive design-build is a more recent innovation which combines some elements of traditional design-build and CM/GC. Under this method, the owner selects a design-builder during a much earlier point in the project’s development (typically before environmental approvals have been obtained), and the design-builder is more involved in early phases of project development. In the first phase of this two-phase process, the design is advanced to a point where a guaranteed maximum price can be determined. As with CM/GC, the owner will typically involve an independent cost estimator.

1.3 SUMMARY

Wisconsin is a relative latecomer to alternative delivery for highway projects. This late adoption presents an opportunity to benefit from the experiences of states with long experience in alternative methods of delivery. Although there are several recognized methods of alternative delivery, Wisconsin’s pilot program has been restricted to three specific types of design-build.

The pilot program presents several opportunities for WisDOT and its stakeholders. It allows WisDOT to develop and refine its policies and processes on a limited number of projects. The lessons learned from these pilot projects, as well as from the successes of other states, can lead to the creation of a successful large-scale alternative delivery program. For stakeholders, the pilot program can showcase the business opportunities presented by alternative delivery projects and provide experience in forming design-build teams and acquiring the skills needed to compete successfully for projects.

¹ SEP-14 is no longer required for CM/GC projects.

CHAPTER 2: METHODOLOGY

To achieve the project objectives, the IPIT team acquired data from WisDOT documentation, a review of available literature, peer-state interviews and interviews with design-build teams that submitted SOQs or proposals for the first three pilot projects.

2.1 WisDOT DATA

A significant amount of data on the implementation of the design-build program was made available by WisDOT to the IPIT project team.

Table 2-1: Major WisDOT Data Sources

<u>Data Category</u>	<u>Included Data</u>
Project Management Plan	Draft and Final Project Management Plans
Design-Build Manual	Draft Manual – July 2021
Project Screening	FHWA CASE webtool reports
	Project Risk Assessment tools
	Candidate project information
Internal Training	Region workshop PowerPoint presentation
Stakeholder Outreach	Stakeholder Outreach Plan
	Industry workshop PowerPoint presentation
Pilot Project Data	Requests for qualifications
	SOQs received
	SOQ Scoring manual
	SOQ Scoring documents
	Requests for proposals
	Instructions to proposers
	Requests for proposals
	Proposal evaluation manual
	Proposals received
	Proposal scoring documents

2.2 LITERATURE REVIEW

A large body of research exists in the field of alternative project delivery. The literature review for this project was focused on research in the following areas:

- Project Selection
- Qualification of Design-Build Teams
- Evaluation of Design-Build Proposals
- Post-Award Contract Administration Process
- Other Innovative Contracting Methods
- A Review of FHWA CASE Project Tool Selection
- Performance Measurement

2.3 REVIEW OF APPLICABLE STATUTES AND REGULATIONS

The IPIT team reviewed the Wisconsin alternative delivery statute and Code of Federal Regulations related to alternative delivery on federal-aid highway projects. This review was conducted to assist in determining if the pilot projects were procured in accordance with state and federal requirements, and to identify potential changes to the state statute that could improve Wisconsin's program.

2.4 PEER STATE INTERVIEWS

The IPIT team contacted Mr. Dave Unkefer, a senior engineer in the Construction and Project Management Team at Federal Highway Administration (FHWA). Mr. Unkefer is a recognized national expert in alternative project delivery. He was requested to recommend state DOTs which have advanced programs in alternative project delivery. Because of WisDOT's expressed interest in Progressive Design-Build, a specific emphasis was placed on finding states that utilize that delivery method.

Mr. Unkefer provided contact information from four state DOTs: Arkansas, Maryland, Montana and Utah. Based on a recommendation from WisDOT, the team also reached out to Colorado DOT. To interview a state in Wisconsin's geographic region with a significant alternative design build program, the IPIT team also contacted Michigan DOT. Virtual interviews of 1-1.5 hours were eventually held with staff from Arkansas, Colorado, Maryland and Michigan.

Each state received a pre-interview questionnaire which focused on providing background information into the state's alternative delivery program, how projects are selected, how SOQs and proposals are evaluated, and what metrics are used to measure program success. An outline of the pre-interview questionnaire is shown in Appendix B.

The interviews are summarized in greater detail in Chapter 5 of this report.

2.5 DESIGN-BUILD TEAM INTERVIEWS

With the assistance of WisDOT, the IPIT team reached out to representatives of each design-build team for interviews about their experience with the design-build process. The teams that were contacted are shown in Table 2-2.

Table 2-2: Design Team Interviews

Project	Team	Status	Interview Conducted?
US 45	Northeast Asphalt/Kapur	Submitted SOQ, found not responsive	Yes
R	Granite/Westbrook	Qualified, not advanced	Yes
	Lunda	Qualified, not advanced	Yes
	Zenith Tech	Qualified, not advanced	Yes
WIS 130	Ames	Qualified, advanced, proposal not accepted	Yes
	Kraemer North America (Kraemer NA)	Awarded	Yes
WIS 125	Musson/Baxter	Qualified, not advanced	Yes
	NE Asphalt/Kapur	Submitted SOQ, found not responsive	No ²
	Kraemer NA	Qualified, advanced, proposal not accepted	Yes
	Pfeifer	Awarded	No

An outline of interview questions is shown in Appendix C.

2.6 PILOT PROJECT REVIEW METHODOLOGY

A review was conducted of each of the first three pilot projects. Each review consisted of a project overview and summary of the qualification and proposal phases of the procurement. This included a review of documents related to these processes, as well as summaries of the interviews with the proposing teams. Interviews were conducted with successful and unsuccessful proposing teams, and with WisDOT project staff. In the case of one team that proposed on two projects (Kapur/Northeast Asphalt), only one interview was conducted.

2.7 CONCLUSIONS AND RECOMMENDATIONS

Conclusions and recommendations were developed by the research team based on the review of the literature, interviews with peer states, design-build teams, WisDOT project staff and review of the first three pilot projects.

² Interview with Northeast Asphalt/Kapur team was conducted before WIS 125 project, and therefore included discussion of US 45 project only.

CHAPTER 3: WISCONSIN STATUTE AND FEDERAL REGULATIONS

3.1 WISCONSIN ALTERNATIVE DELIVERY STATUTE

Wisconsin law generally requires WisDOT to award highway construction contracts to the “lowest competent and responsible bidder.” Authority for the alternative contract delivery pilot program was granted to WisDOT by 2019 Wisconsin Act 9. These provisions were further amended by 2021 Wisconsin Act 58 and 2021 Wisconsin Act 240. The provisions for alternative delivery are contained in Section 84.062 of the Wisconsin Statutes.

The statute establishes criteria for:

- Number, type and size of projects
- Composition of the technical review committee
- Soliciting and reviewing statements of qualifications
- Soliciting and reviewing technical and cost proposals
- Stipulated fees (stipends)
- Appeal process

Number, Type and Size of Projects

The statute allows WisDOT to administer six projects with a maximum total cost of \$250 million. It defines three subtypes of design-build contracts: best-value, fixed price-variable scope and low-bid. It further requires WisDOT to administer at least one of each of the three subtypes, with maximum costs of \$75 million, \$75 million and \$25 million, respectively.

Composition of the Technical Review Committee (TRC)

The TRC must consist of five members: two WisDOT Project Development employees, one WisDOT region employee, one person representing a state association of engineering design companies and one person representing a state association of construction companies. No person affiliated with a design-builder can be a member of the TRC. There is no requirement in the statute that TRC members have any qualifications, expertise or level of experience.

Soliciting and Reviewing Statements of Qualification (SOQ)

The statute lists 15 specific qualifications that a design-build team must demonstrate to be considered a qualified and responsible bidder. These are generally related to experience, staff qualifications, financial capacity, satisfactory past performance and absence of past discipline or debarment.

The TRC may then request technical and cost proposals from at least two but not more than four bidders who it has determined to be qualified and responsible. The statute requires that the selection criteria for advancement to Phase 2 (Technical Proposal) be included in the RFQ. If less than two qualified responses are received, WisDOT may cancel or re-advertise the project.

Soliciting and Reviewing Technical and Cost Proposals

Proposals are solicited in two separate and distinct parts: technical and cost. The request for proposals must contain specific information about the project scope, schedule and budget. It must also list the criteria used for evaluating proposals, including the process for reviewing and approving alternative technical concepts.

The statute lists items that must be included in the bidder’s technical proposal. The design-builder must perform a minimum of 30 percent of the construction of the project. The technical proposals are numerically scored by the TRC in accordance with the criteria shown in Table 3-1.

Table 3-1: Scoring and Award Criteria

Project Type	Scoring Methodology	Award Criteria
Low-bid Design Build	TRC only determines if proposal is “responsive”. No score or ranking given.	Award to the lowest cost responsive bidder.
Fixed Price Variable Scope Design Build	TRC only determines if proposal is “responsive”. No score or ranking given.	Award to responsive bidder who provides “maximum amount of services” for a price not exceeding the stated maximum price.
Best-value Design Build	Responsive proposals are scored and ranked.	<p>Award to highest total score (technical score plus cost score).</p> <p>Lowest bidder MUST receive maximum cost points, which must be between 45 and 75 percent of total available points.</p> <p>Higher bidders have their cost points reduced by one percent from the maximum for each percent their price is above the lowest bidder.</p> <p>No technical proposal may receive more than 55 percent of total available points</p> <p>Maximum 20 percent of technical proposal points may be awarded for qualifications and ability to deliver by deadline.</p>

Stipulated Fees

WisDOT is required to provide all unsuccessful proposers with a stipend of not less than 0.3 percent of the estimated design and construction cost. In exchange for the stipulated fee, WisDOT obtains the right to use any of the bidder's technical proposals. If the bidder rejects the stipulated fee, WisDOT may not use the bidder's technical proposals.

Appeal Process

The statute lists specific circumstances under which an unsuccessful bidder may appeal for a judicial review of decisions made with relation to a request for qualifications, request for proposals, or an intent to award a contract.

Analysis and Comments

Two instances were identified where the language in the statute may be open to multiple interpretations. The statute requires that at least one of the pilot projects must be "low-bid design build". WisDOT issued an RFQ for the US 45 project as a low-bid design build project, but there were no SOQs submitted that were deemed to be qualified. It is unclear whether a project that has not advanced to the proposal stage will satisfy the requirement for use of a particular procurement type under the statute. The department has indicated that they may or may not issue another low-bid design build RFQ, depending on the appropriateness of the low-bid design-build process for project(s) identified during the project selection process.

The language regarding the department's options in the case of less than three qualified teams is also somewhat unclear. The statute states:

The technical review committee shall certify at least 2 but not more than 4 design-builders as qualified responsible bidders. If the office does not receive at least 2 responses to the request for qualifications or if the technical review committee certifies only one design-builder as a qualified responsible bidder, the office may re-advertise or cancel the project.

In the case of a single responsible bidder, it is unclear whether the department is permitted to solicit a proposal from that bidder. This is due to the use of the permissive "may", instead of "shall" in the clause referring to re-advertisement or cancellation. The department believes that it does have the statutory authority to proceed with only one qualified team but has expressed that it would be reluctant to do so.

3.2 FEDERAL REGULATIONS

Section 23 CFR 636 of the Code of Federal Regulations describes the policies and procedures that states must follow for federal-aid design-build projects.

General Requirements

This section explains in detail how the design-build process relates to the requirements of the National Environmental Policy Act (NEPA), with particular attention paid to ensuring an objective environmental process where the design-build proposers do not assume unnecessary risk if the NEPA process results in a significant change to the proposal.

An agency may issue an RFQ or RFP prior to conclusion of the NEPA process, provided that certain safeguards are in place that no commitments are made as to any alternative, including the no-build alternative. If the agency proceeds to award a design-build contract prior to conclusion of the NEPA process, the design-builder may proceed with:

- Preliminary design
- Identification of alternatives and alternatives analysis
- Compliance with other NEPA requirements
- Developing the design of the preferred alternative detail

In addition, the design-builder must not prepare the NEPA document or have any decision-making responsibility with respect to it. Any consultants who prepare NEPA documents must be subject to control of the contracting agency, and the contract must include a termination provision if the no-build alternative is selected.

The decision to use stipends should be based on an analysis of the estimated proposal development costs and the anticipated degree of competition in the procurement process. Risks may be considered, identified and allocated in the RFP document and the contract. Risk analysis must consider at least the following:

- Governmental risks
- Regulatory compliance risks
- Construction phase risks
- Post-construction risks
- Right-of-way risks

RFP and RFQ documents must address any potential conflict of interest issues.

Selection Procedures and Award Criteria

In most instances, a two-phase design-build selection procedure should be used, consisting of an RFQ followed by price and technical proposals in response to an RFP. Normally, between three and five firms should be short listed, and the maximum number shall not exceed five unless warranted by special circumstances.

In a low-bid design-build project, a one-step procurement may be used where proposals are accepted from all prequalified bidders. In this case, the solicitation must clearly state the factors that establish an acceptable technical proposal.³

³ The one-step procurement process is not allowed under the Wisconsin Alternative Delivery Statute.

Proposal Evaluation Factors

Price must be an evaluation factor. When the contract is awarded prior to conclusion of the NEPA process, different rules apply as to price, because the final scope of the project is not known. In that case, evaluation may be based on qualitative measures, with a reasonable price determined by negotiation, an independent estimate, or other means.

Except in certain circumstances, in a two-step procurement, prequalification standards should not be included in the technical criteria. Criteria should be limited to quality, quantity, value and timeliness. Any rating method may be used to compare proposals.

Information Exchange

The regulations specify the circumstances under which communication may take place between the agency and owner to clarify a proposal or address issues which might prevent a proposal from being placed in the competitive range. Communication may not be used to cure deficiencies or omissions in a proposal, materially alter the technical or cost elements of a proposal, or otherwise revise a proposal.

Discussions, Proposal Revisions and Source Selection

The solicitation may include notification that the agency may enter into negotiation of price, schedule, technical requirements, contract type or other terms in order to obtain the best value project. If discussions take place, they must include all proposals in the competitive range. Proposers may revise their proposals as a result of these discussions. At the conclusion of discussions, the proposers are requested to submit a best and final offer.

Analysis and Comments

The federal regulations are generally more permissive than the Wisconsin statute and allow for some additional flexibility in the design-build procurement process. These differences include:

- Allowing one-step procurement in a low-bid design build project. This is not allowed under current Wisconsin law.
- Allowing design-build procurement prior to completion of the NEPA process. Although this is not specifically prohibited in Wisconsin, it presents certain risks which are discussed elsewhere in this report and may be more useful with other alternative delivery methods, such as CM/GC or progressive design-build.
- Allowing for “best and final offer” negotiations. This is not addressed in the Wisconsin statute, and may be worthy of further consideration, if it is determined to be permitted under state law.

CHAPTER 4: LITERATURE REVIEW

4.1 INTRODUCTION

In 2002, the Federal Highway Administration (FHWA) established regulations governing the use of the design-build delivery method on federal-aid highway projects. Since then, design-build has been utilized in some form in at least 48 states. Design-build differs from the more traditional design-bid-build method by allowing the owner to enter into a single agreement with a design-build entity having responsibility for both the design and construction phases of the project, as opposed to having separate and distinct design and construction contracts. This has the potential benefit of improving project efficiency and encouraging innovation which has led to its widespread adoption in the United States (DBIA).

The objective of this research project is to conduct a third-party evaluation of WisDOT's design-build pilot program. As part of this evaluation, a review of literature created by other states, agencies, and research teams pertaining to their implementation, application, and studies of design-build was conducted. This literature review aims to put forward key findings presented in the literature. The review was divided into six key sections that were each deemed of importance to WisDOT and were of relevance/importance to any alternative delivery design-build program:

- Project Selection
- Qualification of Design-Build Teams
- Evaluation of Design-Build Proposals
- Post-Award Contract Administration Process
- Other Innovative Contracting Methods
- A Review of FHWA CASE Project Tool Selection
- Performance Measures

4.2 PROJECT SELECTION

When discussing any form of alternative project delivery method, project selection methodology is critical to project success. Choosing the appropriate project to be delivered with design-build can dramatically cut cost and time, while choosing poorly can lead to a delayed project and, depending on the type of stipend policy in place, increased project cost. In general, the cost, schedule, state highway agency characteristics, project characteristics, public policy, and risk elements were determined to be the most important factors for deciding a project delivery method as determined by various literature on the topic. Table 4-1 represents all these decision factors with their different elements to illustrate the decision making necessary in each category (Demetracopoulou et al, 2019).

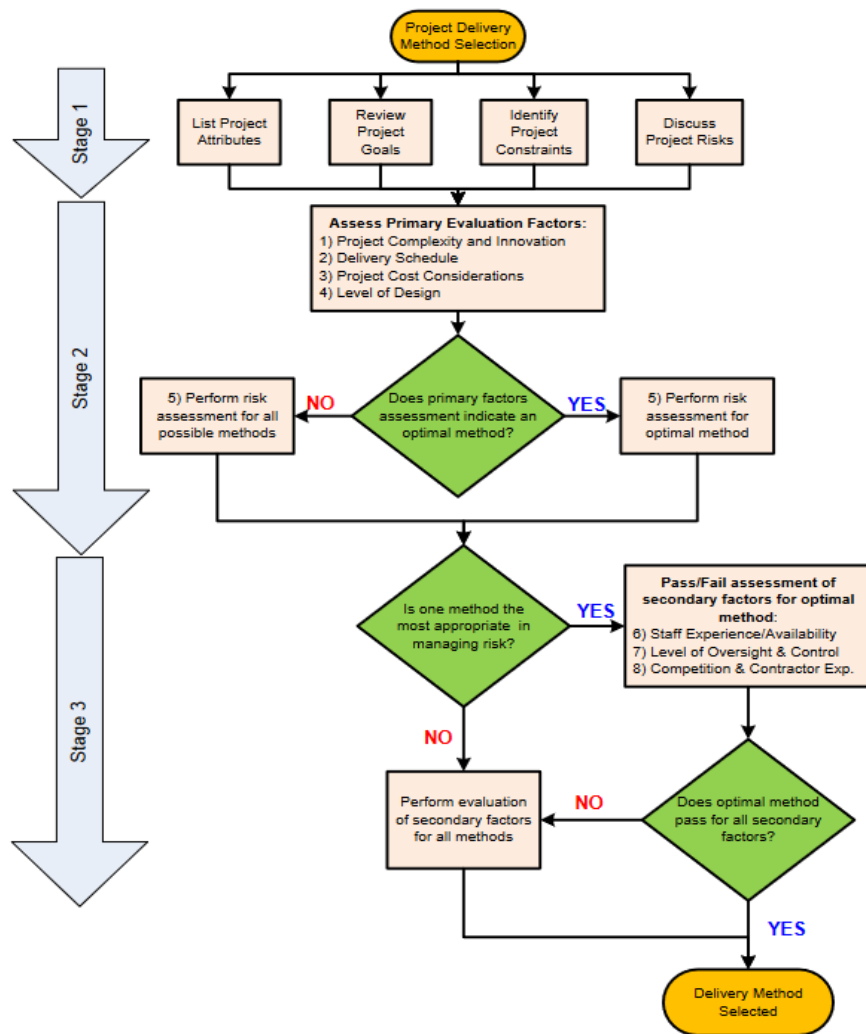
Table 4-1: Decision Categories and Elements (Source: Demetracopoulou et al, 2019)

Important Decision Element Categories	Important Decision Elements
Cost	Lower total project cost
	Marketplace conditions
	Expenditure rate/agency financial capacity
	Maintenance costs
	Cost control
	Influence of procurement cost
Schedule	Criticality of schedule
	Schedule acceleration
Agency characteristics	Agency involvement and control
	Development of institutional knowledge
	Agency experience
	Staffing required
	Agency inexperience
	Agency level of workload
Project characteristics	Staff capability
	Innovation
	Complexity
	Level of scope definition
	Level of design complete
	Site conditions
	Traffic delays
	Need to integrate and design construction
	Project size
	Coordination challenge
	Prescriptive specifications
	Project flexibility
	Contract award process
	Flexibility in quality control
Public policy/regulatory issues	Federal/state/local laws
	FTA/EPA regulations
	Labor unions
	Stakeholder community input
Risk elements	Likelihood of cost growth
	Likelihood of schedule growth
	Likelihood of disputes and claims
	Unidentified utilities
	Uncertain site conditions
	Third party agreements
Acquisition of right-of-way	

There are many elements that an agency needs to take into consideration such as federal/state/local laws and regulations, labor issues, and stakeholder/community input.

State agencies place emphasis on different factors when choosing their project delivery method. One method followed by several states, including South Carolina, Colorado, and Minnesota, utilizes the Project Delivery Selection Matrix, developed by the FHWA Transportation Management Pooled Fund Study. This method, shown in Figure 4-2, places more emphasis on the delivery schedule, project complexity and innovation, level of design, and cost while placing lesser emphasis on staff experience, level of oversight, and competition/contractor experience (Molenaar et al., 2020). Some state agencies may expand the list of important factors to include factors they deem to be as significant as the ones chosen by FHWA. Further factors listed by other state agencies include project duration, project flexibility, approval requirements, potential stipend, and proposal costs among other factors (Molenaar et al., 2020).

Figure 4-1: FHWA Project Delivery Selection Matrix Process (Source: FHWA)



To aid with the decision process, some state agencies use custom software that processes project factors and determines suitability for Design-Build. For example, Texas Department of

Transportation (TxDOT) has developed a decision support tool called Alternative Delivery System (ADS). The TxDOT tool processes user inputs on twelve select project characteristics that relate to the efficiency of the Design-Build delivery method as well as user weights on four aspects of the project. Figure 4-2 demonstrates the preliminary questionnaire the tool presents the user before they begin inputting key project information. The tool then performs calculations to determine whether a design-build delivery method would be recommended (Demetracopoulou, 2020). Regarding these characteristics, a further study by Demetracopoulou determined that opportunity for innovation and designer-contractor integration were the strongest characteristics in favor of design-build while well-known site conditions were determined to be the strongest in favor of Design-Bid-Build (Demetracopoulou et al, 2019).

Figure 4-2: ADS Yes or No Checklist for Project Delivery Method Selection (Source: Demetracopoulou et al, 2020)

TxDOT ADS Decision- Support Tool Version 2.0		Step 1
<i>Please answer the following questions and take into consideration any warnings before continuing the evaluation:</i>		
Is the project scope clearly defined, allowing the tool to determine the most appropriate project delivery method?	No	<input checked="" type="checkbox"/>
WARNING: This tool has only been validated for projects with clearly defined scope. Please re-evaluate this project with the ADS tool when the project scope is well-defined.		
Is the project fully funded, or will it be fully funded before the selection of the delivery method?	No	<input type="checkbox"/>
WARNING: The current version of the tool has been validated for funded projects only.		
Do the project conditions require TxDOT to have complete control over the design and construction process?	Yes	<input type="checkbox"/>
WARNING: Typically, the design-bid-build method is preferred when the agency requires complete control over the project's design and construction process.		
Is the project design (PS&E) currently at an advanced stage?	Yes	<input type="checkbox"/>
WARNING: If selecting design-build, consider whether the savings from innovation and risk transfer are likely to exceed the cost of the PS&E to date.		
Are resources available to make decisions in an expedited manner to avoid schedule delays?	No	<input type="checkbox"/>
WARNING: The lack of ability to make decisions in an expedited manner will reduce the effectiveness of alternative delivery methods.		
		Go to Step 2

The reference to full funding in Step 2 of Figure 4-2 may be subject to different interpretation depending on the policies of individual states and their funding sources.

4.3 QUALIFICATION OF DESIGN-BUILD TEAMS

In a typical design-build selection, the state agency will invite several pre-qualified design-build teams to submit proposals. Most state agencies place emphasis on three separate categories in the evaluation of a design-build team's qualifications: team structure, experience of key individuals, and past performance (Molenaar et al., 2020).

The design-build team should include qualified staff with experience in design-build delivery of projects with similar size and scope⁴. This is determined by the state agency through soliciting

⁴ May be difficult to achieve in states with limited design-build experience, such as Wisconsin

and evaluating Statements of Qualifications from potential design-build teams. Criteria often solicited include the qualifications of a project manager to oversee the project, a design engineering team that would oversee the design of the project, and a construction management team to oversee the construction. Another key aspect is the experience of the different elements of the design-build team. Typically, owners require the team have experience on at least five projects that are highly related to the current project within the last 10 years. To gauge performance, the team is then tasked with evaluating themselves as well as providing references from the owners of the projects. If there were any delays, budget increases, or any other discrepancies, the team needs to mention them as well as explain why they occurred. The state agency then scores the team and places weights on each of these qualities (typically 20% on team structure, 40% on experience, and 40% on past performance). The state agency team that evaluates proposals typically varies from state to state but should include the PM, DM, an administration representative, and technical experts. Finally, based on this evaluation, the agency selects several teams to proceed to the proposal phase (Molenaar et al., 2020).

4.4 EVALUATION OF DESIGN-BUILD PROPOSALS

Once the qualifications of select design-build teams are determined to meet the minimum requirements of the agency, and a short list of teams (which may not include all qualified proposers) is determined, the agency will move to a second phase of selection: the request for project proposals.

When choosing from an assortment of proposals, state agencies employ different methods based on the project scope and cost. More advanced projects with many layers of difficulty require proposals that fit their nuance while more straightforward projects require a more linear method of proposal selection. The two most common methods are low-bid and best-value (Molenaar et al., 2020).

Low-bid is essentially choosing the lowest-cost proposal that meets the project requirements. Due to its linearity, it is very easy to implement since only one factor (cost) is considered. Therefore, low-bid can be very beneficial when choosing a proposal for a simple linear project that has little or no potential for innovation. Low-bid's usefulness is diminished on more complex projects that present opportunities for the design-build team to propose cost, time, or quality innovations that the owner may not have previously considered. This is due to low-bid methods not taking innovation into account in the proposal evaluation phase (Chaudhary et al., 2020).

Best-value is the more complex of the two methods of selection and is typically preferred for larger scale and more complex projects. In a best-value selection, cost is one of several criteria considered. In addition to cost and qualifications, the owner will evaluate the design-build team's proposed approach to the project, including suggested design or construction innovations that may improve time, cost, or construction quality. Because this method requires significant investment of resources by the proposing team, the owner will typically provide a monetary stipend to compensate for the costs of proposal development. Stipends are a very effective method of improving proposals and hence project quality since they attract the most qualified

design-builders, encourage proposers to put more effort into their proposals, provide equal opportunity to both large and small firms, and increase innovation due to owners retaining the rights to any creative idea from unsuccessful proposals. Table 4-2 displays typical stipend rates utilized by several state DOTs for their various project sizes. Other states typically create project value brackets that each have a separate stipend rate. While owners were typically more satisfied with best-value, it is more costly to implement. Additionally, best-value isn't as effective in simpler projects with less opportunity for innovation (Chaudhary et al., 2020).

Table 1-2: Stipend Rate by State Agency Source: Chaudhary et al., 2020

State Transportation Agency	Stipend Range
Alaska (2005)	0.10% (large projects)-0.20% (small projects)
Arizona (2007)	Set fee of 0.2%
Arkansas (2015)	0.02% (large projects)-0.2% (small projects)
California (2008)	0.1%-0.3%
Colorado (2016)	0.05%-0.15%
Maryland (2013)	0.18%
New York (2005)	0.1% (large projects)-0.3% (small projects)
Washington (2020)	Minimum equal to 0.3% of engineer's estimate
West Virginia (2014)	\$3-\$20 million, no stipend; \$20-\$50 million, stipend of 0.18%

4.5 POST-AWARD CONTRACT ADMINISTRATION

As discussed previously, many state agencies placed some form of emphasis on staff qualifications and experience when discussing implementation of design-build. Due to the uniqueness of each agency and project, variations between agencies and projects are expected. However, both the agency and the personnel within it need to be qualified.

According to the Guide for Design Management on Design-Build and Construction Manager/General Contractor Projects, there are several criteria that must be present in the agency, such as the culture, the processes, procedures, and standards, and the communication with stakeholders. The guide states that an agency's formal and informal culture must be supportive of innovation and change for a smooth transition. When transitioning, certain processes and standards may need to be re-examined to ensure successful implementation. For example, procedures might need to be adjusted in order to ensure proper and timely project review. Standards are typically explored by the agency in a manner that fits their preference while ensuring expectations are clearly presented to avoid conflict with the design-builder. Finally, an agency needs to be communicative with stakeholders and it also needs to present a process to allow innovative ideas from proposers (Minchin et al., 2014).

Agency staff also need to possess certain qualities in order for a design-build program to succeed. Personnel need to be innovative and open to new ideas to aid design-builders in the application of their design. Due to the fast nature of design-build projects, staff must be

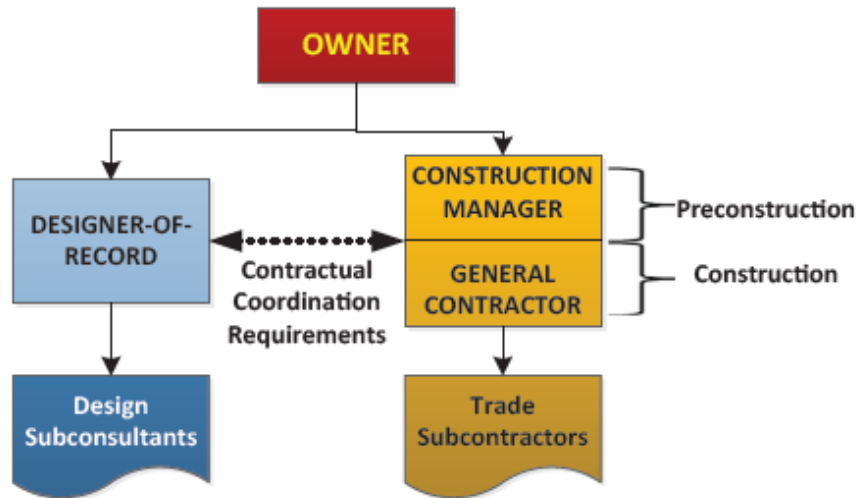
comfortable with working on new projects more frequently. Additionally, staff must be very flexible, capable of working under pressure, and able to multitask. Due to the smaller size of design-build teams, staff also need to be very knowledgeable in their respective technical areas and might need to independently oversee multiple project elements. An agency can assign a unit to support design-build teams, if needed. Finally, during the creation phase of a design-build team, additional training might be needed to achieve some of these traits amongst personnel (Minchin et al., 2014).

4.6 OTHER INNOVATIVE CONTRACTING METHODS

In addition to Design-Build, there are other common alternative project delivery methods that are utilized by state agencies. The two most popular alternatives are Construction Manager/General Contractor (CM/GC) and Progressive Design-Build (PDB).

In CM/GC, the owner enters into a contract with a construction manager, who is chosen through a best-value or qualifications-based approach, to aid in the design phase of the project. The construction manager provides input on pricing, scheduling, and other criteria. The owner has a separate contract with the project designer. Near the end of the design phase, a maximum price is negotiated between the owner and construction manager after which the construction manager becomes the general contractor (FHWA). This process gives the owner, in this case the state highway agency, more control over the project design and allows the owner to allocate proper personnel to their appropriate positions. The benefits of CM/GC arise from involvement of the CM in the design process at an early stage (Minchin et al., 2014).

Figure 4-3: CM/GC Team Dynamics (Source: Gransberg et al., 2020)



PDB is the method by which the owner of the project hires the design-builder in the preliminary planning phase based on qualifications or pricing, and the design-builder aids the owner in “progressing” toward a design and final price for the project. In a sense, it is an evolution of both CM/GC and design-build. Due to the owner’s increased involvement with the design-builder, they can have more control over the scope, cost, and schedule of the project while maintaining a lot of the advantages of a design-build contract (Loulakis et al., 2018). On the other hand, the owner still doesn’t have as much control over the project as they had when administering a design-bid-build contract.

4.7 PERFORMANCE MEASURES

A survey of 41 transportation practitioners across the country (Therrien, 2018) was used to identify performance measures that state transportation agencies can use to gauge the success of individual alternative delivery projects, or programs as a whole. The six most cited measures are shown in Table 4-3.

Table 4-3: Most Cited Design-Build Project Performance Measures

Performance Measure	Metric
Proposals from qualified contractors	Number of Qualified Contractors
Milestone dates	Achieved date vs. estimated date
Construction duration	Planned vs. actual duration or duration compared to similar scope D-B-B project
Total project cost	Cost vs. similar scope D-B-B project
Project cost at award	Actual cost vs. estimate
Accepted Alternative Technical Concepts	Number of ATCs proposed and accepted

4.8 CONCLUSIONS

This literature review was conducted to identify common practices used by state transportation agencies and recommended by the FHWA. A detailed study of these practices and recommendations, together with an evaluation of the performance of the pilot projects, can assist WisDOT as it transitions from the pilot projects to a more permanent alternative contract delivery program.

The literature review has identified several tools currently used to prioritize and select design-build projects. These tools are used to analyze the characteristics of a project and recommend the optimal project delivery method. When submitting a design for a design-build project, the design-builder needs to be capable in the scope of the project as well as have a record of timely project delivery and proper team structure. Following the receipt of multiple proposals, state agencies need to select the best proposal based on cost or best-value. When evaluating proposals, the state agency needs to include qualified staff, proper processes and scoring procedures, as well as proper communication with stakeholders. Finally, when considering design-build as a project delivery method it is pertinent to be reminded of other innovative project delivery methods such as CM/GC and PDB, which may have advantages over design-build for certain project types.

This literature review has found that development of specific processes for project selection, qualification and proposal review, and contract administration are critical in the creation of a successful design-build program. Later sections of this report will discuss how these processes have been addressed by WisDOT in the pilot program, and lessons that can be learned from other agencies to improve the performance of WisDOT’s alternative contract delivery program in the future.

CHAPTER 5: PEER STATE INTERVIEWS

Virtual interviews were conducted with alternative project delivery managers from four state departments of transportation: Arkansas, Colorado, Maryland and Michigan. These states were selected after consultation with the WisDOT alternative contracting team and the Federal Highway Administration (FHWA). Each of these states was deemed to have a mature and successful alternative delivery program with best practices that could be of value to WisDOT. The purpose of the interviews was to gain an understanding of the alternative delivery program in that particular state, including:

- Size and scope of alternative delivery program
- Types of alternative delivery methods used by the agency
- Internal staffing and structure of the alternative delivery office
- Methods of training staff and educating contractors on alternative delivery
- Methods of selecting potential projects for alternative delivery
- Methods of ranking and scoring statements of qualification
- Methods used to advance teams to the proposal phase
- Methods of ranking and scoring project proposals
- Any other best practices or suggestions that may be of value to WisDOT

Although an outline was followed, the interviews were intentionally kept somewhat unstructured to allow the interviewees to elaborate on specific areas that they thought were important or unique to their program. The following are summaries of the interviews. Opinions stated were those of the person interviewed, and not necessarily those of the agency's management. The chapter concludes with the research team's conclusions from the interviews.

5.1 ARKANSAS DOT

Keli Wylie

Alternative Project Delivery Program Administrator

March 28, 2022

Program History and Internal Team for Alternative Project Delivery

Arkansas DOT (ARDOT) has a four-person internal team. They do not have a formal training program for alternative delivery.

Alternative delivery was started to help deliver an increased highway program resulting from a voter approved ½ cent sales tax for transportation. ARDOT's first design build project was a part of that program. ARDOT had design-build authority since 2003, but it was very restrictive. They went back to the legislature in 2013 and got the law amended to make it more flexible. There is no minimum or maximum number of projects or dollar value.

ARDOT had design-build authority for 12 years before they used it, because they couldn't find a project that fit the requirements of the legislation. Prior to the sales tax funding, the entire highway program was only about \$400 million. ARDOT only gets state revenue from fuel tax.

ARDOT did not have funding to develop a design-build program or to create design-build manuals or documents. Therefore, they did not start any projects.

The current alternative delivery office was formed in 2016-2017. They relied heavily on consultants to develop the program and "teach us as we went". Their first design build project is very large – about \$615 million. That is when the design-build office was expanded to four members. The project is the replacement of the I-30 bridge over the Arkansas River in downtown Little Rock⁵. There are currently three engineers and one field staff in the alternative delivery office. Keli Wylie and one project manager essentially run the design-build program.

Progressive Design-Build

The department is unsure if they will continue to procure traditional design-build projects. Traditional design-build is expensive and incurs substantial risk for ARDOT. However, they do plan to move forward with progressive design build (PDB), which they believe creates a better working relationship with the design-build team. Wylie stated: "The beauty of design build is risk transfer, but you pay for that. I feel like progressive design-build is probably a better model to work through with risk and pricing and all those types of issues that we've seen here."

Having the contractor involved earlier in progressive design-build is seen as a benefit. "Much like CM/GC, on PDB, we are moving toward a guaranteed maximum price (GMP). We are working together through the planning, preconstruction and construction phase. What is going to kick off the construction phase is getting to a GMP." The difference you pay the contractor up front is more than offset by later savings in the project.

Construction Manager/General Contractor (CM/GC)

In 2017, Arkansas received CM/GC authority under a pilot program. They were authorized for three projects totaling not more than \$200 million. The pilot program will sunset in June 2022. The first CM/GC project was \$85 million. An independent cost estimator (ICE) was hired to help steer them through the process. In 2019, they got authority to increase from three projects to five, still with the \$200 million cap. They are planning more CM/GC projects in the \$10-15 million range to give local contractors more opportunity to have experience in alternative delivery. Otherwise, ARDOT is concerned that big national contractors will take all the projects and that may create a political issue. They currently have four CM/GC projects in the pipeline in the next year.

There is an environmental lawsuit on the I-30 bridge (30 Crossing) project. When ARDOT solicited the project, they had the environmental assessment (EA) document complete. They knew going in that they had to have their plan developed before soliciting a design-build team.

⁵ The project website is 30crossing.com.

They recommend having completed the NEPA process before bringing the design build team on board⁶.

Their current progressive design-build project is \$40 million. They have not started the NEPA process. They hired the design-build team to develop the preferred alternative. “We want teams to bring one or more alternatives based on the data. They need to review this and give us the alternative they think is best. We brought that alternative into the NEPA process and compared it to other alternatives that were in the planning process.”

They received four SOQs for their current progressive design-build project. The evaluation team was all internal ARDOT, and actual scoring is kept totally in-house. They don’t want the perception that consultants are scoring contractors. They had a five-member scoring team. Keli and the project manager did not score, they stayed one step removed from the selection process. They had scoring members from construction, from the district, a roadway design engineer, someone from planning who did the traffic modeling and someone from program management. Each person individually scored the proposals and SOQs, and their scores were averaged to become the final score for that proposer.

All four teams were advanced to the proposal phase. They score the proposals and then have a “consensus meeting”, where each person talks about why they scored the project the way they did. Scores can be revised because of that discussion.

During the SOQ phase, they focus on staff and firm experience, not project approach. They also have a focus on disadvantaged business enterprise (DBE). Evaluation of project approach takes place in the proposal phase. They have also done a single-step progressive design-build project, using only a request for proposals.

ARDOT is currently working on an alternative delivery website and manual. They are doing this to ensure knowledge transfer when people leave.

Stipend Policy

On CM/GC, they do not offer stipends, because they are not asking for work product, alternatives, schedule, or other technical information. CM/GC selections are strictly qualification based, with no price component.

On their traditional design-build project, they offered a \$1 million stipend, which works out to about 0.15 percent of the estimated construction cost. They have not developed a stipend guideline but expect to do so in their design-build manual.

Originally, there were no stipends on the progressive design-build project. However, they went back and offered a stipend after there were complaints from local contractors. They offered 50

⁶ The relationship between the NEPA process and design-build on Federal aid projects is spelled out in CFR 636.109. This section lays out several requirements that must be followed if a design-build contract is awarded prior to the conclusion of the NEPA process.

percent of the winning proposer's proposal costs. The successful proposer said their proposal cost was \$100,000, so they offered a \$50,000 stipend. They think this is spelled out in the CFR⁷. The proposers said ARDOT could use their alternative technical concepts (ATCs) even without a stipend. The successful proposer did not ask to see the ATCs of the other proposers.

Performance Metrics

ARDOT has no formal metrics for evaluating performance on alternative delivery projects. They have relied on the ICE for determination of reasonable costs on CM/GC projects. They advise that ICEs are critical to a successful CM/GC or progressive design-build project.

In CM/GC, the goal is to identify risk and use innovation to reduce cost below the ICE. Wylie stated, "If I pay three percent up front for CM/GC, what is my ROI as measured by reduction in final project cost compared to the ICE?"

Each project has a "risk register" and "innovation log", which are tied to schedule. Time savings are measured against the original schedule created by ARDOT. Their question is, "should we accept this innovation or risk if it reduces time?" Responsibility for right-of-way acquisition and utility coordination are now with the CM/GC team, so they have greater control over the project. Schedule savings can be tied to road user cost.

What is Unique to Arkansas' Program?

Wylie stated, "We are the first state to implement an 'on-call CM/GC' program." They have implemented standardized forms to help local contractors prepare a proposal. They want the process to be easier, and ARDOT wants to help educate the local contractors. According to the RFQ for the on-call CM/GC program, the goal of the program is:

"...to identify a shortlist of qualified contractors who may be engaged by the Department on a project-by-project basis through the CM/GC RFP process...in order to:

- *Facilitate introduction of the CM/GC delivery method into the Arkansas market and allow the Department to more effectively engage with potential CM/GC contractors who may be new to CM/GC delivery;*
- *Realize the benefits of CM/GC delivery for each project, such as shorter project delivery times, risk mitigation, and greater cost certainty through early contractor involvement;*
- *Allow and encourage innovative ideas to improve quality, shorten construction time, optimize costs, and/or reduce impacts to the public, the environment and others; and*
- *Foster collaboration, communication, and partnership with all members of the project delivery team and stakeholders during design and construction of each project."*

⁷ 23 CFR 636.112 "The decision to [pay stipends] should be based on your analysis of the estimated proposal development costs and the anticipated degree of competition during the procurement process."

5.2 COLORADO DOT

Matthew Pacheco

Manager of Alternative Project Delivery Program

May 2, 2022

Program History and Internal Team for Project Delivery

Colorado DOT (CDOT) currently use CM/GC and traditional design-build to deliver projects. They are in the process of developing a progressive design-build program. They were the second agency in the US to use design-build on a megaproject. They have been using CM/GC consistently since being given authority in 2007. They currently use traditional design-build primarily on megaprojects, and CM/GC on small value projects.

CDOT has three full time equivalent (FTE) employees in the alternative delivery office, including one person who performs risk-based estimating. They do offer training in CM/GC and design build to CDOT staff, American Council of Engineering Consultants (ACEC) and Association of General Contractors (AGC) partners. Training for contractors is important to make sure that smaller/medium size contractors can compete successfully for alternative delivery projects. Pacheco stated, “A large part of what makes a good alternative delivery program is making sure your industry partners understand the relationships and what the agency is looking for.”

Project Selection

They have found that you can deliver any size project with CM/GC, however, you start to lose value when the contract is less than \$7 million, as you are paying extra for contractor participation. They use an ICE for CM/GC projects. The ICE is typically a consultant.

CDOT uses the FHWA Project Delivery Selection Matrix (PDSM) process⁸. They go through five critical conversations: complexity/innovation, schedule, risk analysis, cost and level of design at procurement. Questions asked include “Which delivery method provides the most opportunity?”, and “How can we leverage the strengths of a particular method for a particular project?” They were the first state to develop a qualitative evaluation process, using icons rather than numerical values.

What level of project development is optimum to enter design build?

Going into design build without an approved NEPA document is risky because the designer can have a predetermined solution that will “poison” the NEPA document. For CM/GC, it is not uncommon to get a contractor onboard prior to NEPA completion. On design-build, CDOT wants to have the basic roadway configuration cleared, either as a categorical exclusion or finding of no significant impact (FONSI). The earlier you get the contractor on board, the more value you will get from collaboration. FHWA will probably not approve a project at 0 percent

⁸ This process is described in detail in Chapter 4.

design. They believe the “sweet spot” for CM/GC is 5-15% design completion. This includes an establishment of goals and typical sections.

“The best point for entering into design-build is 30 percent completion, but everyone will give you a different answer about what that means.” On a low-risk project, you can get away with five percent. However, if there are utility, railroad or environmental issue, you may need to get up to 90 percent design. It all depends on how you want to apportion that risk between the owner and contractor. CDOT defines a 30 percent plan as one where toe of slope, risks and impacts are known.

Project teams will go through a risk workshop before procurement. Probabilistic risk-based cost estimate is used to put a dollar value to risk. “We may go into full-blown Monte Carlo risk analysis.”

SOQ Phase

CDOT will start with a goal setting workshop and then evaluate each SOQ to see which contractor can best meet the goals. If there are five goals, they will have six committees that are not “cross-pollinated”. Each committee will include subject matter experts, but only CDOT people will score. “For our larger projects 200M+, we would typically have four to five committees with around four people (+/-), on some of the smaller ones we would have two to three people, and we maybe will overlap the committee rosters (participants can sit on up to two committees but cannot have influence over a majority of the points).” Technical experts give advice but do not score. They do not allow consultants to participate in scoring. Everyone who scores or determines which adjective applies must be CDOT or a funding partner. But they do take advice from subject matter experts.

The chair of each committee goes into a coordination meeting to gather up all the scores and develop a consensus score which is presented to the executive oversight committee.

They follow industry standard and advance three contractors to the proposal phase. Contractors do not want four or more, because their chance of winning the project is too low to justify the effort of preparing a proposal.

The owner should always be aware of how much it costs to develop a proposal. You want to make sure that you are getting good ATCs not “brochure ATCs”. “We want them to dig into our project specifically, so we keep the number [of proposers] low.”

CDOT does pay stipends. Intellectual property belongs to CDOT if stipends are accepted. Several types of analysis are used to develop a stipend amount. CDOT might do a work order analysis, percentage of guaranteed maximum price, or just look around at other projects. That starts the conversation. Then they look to see if there are special things that will be required, in which case those will be included.

If a project is 60 percent or more pavement elements, concrete and asphalt will both be proposed. ATCs typically would be allowed for pavement type or thickness.

Performance Metrics

No performance metrics have been developed specific to alternative delivery.

What advice would you give to other agencies?

Pacheco stated, “We’ve been shocked to learn that other states do not understand the Spearin Doctrine⁹ about errors and omissions.”

In his opinion, a naïve owner may tend to assume risk that they don’t have to. Owners do not hold their design-build teams responsible for errors and omissions. Owners are assuming risk, especially with contractors who have limited design experience, because the contractor isn’t doing enough QA/QC on the design. The owners think once we get to construction “it’s just a construction contract” even though they’ve already paid for the risk. It took Colorado many years to learn how to hold contractors more accountable and better understand the contractual relationship in design build. They work with ACEC to make sure the design consultants understand what they are getting into.

Schedule acceleration for its own sake is not good. Design-build is a very intense process. Don’t overly value schedule. Give the design build team adequate time to develop a quality project. The owner must build a culture of “quality, ethics and safety.”

When going through the ATC process, use respect. Listen to what the contractor is saying and keep an open mind.

5.3 MARYLAND DOT

Sean Campion

Manager of Alternative Project Delivery Program

March 11, 2022

Internal Organization

Maryland DOT (MDOT) does not have a dedicated alternative delivery office but is planning to create one. They currently have four people working in alternative delivery but would like to increase this to seven. The alternative delivery function is currently within the Office of Highway Development. They work to identify project managers who show a “knack or aptitude” for alternative delivery and bring them into the program. Getting the right project manager is critical to a successful alternative delivery project.

⁹ A legal principle, established in U.S. v. Spearin, that holds that when a contractor follows the plans and specifications furnished by the owner, and the plans are defective or insufficient, the contractor is not liable to the owner for any loss or damage.

Developing performance specifications requires that regulators and others tell you what they want for a result, so the design-build team can come up with innovative solutions to accomplish that. Don't specify means and methods.

Project risk comes from four areas: project development, permitting, planning and materials/construction. So, when you create an alternative delivery organization, it should focus on those four areas.

Project Selection

Some projects have been selected for design build due to commitments made at the political or policy level. Generally, MDOT uses the FHWA project selection matrix. Major areas of consideration in project selection are scope, cost, schedule, risks, and level of design.

The level of design when entering the design build process is a very important consideration. Common thinking is 30 percent design, but they have been pulling back towards 0 percent. This involves determining your high-level goals and selecting the team that can maximize project value. This approach was applied on the I-695 Traffic Systems Management and Operations (TSMO) project, where the agency told the proposers their goals for the project but did not specify any project approach.

Their SOQ and proposal evaluation committees are all internal, except for a FHWA auditor. They have only received one protest from a proposer. They believe that this is because they don't use quantitative scoring. Also, they debrief all proposers. An adjectival system is easier to defend than a numeric score¹⁰.

Sometimes their evaluation meetings stretch as long as five days. Their evaluation is very comprehensive and detailed. A typical evaluation team consists of the leader of the technical evaluation team, the director of the highway office and the procurement director. Sometimes they will include someone from the district. Typically, this will involve a total of six to eight people, all of whom are internal to the agency. Occasionally they will include a consultant who is working for MDOT.

Performance Metrics

Although they have no specific metrics, they primarily try to measure innovation. For example, "J-turns" were introduced to their agency through an ATC from a design-builder. They got buy-in much quicker through an ATC than they would have on a typical design-bid-build project.

Another example is when they did progressive design-build on their first installation of ramp meters. The design-build team was able to provide better information to explain to the public that overall corridor travel times would decrease.

¹⁰ An adjectival rating system is one which uses descriptive words (e.g. "good", "fair", "adequate") rather than numerical scores.

They advocate heavily for the innovation they get from design-build, and they are able to show that the entire project development cycle on design-build is much shorter than under design-bid-build. The quantitative performance measures are delivery time and change orders.

Use of Progressive Design-build by Maryland DOT

Progressive design-build allows you to use the industry to maximize your goals and get closer to the zero percent design level when you select the design-build team. MDOT's authorizing legislation allows progressive design-build, so they didn't have to pursue any changes to legislation to employ this method of delivery.

Because progressive design-build is a hybrid of design-build and CM/GC, you can pursue an idea and bring in a design-build partner to pursue that design, but you aren't committed to them for construction.

The best thing is the ability to get multiple industry teams working on solutions, and to communicate with those teams about which solutions are best. "Progressive design-build is like a design competition." Use of an ICE and good internal estimating capability are important factors to success in progressive design-build.

What is unique to Maryland's program?

Adjectival ratings versus a point system. This sets them up well in case there is a protest.

Maryland is more centralized than some other states (i.e., Virginia) which have decentralized design-build out to the regions. This is a disadvantage to Maryland's program, because they can't do as many projects due to the centralized office has limited capacity. They are trying to move to a more decentralized mode where the central office provides guidance and project selection, but regions deliver the projects.

Their smallest project has been \$4 million. They are targeting nothing less than \$10 million. There are diminishing returns if you are under that threshold. Also, the stipends become very small.

MDOT stipends go from 0.15 percent to 0.5 percent of estimated construction value based on what is provided for bridging documents and what is being requested in the technical proposal. Complex projects where they are looking for a lot of innovation have more substantial stipends.

They originally tried to create a "DB expert" for each area (structures, traffic, roadway, etc.), however, it didn't work out because they didn't have enough projects to keep them busy just with design-build. Therefore, they want to have those experts reside in a central office.

They try to identify projects for design-build while still in the planning process (pre-NEPA), as a way to get more innovation. If the NEPA document is too specific about means and methods

(versus a performance specification), you reduce the opportunity for innovation. Therefore, identify your projects for design-build before the NEPA process, if possible.

It can be difficult to do design-build on a project which has an environmental document above a categorical exclusion. If you are getting into an EA or EIS, the public involvement becomes difficult because people don't always understand the design-build process.

Specific Types of Projects That Work Well With Design-build

They've had better luck getting innovation and value out of corridor projects. They have not had much luck with stormwater management or facility-based projects.

They have not done many 3R projects, but may in the future, especially if the projects can be bundled. This might be a good candidate because while there isn't a lot of innovation, it could be good at improving your performance in that program. In this case, you're looking for quicker delivery rather than innovation.

5.4 MICHIGAN DOT

Ryan Mitchell

Manager – Innovative Contracting Unit

July 18, 2022

Internal Organization

Design-build is the most frequently used alternative delivery method at Michigan DOT. They also use CM/GC and Fixed Price/Variable Scope for certain projects. They have also done public-private partnership (P3) projects, including a large Design-Build-Finance-Maintain (DBFM) project with availability payments, and a Design-Build-Finance-Operate-Maintain (DBFOM) project for highway lighting.

The innovative contracting team is housed within the design unit. It is structured for eight staff, but currently has six, consisting of a manager, four project managers and an analyst. The analyst's job has primarily been to develop programmatic performance measures for alternative delivery. The size of their program is highly variable but has averaged \$219 million over the last five years.

They have a unique program that has been largely focused on low-bid design build. It is the preference of industry because they want the most objective project selection decision. They are exploring greater use of best value design-build in the future. They are also interested in progressive design-build, although they have not done any projects. They would consider a pilot progressive design-build project for "bridge bundling." They believe they would need some federal guidance before doing a progressive design-build project.

They have used CM/GC primarily on complex bridge rehabilitations or replacements where early contractor involvement is valuable. It has also been used for landscape installation on large corridor projects.

Michigan has a unit to train staff for alternative delivery. They also participate in the Design Build Institute of America (DBIA). They provide implementation training for project staff prior to beginning a design-build project.

It is important to have staff “buy into” the design-build process. Project teams that are interested in design-build because of its positive impact will develop the project to maximize the benefits, such as early contractor input. If a team does not want early contractor input, then there is no benefit to the increased development costs of design-build or CM/GC. Alternative delivery requires a much higher engagement from staff than a typical project.

Project Selection

Early identification and selection of alternative delivery projects is very important. Projects should be developed as alternative delivery projects for the start, rather than taking a traditional project and converting it to design-build when schedule constraints develop. It is also important to address the cultural issues. Some staff who are comfortable with the design-bid-build environment can have problems adapting to the design-build approach. This can be true even in a mature design-build program.

They were one of the agencies that piloted the FHWA CASE tool, however, they currently do not use any quantitative tool for project selection. When projects are selected early, the qualitative elements are more important. The available tools such as CASE or PDSM may be more helpful to a program that is just getting started.

The opportunity for the design-build team to propose innovation is a good reason to make the project selection decision early in the design process, but that raises the issue of how you will describe the project in the NEPA document. If you develop a project as if it will be traditional delivery, you have made some decisions in the NEPA document that will make it difficult to innovate.

They do not always have an approved NEPA document at the time the delivery method is selected, but they strive to do that to reduce risk. They have awarded projects prior to completing the NEPA document, but it is rare. Therefore, the delivery model selection decision should be made as early as possible.

In a progressive design-build project, ATCs are built into the process, and contractor input could influence the NEPA document. In a competitive environment, the issue is more about the level of effort required to complete the NEPA and permitting documents. If you award prior to concluding the NEPA document, you need to be careful that you have not prejudiced any of the alternatives.

In general, 30 percent design is a good point at which to enter the design-build process. This percentage could be lower for a non-complex project.

SOQ and Proposal Evaluation

With a fledging program, there is a long “industry adoption phase”, during which industry is still trying to understand the process. That’s why project understanding should be a significant part of the SOQ process (typically 25 percent of total points), to make sure the design-build team understands the project risks, etc.

With low-bid design-build, the proposal does not receive a technical score, but must meet technical minimums. This raises a concern that low-bid design-build can become a “race to the bottom.” For non-complex projects, they sometimes use a one-step process where any pre-qualified team can submit a proposal. Sometimes they might receive up to five proposals on a single-step procurement.

On a best-value procurement, they use technical working groups to evaluate the proposals. The selection team provides detailed comments to justify scores based on the evaluation criteria and the information provided in the proposal. The selection team may meet to arrive at a consensus score for each technical proposal. The selection team may include Michigan DOT staff and partner agencies (local government, other state agency, etc.), but not other external stakeholders (AGC, ACEC, etc.).

On a best-value project, some states have weighted the technical proposal as high as 70 percent, although 30 percent technical/70 percent cost seems more typical. This can also become a political or public perception issue when the selected proposal has the highest technical score but not the lowest cost.

Stipends are offered for two step projects, although there is no statutory obligation to do so. Stipends range from 0.1 percent to 0.5 percent of estimated construction value which is appropriate for low-bid design-build. Higher stipends would be warranted for a best-value procurement, where more emphasis is placed on proposed innovations. The only motivation for alternative technical concepts on a low-bid project is to reduce cost. Industry has argued that their stipends are too low. They have had proposals where the low bidder did not submit any alternative technical concepts.

Performance Metrics

Accountability and performance metrics are very important. They have metrics on budget, schedule, participation, and innovation. Many of their metrics are based on work that has been done in Texas by TXDOT.

5.5 KEY INTERVIEW CONCLUSIONS

Several practices with possible value to WisDOT were identified in the peer state interviews.

Scope of Program

All the states have expanded their alternative contract delivery program beyond traditional design-build to include CM/GC or progressive design-build. Each of the delivery methods has strengths that may make them a superior choice for a particular type of project. Therefore, having as many different strategies as possible in the agency's toolbox is beneficial. CM/GC can be particularly valuable on complex bridge rehabilitation or replacement projects.

Internal Organization

Sufficient staffing to manage the alternative delivery program is important. Staff dedicated to alternative delivery in the interviewed states ranged from three to eight (including vacancies). Positions typically include a manager to oversee the alternative delivery program, project managers and staff dedicated to analysis or risk assessment.

Training and Stakeholder Outreach

All the states emphasized the importance of formalized staff training and stakeholder outreach as elements of a successful alternative delivery program. This should include a formalized training program for agency staff, as well as regular outreach and training for engineering consultants and construction firms. Having agency staff who understand and are willing to fully utilize the design-build process is critical to project success.

Project Selection

Some variation of opinion was found about the best point in the project cycle to make the design-build procurement decision. States using progressive design-build advocated for very early (pre-NEPA) selection, to give the design-build team the maximum opportunity to propose alternative approaches or technical innovations. However, this requires very careful navigation of the NEPA process, and greater flexibility with cost since the selected alternative is not known when the procurement decision is made. While 30 percent design seems to be typical for traditional design-build, it is possible to pull back to a lower number.

Consideration may also be given to selecting a minimum project size that can generate the innovation and savings to justify the expense of the design-build process. This number may be in the range of \$7 million to \$10 million. Using this screening criteria can simplify the selection process by reducing the number of projects that must be considered. The FHWA Project Selection Decision Matrix is a primary tool used by two of the states interviewed.

SOQ and Proposal Evaluation

Although the two-step procurement process is most common, consideration can be given to a one-step process where proposals are received from any team which has been previously pre-qualified by the agency. This is most applicable on less complex projects.

Interviewees generally favored qualitative or adjectival rating systems over numeric scores when evaluating qualifications.

There was some difference of opinion in the weight that should be given to “project understanding” in the qualifications phase. In the case of a state where industry experience is lacking, “project understanding” may be interpreted to include understanding of the design-build process being employed, in addition to understanding of the scope of the specific project. In Wisconsin’s case, this may suggest a benefit to higher weighting of project understanding in the qualification phase.

In all the agencies interviewed, the makeup of evaluation committees differed very significantly from the WisDOT model. Evaluators were restricted to agency staff, with the occasional addition of a funding partner (e.g., FHWA) or public entity stakeholder (e.g., local government). None of the states have evaluators associated with industry trade groups, and most of the interviewees considered that practice to be problematic. Some states use multiple technical committees to evaluate different elements of the proposal, which are then combined to make a consensus score.

Stipends

In general, stipend policies were significantly more targeted than WisDOT’s minimum 0.3 percent policy. Stipends should be related to proposal development costs. This suggests that higher stipends are warranted for best-value procurements, where more effort is required from the Design-Build team to develop technical alternatives or innovations.

Performance Metrics

Most of the states do not have a defined performance dashboard for alternative delivery projects. Michigan appears to be the most committed, and farthest along, in the development of performance metrics specific to the alternative delivery program.

CHAPTER 6: SUMMARY OF WISDOT DESIGN-BUILD MANUAL

6.1 INTRODUCTION

The 2021 edition of the WisDOT Design-Build Program Manual describes the processes and procedures for procuring design-build contracts. The research team has reviewed and summarized this manual to determine if the manual conforms to all statutory and regulatory requirements, and to confirm, to the extent possible, that the procedures outlined in the manual were followed on the first three pilot projects. The manual is divided into six chapters that describe the procedures to be followed, beginning with project development and ending with contract execution.

The manual begins with a brief explanation of what design-build contracting is and the purposes behind utilizing it, namely time and cost saving and an increase in efficiency of project delivery. Additionally, sufficient preliminary engineering, a clearly defined project scope, right-of-way acquisition, if necessary, and the required municipal consent need to be considered prior to and during the early phases of the project. The standard of practice is to require completion of any required environmental document prior to moving into the RFP stage of procurement, however, there are some exceptions.

The manual then moves on to the chief differences between design-build and design-bid-build, most of which have been mentioned previously in the literature review. Of note is that after moving onto the short-listed phase, design-builders can submit price and technical proposals during the RFP process. The technical proposals are scored only in a best-value or fixed price procurement. In low-bid procurements, technical proposals are used only to determine responsiveness. The manual then lists certain project types considered for design-build such as: accelerated projects, large/complex grading and reconstruction projects, major bridge projects, unique projects where value exists in best-value project selection, projects in which major risk may be an issue, and project streamlining. The manual also mentions criteria that a design-build project needs to meet, namely: freeway, expressway or state trunk highway projects are preferred; projects that are in the Major Highway Development, State Highway Rehabilitation, or Major Bridge programs; and project fix type should be modernization or major rehabilitation with the following codes: RECST or RECSTE, BRRPL or BRRPLE, BRNEW, or PVRPLA or PRVP_O with an estimated total budget, including delivery, greater than \$2,000,000. A project should not include the following criteria unless steps have been taken to mitigate risks: projects beyond the scoping stage with a life cycle of 12 months or higher; projects having impacts to railroads including adjustments to track carrying structures, major track work, and highway bridges over tracks; projects requiring an Environmental Impact Statement (EIS); projects with significant real estate acquisitions, relocations, or Section 4(f) or 6(f) parcels; or significant utility relocations including compensable relocations.

The manual then details the steps taken for a project to be considered for design-build by the department. First, the Alternative Contracting Section (ACS) determines certain projects suitable

for alternative project delivery methods. If the project meets the criteria listed above, the region should evaluate it for potential alternative delivery. Suitable projects should be analyzed using the FHWA Risk Assessment Tool and results, together with other project information, should be sent to the ACS. If ACS accepts the project, the project package is forwarded by the ACS Manager to the DTSD Administrator for concurrence, and then to the secretary for final approval. The manual also mentions that each region should identify at least one project as a design-build candidate per fiscal year.

The manual then discusses the different types of procurement that the department is allowed, by statute, to utilize. For the pilot program, not more than six projects are allowed and these projects must meet the following requirements: the sum of the projects should be no more than \$250 million, one must be low-bid and not more than \$25 million, one must be best-value and not more than \$75 million, one must be fixed price and not more than \$75 million, and the final three contracts should have an estimated total of not more than \$125 million. The manual then proceeds to discuss low-bid, best-value, and fixed-price, each of which has been discussed in the literature review. The manual also provides the following table for reference on where to use each procurement method.

Table 6-1: Guidance and Recommendations on Usage of Design-Build Procurement Methods

Project Type	Best-Value	Fixed Price, Variable Scope	Low-Bid
Major Bridge Projects	Required		
Major Grading / Reconstruction Projects (over \$25,000,000)	Recommended		
Major risk transfer projects	Recommended		
Project with complex staging	Recommended		
Projects with constructable units		Recommended	
Minimal risk transfer projects (unbonded overlays, mill/overlay, simple bridges)			Recommended
Non-complex projects with a value less than \$10,000,000			Recommended

The manual then shows typical expected time frames for each step of the procurement process and acknowledges that different projects will have varying requirements and different procurement methods, which may affect the time spent on each step. This table can be seen below.

Table 6-2: Typical Procurement Timelines

Procurement Item	Approximate Time
Authorize GEC	2 to 4 weeks
Preliminary Engineering	2 to 12 months
Develop RFQ	2 to 4 weeks
Advertise Request for Letters of Interest	2 to 3 Weeks
Advertise RFQ	4 to 6 Weeks
Score SOQ / Develop Short-List	2 Weeks
Develop RFP	2 to 3 Months
DBPM (RFP, Estimate, etc.) Review	2 Weeks
Federal Authorization (if applicable)	7 Days
RFP Advertisement Period	2 to 4 Months
Score Technical Proposals (best-value only)	2 to 3 Weeks
Contract Award and Execution	4 to 7 Weeks

6.2 GENERAL PROCUREMENT ACTIVITIES

This section describes the general activities involved in a design-build procurement. These include the duties of various staff, the role of FHWA, potential conflicts of interest, data storage and the role of the General Engineering Consultant (GEC). The GEC is a consultant hired by WisDOT to assist in the procurement of design-build projects.

The duties and responsibilities of the Design-Build Project Manager (DBPM) include managing preliminary design and environmental approvals, developing the project scope, developing the project schedule, developing the project cost estimates in coordination with the GEC, managing third party agreements, managing work orders through the GEC or other consultant support, and drafting (or managing the drafting) of Book 2 and Book 3 of the RFP. Additionally, the DBPM should remain involved throughout all project phases with additional responsibilities falling on other staff as the project advances.

FHWA involvement is defined in the CFR and Stewardship and Oversight Agreement between both agencies. The manual supplements both documents with the following: all department design-build projects will follow this manual, all future modifications to this manual will be approved by FHWA, FHWA concurrence is required on individual design-build projects if non-standard methods are used or standard criteria are not met, the department's PM or DBPM are encouraged to contact the FHWA if they have questions about specific project details or procedures that they believe are relevant to the spirit of the Stewardship and Oversight Agreement, but no other formal communication is required, and design-build projects are

typically selected as Projects of Division Interest (PoDI) (the Department’s PM should contact the FHWA Area Engineer to determine the PoDI status of a project). The manual contains a table that shows FHWA involvement in each project development activity.

Table 6-3: Federal Oversight Roles on Design-Build Projects

Development Activity	FHWA Involvement
Project Selection	None
General Oversight	Yes
Procurement Method (Low Bid, Fixed Price Variable Scope, or Best Value)	None
Risk Assessment Meetings	Invited
Scope Verification Meetings	Invited
DB Training Meetings	Invited
RFQ	Approval required on final RFQ
Short-Listing Process	None
RFP Development	Invited to all meetings, and is actively involved during the RFP development
Final Package Review Meeting	Invited
Advertising RFP	Approval required via signature on the Certification & Acceptance Form
Addenda	Approval required prior to addenda submission to Specifications & Estimates
Alternate Technical Concepts (ATC)	Concurrence required Invited to all ATC meetings
Project Award	Approval required
Schedule of Values	Concurrence required
Bridge Type, Size & Location Study	Approval required
Road Base Plans	Provided base plans for review and approval
Project Meetings	Invited
Released for Construction Documents (RFC)	Provided all RFC documents for review and comment. Concurrence with disposition of comments prior to acceptance
Contract Modifications	Approval required
Final Acceptance	Traditional procedures followed. FHWA completes their Final Engineering and Acceptance for FHWA Oversight Projects form and submits it to WisDOT Finance.

The manual then moves on to discuss conflicts of interest and what procedures apply when they occur. Conflicts of interest are divided into two types, organizational and internal, each with their own procedures. Organizational conflicts of interest occur when a vendor has an unfair

advantage or will render biased assistance or advice to the department. When it is known that this conflict of interest has occurred, it should be forwarded to the DBPM, and they should meet with the PM and Consultant Services Section Chief to determine if an actual conflict of interest occurred and meet with the individual who disclosed the potential conflict of interest. At the time of writing, the approach to resolve this type of conflict of interest has not been determined. One type of resolution is via contract clauses which could inhibit the consultant from rendering the biased advice/assistance. In the case of an internal conflict of interest, the PM needs to collect and store all relevant confidentiality, non-disclosure and no conflict forms from any individual involved with the development of Request for Qualifications (RFQ) and Request for Proposals (RFP) documents. The PM should then notify the DBPM and Consultant Services Section Chief of all conflict-of-interest issues. The Consultant Services Section Chief will make a determination on the conflict of interest and provide recommendations to the DBPM and PM.

Proper maintenance and protection of non-public or proprietary data is particularly important. The manual specifies that proprietary information exchanges and details about alternative technical concepts or PAEs should not be shared publicly or with other proposers.

The GEC master contract contains the following work orders that are region specific: tasks for pre-award project development of design-build projects, developing RFPs, support of the Department's DB program management (updating contract documents, manuals, standards, etc.), assisting the Department with the development of other alternative contracting methods, and thoroughly reviewing all design-builder submittals and making recommendations to the PM on each submittal. Because of their role to assist the department, the GEC is prohibited from becoming a member of any design-build team.

6.3 PRE-ADVERTISEMENT ACTIVITIES

These include the project development activities needed to develop a project to the proposal stage. Developing the project to the appropriate stage prior to soliciting proposals is critical to obtaining the desired innovation and managing risk. The tables below describe WisDOT's standard practices for some major preliminary engineering and project management tasks on design-build projects.

Table 6-4: Preliminary Engineering Standards on Design-Build Projects

Activity	Level of development and responsibility
Geometric Layout	Approved prior to releasing RFP.
Environmental Document	Release RFP after environmental process has concluded.
Permits	Department should obtain as many permits as possible. Conditional permits may be necessary.
	Department should delineate wetlands. Design-builder may be responsible for obtaining final permit.
Hazardous Materials	Department is responsible.
Right-of-way	Department is responsible. May be delegated in certain circumstances, but not desirable.
Geotechnical Investigation	Department should investigate to minimize risk to the design-builder, but proposers are allowed to do their own investigation.
Permanent Pavement Design	Department is responsible and should include design in RFP.

Table 6-5: Project Management Standards on Design-Build Projects

Quality Management	As designer of record, design-builder is responsible for quality of design and construction.
Human Resources	Firms or individuals may not be replaced without written approval.
Cost management	Typically lump sum. Payments based on percent completion.
Public Information	Responsibility is shifted to the design-builder.

The confidential engineer’s estimate of cost is used to validate the bid received during the pre-award period. The manual contains the procedures to be followed when building the engineer’s estimate. The estimate may be adjusted after advertisement in the event of addenda, or changes in risks or conditions. If the price proposal deviates from the estimate by more than ten percent, or if the proposer’s bid appears unbalanced or front-loaded, an investigation is conducted.

Federal provisions related to disadvantaged business enterprise (DBE), equal opportunity program (EEO), On-the-job training (OJT) and tribal affairs apply to federally funded design-build projects the same as with traditionally let projects. Therefore, these special provisions must also be included in the design-build proposal, as appropriate.

Early coordination between design-build proposers and the department is an important risk mitigation tool. The manual describes how early coordination activities can be conducted fairly and consistently to all firms.

6.4 ADVERTISEMENT ACTIVITIES

Advertisement activities are conducted to inform potential bidders of a project. Most advertising activity takes place via general or project-specific websites and file transfer protocol (FTP) sites.

Prior to issuing an RFQ or RFP, the department may issue a Request for Letters of Interest (RLOI). Although not required, this process may be of value in determining the level of interest in certain unique or specialty projects.

Proposal evaluation criteria are unique to each project, based on its goals and risks. Point rankings will differ depending on procurement type (best-value, fixed-price, low-bid), and are most important on a best-value procurement. Individual criteria within a technical proposal may be weighted anywhere from 10 to 50 percent of the total technical proposal score.

Because the FHWA must authorize any design-build project involving federal funds before the RFP is issued, the manual contains procedures for FHWA review and approval of all elements of the proposed project. The process for RFP clarifications and addenda is similar to that used for SOQs.

The RFQ is used to short-list the most qualified design-builders in all procurement methods. It outlines the minimum and desired qualifications of potential design-builders for the project and these qualifications are tailored to each project based on the goals and risks represented by the project.

The first step in developing the RFQ is to determine the goals and scoring criteria for the project. The selection criteria and their corresponding point values should correspond to the goals, needs, and unique aspects of the project, with the scoring criteria based on a combination of the design-builder's organization, key personnel, project understanding and project approach. The DBPM drafts the RFQ based on a template and the meeting with key individuals. The DBPM maintains document control over the RFQ and ensures it follows Wisconsin state statutes and federal regulations.

There is a clarification process for an RFQ which allows the department to respond to design-builder questions during the RFQ advertisement period. The clarification responses are meant to clarify the RFQ but should not change it. Finally, RFQ addenda can be generated by clarification questions but can also be generated by the department to modify contents of the RFQ. If a notable addendum needs to be issued less than two weeks before the SOQ due date, the PM and DBPM should consider delaying the SOQ due date. All requested addenda to the RFQ must be submitted to the DBPM. The DBPM will number each of the addenda sequentially and post the addenda in pdf format on the website or FTP site. Finally, the DBPM will notify submitters and the PM that an addendum has been posted if the submitters requested the notification.

SOQs are evaluated by the Technical Review Committee (TRC), and the most suitable candidates are placed on a short list. Then, an RFP is issued to the short-listed design-builders. The PM can be asked to provide input to the scoring process conducted by the TRC, and technical advisors can be asked to provide input on the strengths and weaknesses of each design-

builder. The DBPM will hold kick-off and evaluation meetings in between which the TRC should have reviewed the SOQ for each design-builder. During the evaluation meetings, the TRC will score each proposal. SOQs may be scored individually or by consensus, as determined by the DBPM. The TRC recommends a shortlist, subject to approval by the secretary or his/her designee. Design-builders must be offered the opportunity for a debrief. All information pertaining to SOQs and their evaluation will be retained and stored by the DBPM.

A request for proposals (RFP) is required for all design-build projects. The minimum statutory requirements for the RFP are included in the manual and described in detail elsewhere in this report. Critical elements of the RFP include the technical proposal scoring criteria, stipend amounts, and procedure for ATCs and Pre-Approved Elements (PAEs). The DBPM is primarily responsible for managing the development of these sections of the RFP, with the possible assistance of the GEC.

In the case of best-value procurement, technical proposals may have a major impact on the awarding of a design-build contract. The evaluation criteria vary between different projects and as such meetings need to be held to determine them and their rankings will be placed in the Instructions to Proposers (ITP). In the case of fixed-price variable-scope and low-bid, technical proposal evaluation should be based on objective criteria that will be developed by the DBPM and based on pass/fail requirements. Any project with federal funding should be authorized by the FHWA before any RFP can be issued. RFP distributions, clarifications, and addenda will be handled similarly to RFQs.

One-on-one meetings between the Department and design-builders are used to improve communication during the procurement process. They provide design-builders with the opportunity to discuss potential ATCs and PAEs with the department before making a formal submittal. These meetings will be scheduled by the PM and attended by the design-builder, the PM, the DBPM, and key department team members. The contents of the meetings are confidential and should not be shared with other design-builders. After mentioning an ATC or PAE, the PM will inform the design-builder whether it has potential to be approved. If it has the potential to be approved, the PM should inform the design-builder about what information will be necessary for the department to evaluate it. If a design-builder asks questions unrelated to ATCs or PAEs, the PM should decline to answer. ATCs that contain more than one unique concept should be rejected to maintain a numerical cap on the number of ATCs.

The confidential ATC process allows design-builders to propose “equal or better” alternatives to the RFP requirements during the procurement process. An ATC may be:

- Approved
- Not approved
- Approved with conditions
- Not approved in present form, but may be approved upon satisfaction, in the department’s sole judgment, of certain identified conditions

- Found to not contain any deviations and therefore not qualify as an ATC but may be included in the proposal without an ATC
- Found not to qualify as an ATC and may not be included in the proposal
- Found not to qualify as an ATC because it identifies an RFP error.

The manual identifies the process that must be followed when reviewing ATCs. The PM, with oversight from the DBPM, identifies the personnel qualified to review each ATC submittal soon after it arrives. These personnel must represent each of the technical areas significantly affected by the ATC concept. ATCs which require NEPA re-evaluations cannot be approved. The PM distributes the materials to the reviewers and advises them on the concept's review due date. After the reviewers complete their review, they must prepare a draft response to the ATC using the ATC response form. The PM will review and comment on this response until satisfied, then send it to the DBPM for approval. Following DBPM approval, it is recommended that the PM send all ATC responses to region management for review if possible. The PM will send the finalized response to the design-builder via e-mail. If a design-builder wants to resubmit or modify an ATC after a decision has been sent, they must submit a new ATC with a revised number.

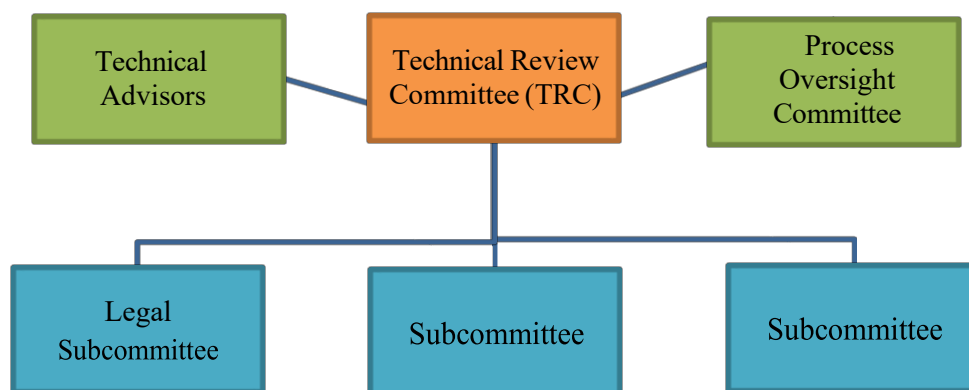
The PAE process may be used in any procurement type and requires the design-builder to submit elements of the design during the procurement process. The PAE process is not a required process and is only used to mitigate the risk associated with a design-builder having to bid the risk of a significant Department design approval or acceptance. PAEs should only be used on unique and complex high-risk items that are difficult to specify within the RFP documents. A PAE is either approved, not approved, or approved with conditions. Similarly, the PAE process is highly confidential. Design-builders must submit PAEs in accordance with the ITP. PAE review will be kept to a small team for confidentiality reasons. The PM may request supplemental information from the design-builder and request the design-builder to resolve any ambiguities regarding the PAE at any time. The PM will draft a response and send it to the DBPM for approval. This will then be finalized and emailed to the design-builder. If a design-builder wants to resubmit or modify a PAE after a decision has been sent, they must submit a new PAE with a revised number. Changes in personnel or firms listed in the SOQ may occur due to employees departing a firm, additional RFP requirements, or other organizational changes. If the change occurs prior to technical proposal submittal, the design-builder must submit a written request to the PM to change key personnel or firms listed in their SOQ prior to submitting a technical and price proposal. The PM will review the request and consult with the DBPM to determine if the replacement is equal or better. If acceptable, the DBPM will consult with the secretary. If the secretary agrees, the DBPM will provide a copy to the PM who will provide a copy to the design-builder and retain a copy in the project file. If the change occurs after the contract award, the design-builder must submit a written request to the PM to change key personnel or firms listed in their SOQ prior to replacing the team member. The remainder of the steps are the same as the previous case with the exception of a determination if a monetary deduction is necessary in accordance with contract documents.

In the case where all proposals are rejected, the department may abandon design-build procurement, re-advertise the RFP, or re-issue the RFP. This decision depends on project schedule, modification of the scope, and quality of the short-listed design-builders. The PM should consult with the Region, Bureau of Project Development Manager, and Proposal Management Section Chief regarding which option is best suited for the project. If the decision is made to abandon design-build procurement, the PM will notify the design-builders and any stipends will be processed by the DBPM. If the department intends to re-advertise, it should follow the advertisement steps previously mentioned. If the department intends to re-issue the RFP, the PM and DBPM will establish a reasonable stipend and modify the RFP. The PM will re-issue the RFP and consult the Office of Business Opportunity and Equity Compliance (OBOEC) on whether additional meet and greets should be held or if a goal change is necessary. If the procurement is to be cancelled at any point in the process, SOQs and technical proposals received prior to the cancellation become department property. The DBPM will develop a procurement cancellation letter and send it to all design-builders, which must be signed by the Bureau of Project Development Manager.

6.5 EVALUATION AND LETTING ACTIVITIES

Prior to receiving proposals, the PM and DBPM will develop an evaluation schedule and develop a Technical Proposal Evaluation Manual using the Technical Proposal Evaluation Manual templates. The DBPM receives the technical proposals and other required forms and stores them in a locked area. Although the TRC is the only group that scores technical proposals, other staff members might be present to review and evaluate the process. The following figure shows a typical organizational chart.

Figure 6-1: Evaluation Committee



In a best-value procurement, the PM and DBPM determine whether each design-builder properly incorporated any approved ATCs into their technical proposal and whether consensus scoring, or traditional individual scoring will be utilized for the technical proposal evaluation. The DBPM will arrange the time/location for the Proposal Evaluation Kick-off Meeting with help from the PM and for the TRC evaluations. The TRC members thoroughly review all technical proposals between the kick-off meeting and the evaluation meeting with the attendance of the PM and DBPM. The DBPM oversees the evaluation process in accordance with the Technical Proposal Evaluation Manual and prepares a log documenting any notes of the Process Oversight Committee. The TRC will determine Technical Proposal Evaluation Comments at the meetings and collectively calculate the scores. If utilizing individual scoring, the scorers will complete their comments without discussion. If any design-builder is deemed unresponsive, the DBPM will inform the secretary and the PM will notify the design-builder prior to the letting date. Evaluation material will be collected by the DBPM and/or the PM. The DBPM will prepare the letter to the Bureau of Project Development Manager prior to letting. The DBPM will meet with the Bureau of Project Development Manager to discuss and obtain concurrence on the technical proposal scores in accordance with the Technical Proposal Evaluation Manual. Finally, the DBPM, PM, and TRC must keep the technical scores confidential until letting. In a fixed-price or low-bid procurement, the PM and DBPM determine whether each design-builder properly incorporated any approved ATCs into their technical proposal. The DBPM arranges the time/location for evaluating the Technical Proposals and distributes Technical Proposal Evaluation packages to attendees. The DBPM reviews the Technical Proposal Evaluation Manual prior to distributing the Technical Proposals. The DBPM oversees the evaluation process in accordance with the Technical Proposal Evaluation Manual. The DBPM collects all evaluation materials, documents the results, and notifies the Bureau of State Highway Programs.

The letting may be done in an in-person announcement. In this case, the technical scores will be posted and read before the price proposals are opened. The price proposal is then converted to a score and combined with technical score to arrive at the apparent best value. Finally, the results are posted on the project website.

6.6 POST LETTING ACTIVITIES

The manual ends with a discussion of post-letting activities. The first step of post-letting is contract award and execution. This process begins with the pre-contract award in which the DBPM will provide any forms which break down lump sum items into smaller funding groups (i.e., Schedule I's) to the Proposal Management Section Chief (PMSC). The PMSC will then provide the bid abstract and Engineer's Estimate to the DBPM and, if applicable, the Structures Design Section and audit the price proposals. The PM and DBPM will review the Price Proposal versus the Engineer's Estimate following the procedure outlined previously. The PMSC will obtain clearances regarding right-of-way, permits, utility agreements, and municipal agreements from the appropriate sections of the Department's Bureau of Technical Services and the signed audit sheet authorizing award from the Department Administrator. The DBPM provides the PMSC a list of items that must be included in the award package. The award and pre-contract approval follows next. The PMSC will make the award and send the contract package to the

design-builder with copies to the DBPM. The DBPM will then post technical evaluation scores as applicable on the project website immediately after contract award and notify the design-builders of the posting. The Alternative Contracting Section (ACS) will contact the design-builder for review of Escrow Proposal Documents (EPD). The PM will notify the PMCS when they have received an acceptable preliminary Critical Path Method (CPM) schedule from the design-builder. The process ends with contract approval, notice to proceed, and stipend payment. In this, the PMCS receives the executed contract package from the design-builder, reviews the contract documents, obtains the Department of Administration signature, and forwards them to the State Highway Programs Bureau. The PM then issues Notice to Proceed 1 to the design-builder. The DBPM prepares stipend agreements with Consultant Services Unit and State Highway Programs Bureau and arranges debriefing meetings with all design-builder proposers.

6.7 STIPENDS

Stipends are paid to responsive, but unsuccessful, design-builders submitting technical proposals on all best-value, fixed price variable scope, and low-bid design-build projects. Stipends are used to offset the proposal preparation costs of the design-builders. The stipend is intended to cover between one-quarter and one-third of the proposal development costs. The following table lists the recommended stipend amounts for the various procurement types.

Table 6-6: Design-Build Stipend Recommendations

Estimated Design-Build Contract Value	Best-Value	Fixed Price, Variable Scope	Low-Bid (Two-Step)
< \$5 M	0.4% minimum	0.4% minimum	0.3% minimum
	0.5% recommended	0.5% recommended	
\$5 M - \$20 M	0.3% minimum	0.3% minimum	0.3% minimum
	0.4% recommended		
\$20 M - \$50 M	0.3% minimum	0.3% minimum	0.3% minimum
> \$50 M - \$100 M	0.3% minimum	0.3% minimum	0.3% minimum
> \$100 M	0.3% minimum	0.3% minimum	0.3% minimum

The stipend is established by the PM in consultation with the DBPM and region management. The stipend should be based upon the upper limit of the estimate in the ITP. The PM will identify the source of funding for the stipends and include the source in the federal authorization form. If known, include the stipend amount in the RFQ. If not known, the RFQ should include the stipend as a minimum percentage of the anticipated design and construction costs. The ITP should include a dollar figure for the stipend, not a percentage. A copy of a sample stipend agreement must be made available on the DB website and made known to proposing design-

builders in the RFQ. If a design-builder elects not to accept a stipend, the Department cannot use the ideas contained within their technical proposal.

Debriefing meetings are informal one-on-one meetings that provide feedback to design-builders on the merits of their Statement of Qualifications and/or Technical Proposals. They should also be used to obtain feedback on the procurement process. The meetings should occur shortly after the short-list announcement or contract award, but not before the end of the protest period listed in the RFQ or ITP. They are organized and facilitated by the DBPM, and attended by the DBPM and PM. These meetings typically contain informal discussions between the department and design-builders, a summary of the TRC comments, provision of a scoring breakdown by category, provision of a scoring breakdown by category for other design-builders if requested, and no discussion of the contents of another design-builder's SOQ or technical proposal. Finally, if allowed and requested by the design-builder, the DBPM may provide the scoring methodology and evaluations. The DBPM may also provide a survey to design-builders which asks them to rate the quality of procurement and associated documents.

CHAPTER 7: REVIEW OF PILOT PROJECTS 1-3

7.1 PROJECT SELECTION

After the alternative project delivery statute (Sec. 84.062, Wis Stats.) was enacted, WisDOT established the design-build project management plan, manual and guidelines, and selected the first three projects to undertake in the pilot program.

To perform this task the department looked to its existing program of projects. They generated a Financial Integrated Improvement Programming System (FIIPS) master download of projects with lets scheduled between July 2021 and June 2023, then considered projects from only two subprograms, Major Highway Development and State Highway Rehabilitation. Projects from maintenance and traffic operations, southeast freeway megaprojects and the local program were not considered. Only projects in the scoping phase were then considered for inclusion, in the belief that these provided the greatest opportunity for innovation.

The candidate project list was then divided into program scopes that would present the greatest potential for efficiency:

- Expansion
- Reconstruction
- Bridge Replacement
- Major Rehabilitation

For rehabilitation projects, all projects with a programmed cost under \$5 million were eliminated from consideration, to ensure that the shortlisted projects were significant enough to attract serious consideration from industry under the pilot program and increase competition.

For the first two design-build projects, projects with known extensive coordination processes were eliminated to reduce risk of delays. This included projects with railroad crossings, both at-grade and separated, due to lengthy coordination with railroad companies during design and construction. Environmental documents were limited to Categorical Exclusion (CEC) documents.

WisDOT then further screened projects for consideration by conducting an analysis of project risks. Potential candidates were assessed on their 30 percent design schedule, construction schedule, whether there were identified stakeholder issues that would affect construction, their potential for flexibility and innovation in construction staging, complexity allowing multiple design options, whether there were known permits from other agencies required that could cause delays or limit construction options, and their potential for innovative solutions.

The resulting list of 18 projects were then subjected to analysis using the FHWA CASE tool, with inputs and output scores as shown in Table 7-1.

Table 7-1: WisDOT Design-Build Pilot Project Screening

Major Facility	Est Cost	Work Description	CASE Inputs					CASE Score			
			Cost	Sched	Tech	Context	Finance	DBB	CMGC	DB	PDB
WIS 100 - 60th St. to Loomis Rd.	\$16,500,000	Bridge	75	25	5	0	0	1015	965	1235	970
WIS 69 at Wittenwyler Rd & CTH C Intersection	\$4,190,000	Intersection Reconst	90	5	5	0	0	1060	755	1115	760
WIS 11 at WIS 23 Intersection	\$3,360,000	Intersection Reconst	90	5	5	0	0	1060	755	1115	760
US 51 - Manitowish River Bridge B-63-0003	\$1,833,750	Bridge Replacement	92	5	2	1	0	1092	797	1159	799
WIS 28 - Branch Milwaukee River Bridge	\$264,500	Culvert Replacement	95	3	1	1	0	1104	764	1141	765
WIS 42 - CTH X - Center Rd	\$506,000	Culvert Replacement	93	5	1	1	0	1095	789	1154	790
WIS 32 - CTH D - STH 28	\$862,500	Culvert Replacement	75	20	5	0	0	1015	965	1235	970
WIS 125 - IH41 - Bluemound Dr	\$2,185,000	Twin Box Culvert	90	7	2	1	0	1092	865	1190	846
WIS 28 - Onion River Tributary	\$425,500	Bridge Replacement	95	3	2	0	0	1085	741	1119	743
WIS 120 - Bridge over Nippersink Creek B-64-007	\$575,000	Bridge Replacement	93	4	3	0	0	1073	755	1125	758
WIS 35 - Black RVR Bridges B-32-XXX & B-32-XXX	\$9,169,300	Bridge Replacement	93	5	2	0	0	1075	767	1133	769
US 45 - Givens Rd to Church Rd	\$5,052,500	Highway Reconst	70	15	15	0	0	980	820	1070	835
US 45 - CTH C to Gollnow Rd	\$5,106,250	Highway Reconst	75	20	5	0	0	1015	905	1175	910
WIS 13 - 2nd St N to CTH P	\$5,683,300	Highway Reconst	75	20	5	0	0	1015	965	1235	970
WIS 26 - Parker Dr to Randolph St	\$9,526,700	Mill and resurface	95	5	0	0	0	1085	765	1135	765
100 LOC - Fox River Bridge and approaches	\$43,857,000	Bridge Replacement	75	20	5	0	0	1015	965	1235	970
100 STH - Gillette St to STH 157	\$27,500,000	Bridge Replacement	75	20	5	0	0	1015	965	1235	970
WIS 130 - STH 23 - Lone Rock	\$35,000,000	Bridge Replacement	70	15	15	0	0	980	820	1070	835

As shown in Table 7-1, all 18 projects considered had CASE scores that indicated they were good candidates for the design-build delivery method, and WisDOT selected the three projects highlighted based on schedule, programmed cost, environmental constraints, and their potential for innovation as determined in their risk analysis.

Table 7-2: WisDOT Selected Design-Build Pilot Projects

Highway	Limits	County	Description	Delivery Method
US 45	CTH C-Gollnow Rd.	Waupaca/ Shawano	Construction/replacement of eight miles of pavement	Low-bid design build
WIS 125	I-41 – Bluemound Dr.	Outagamie	Removal of multi-cell box culvert and replacement with slab span structure	Best-value design build
WIS 130	WIS 23-Lone Rock	Richland	Bridge replacement	Best-value design build

7.2 US 45, COUNTY C TO GOLLNOW ROAD

Project Overview

The project is in Shawano and Waupaca counties, between the cities of Clintonville and Marion. The scope includes replacing approximately eight miles of deteriorating four-lane divided asphalt pavement on US 45. The estimated cost of the project is \$5.1 million (including delivery) and the anticipated required completion date is October 31, 2023.

Request for Qualifications Phase

Following the guidance in the Draft Design-Build Manual, the Request for Qualifications (RFQ) for the US 45 was prepared jointly by WisDOT Alternative Contracting Section and the Northeast region. The RFQ was advertised by WisDOT on October 4, 2021, with a due date for Statements of Qualifications (SOQs) of November 19, 2021. One addendum to the RFQ was issued November 3, 2021, clarifying or changing five separate requirements in the original RFQ.

WisDOT allowed prospective design-builders to formally ask questions on the RFQ content, or to clarify WisDOT's intent on what was to be included in the SOQ. Questions were posted weekly on the project website maintained by WisDOT. Eight questions were asked and answered between October 4, 2021 and October 29, 2021. In addition, WisDOT posted one supplemental question and answer on November 8, 2021. Questions included such topics as: the type of pavement required; when the preliminary design and environmental documents would be made available; and individual roles within the design-builders team, and who could fulfill them. The questions asked and answered formed the basis of the sole RFQ addendum issued on November 3, 2021.

WisDOT received one SOQ, dated November 19, 2021, from a design-build team composed of Northeast Asphalt, Payne and Dolan, and Kapur & Associates. The SOQ was evaluated in accordance with the program manual and the RFQ.

Section 4 of the RFQ specified that WisDOT would conduct an initial pass/fail review prior to scoring the SOQs. To obtain a passing grade, the team was required to meet the "Project General Requirements Checklist", which included "...2 to 4 projects managed, designed and/or constructed by each major participant included in the SOQ." It was determined that the designer (Kapur & Associates) only included one project. Therefore, the SOQ was "failed" and deemed non-responsive.

The project was subsequently canceled as a design-build and the cancellation was posted on the project website. WisDOT has determined that this will not be procured as a design-build project.

Design-build Team Interview

On March 22, 2022, a virtual interview was conducted with the Northeast Asphalt, Payne and Dolan, and Kapur & Associates team to gain their impressions, insights, and suggestions on improving the design-build process. Representatives from each of the team members were

present. Their key points concerning the US 45 project, and the WisDOT pilot design-build program in general, were:

- Given the opportunity to correct what they considered a minor discrepancy in their SOQ, they could have listed dozens of projects that would have demonstrated their qualifications. They suggested the possibility that their SOQ was rejected because it was the only one submitted for the project, and the project did not proceed because SOQ was found non-responsive¹¹.
- They estimated that they spent somewhere between \$40,000 and \$50,000 developing their SOQ¹².
- They believe they could have easily cut a year off the anticipated project delivery schedule if they had been allowed to propose on the project.
- They were concerned that (as of the interview date) no debrief had been offered by WisDOT.
- They thought that the project offered very little opportunity for innovation, and lacked the complexity needed to benefit effectively from design-build. They are unlikely to propose on design-build projects in the future, unless project types more suitable to design-build are selected.

Summary

The project received only one SOQ, and the proposing team was determined to be non-qualified based on project experience that did not meet the minimum requirements. The research team suggests the following as possible reasons for the failure of this project to proceed past the qualification stage:

- Lack of interest in the project, possibly due to the competitive environment for projects of this type.
- A relatively low-cost project which did not justify the cost of SOQ preparation, which is non-reimbursable.
- Lack of experience with design-build by Wisconsin-based designers and constructors and reluctance to accept a new and untried (in Wisconsin) method of project delivery.

¹¹ Proceeding to the proposal phase may have violated Section 86.062(5)(c). This statutory ambiguity is discussed in Chapter 3.

¹² Based on an estimated cost of \$9-11 million, the minimum stipend payment for subsequent proposals would have been approximately \$30,000. No stipend is offered for SOQ preparation.

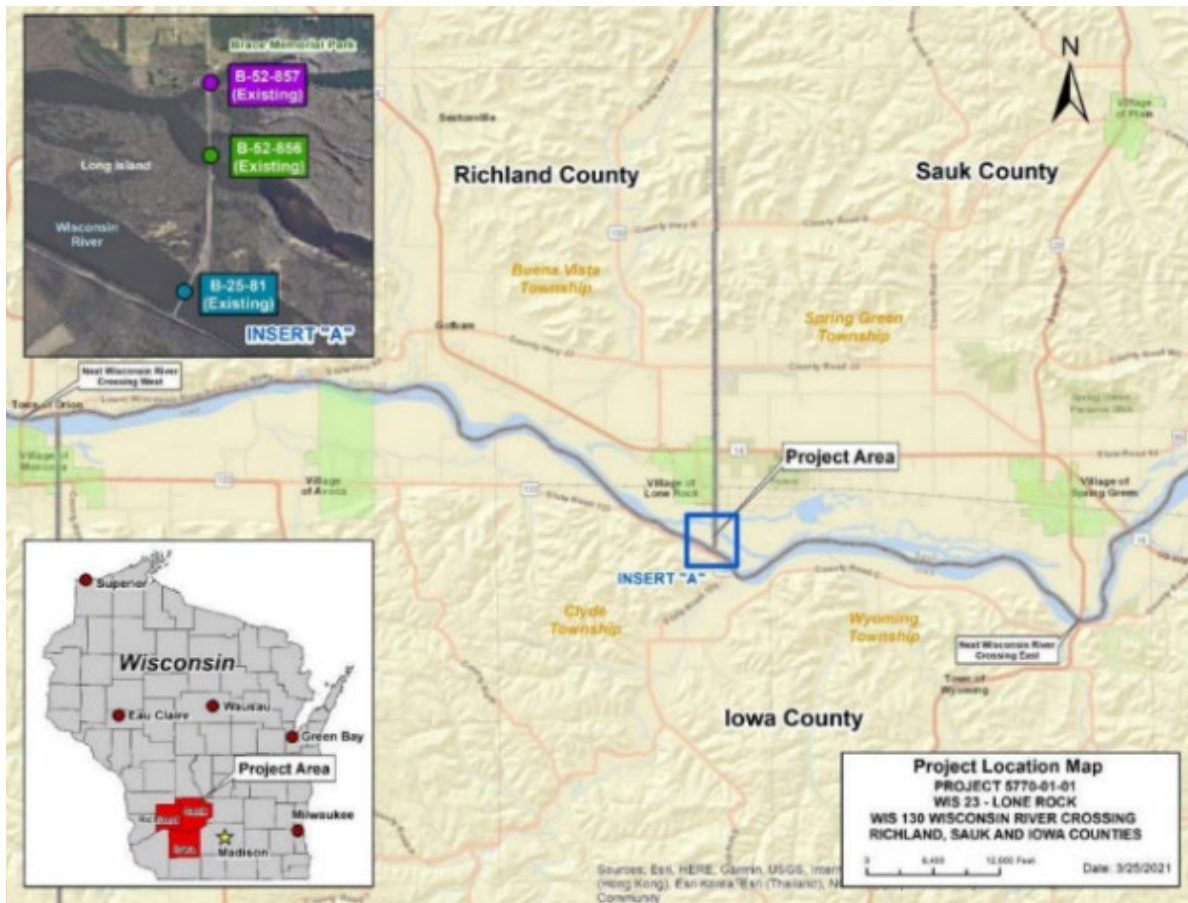
7.3 WIS 130, WIS 23 – LONE ROCK, WISCONSIN RIVER

Project Overview

The existing WIS 130 Wisconsin River crossing in Richland County consists of three bridges, constructed in the 1930s and 1940s, that are nearing the end of their service life and do not meet current minimum clearance width standards. The roadway elements of the crossing are also deteriorating. Through extensive studies conducted from 2015-2018, WisDOT determined that the three bridges were structurally deficient and functionally obsolete and required replacement.

The scope of work for the project consists of reconstruction of WIS 130 over the Wisconsin River from WIS 133 to Lone Rock on a new alignment west of the current alignment. Work will include replacing three existing structures with two new structures separated by a new roadway embankment on Long Island. Project location is shown in Figure 7-2.

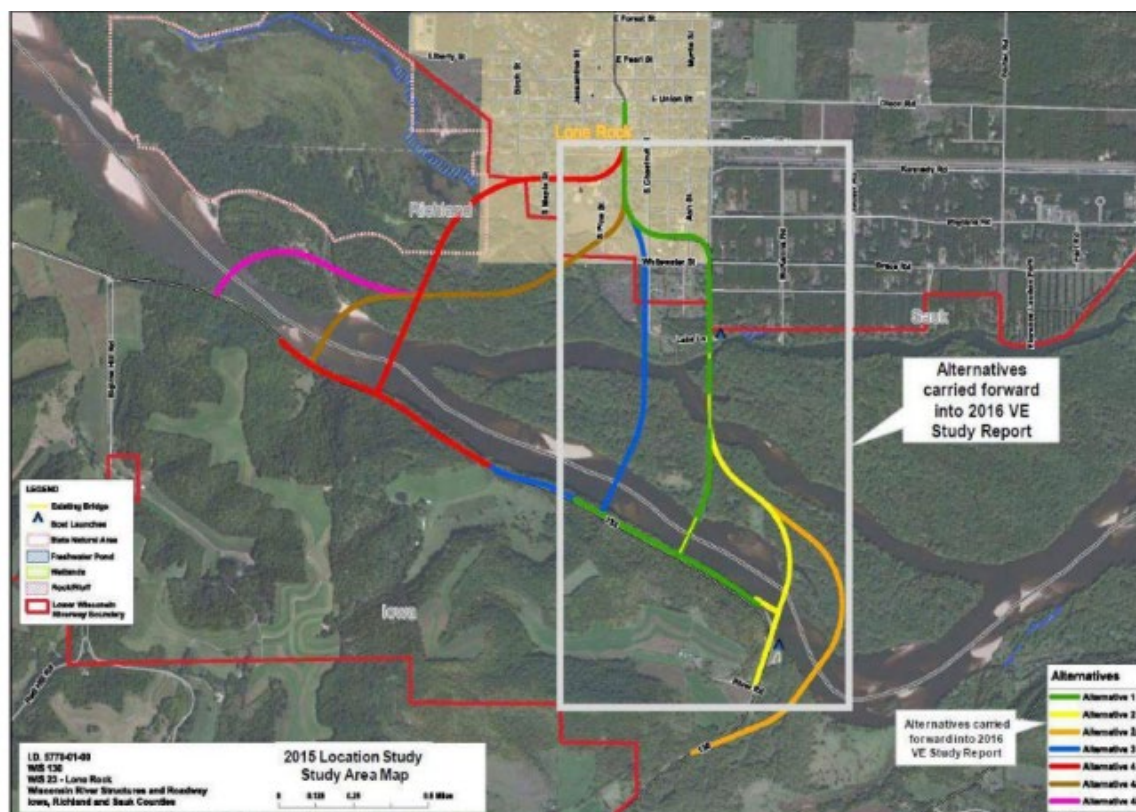
Figure 7-1: Project Location



The estimated construction cost of the project is \$35 million, with the anticipated required completion date of December 1, 2024.

Preliminary engineering and environmental documentation were performed by the WisDOT Southwest Region, and their consultant engineer Michael Baker International. In 2015 a Location Study Report was completed that developed seven build alternatives plus the no-build preserve and maintain alternative, to be further considered, as shown in Figure 7-3.

Figure 7-2: WIS 130 Build Alternatives



A Value Engineering (VE) study was performed on those alternatives in 2016, which eliminated two of the build alternatives as not worthy of further evaluation, leaving five build alternatives for further consideration in the environmental document to be prepared for the project. In 2017 an Origin-Destination (O/D) study was performed to determine use by local versus through travelers.

In 2018 the WisDOT Bureau of Structures performed an in-depth structural analysis of the three existing bridges, and all were found to be structurally deficient and functionally obsolete.

Three public information meetings were held for the project between May 2016 and May 2019, as part of the required NEPA process and documented in the subsequent Environmental Report prepared by Michael Baker International. The environmental report, including the selected

alternative, was approved by FHWA on July 9, 2021, as a Finding of No Significant Impact (FONSI).

Request for Qualifications Phase

Following the guidance in Design-Build Manual of July 2021, a Request for Qualifications (RFQ) was prepared jointly by the WisDOT Alternative Contracting Section and the Southwest region. The RFQ was advertised by WisDOT on November 11, 2021, with a due date for Statements of Qualifications (SOQs) of December 29, 2021. One addendum to the RFQ was issued on December 10, 2022, which changed the SOQ due date to January 5, 2022.

WisDOT allowed design-builders to formally ask questions on the RFQ content, or to clarify WisDOT's intent on what was to be included in the SOQs, which were then posted weekly on the project website maintained by WisDOT. Nine questions were asked and answered between November 30, 2021 and December 17, 2021. Questions included: what size the Organization chart in the report would be allowed to be, have all necessary right-of way been acquired, and the number of project examples showing design-build experience for each major participant (the issue upon which the sole SOQ for US 45 was deemed non-compliant).

Five Statements of Qualification were received from the following design-build teams:

- Zenith Tech -KLJ-Ayres
- Ames-Alliant-SEH
- Lunda-Parsons-Kapur
- Kraemer NA-SRF-EXP
- Granite-Westbrook

In accordance with Section 4 of the RFQ, a pass/fail review of each of the five SOQs was completed by the WisDOT Alternative Contracting Section. Using the General Requirements checklist, all five teams were deemed qualified for evaluation by the TRC.

A five-member Technical Review Committee was formed to evaluate the Statements of Qualifications. As required by statute, the committee included one representative from the Southwest Region, two representatives from the Division of Transportation System Development, one representative from the design industry and one representative from the construction industry. Each scoring member signed a Confidentiality and Non-Disclosure Agreement (Appendix E of the Wis130 SOQ Evaluation Manual). The Chair convened the TRC in Madison, and each scoring member completed their individual evaluation and scoring of the five SOQs, in the manner described in the WIS 130 SOQ Evaluation Manual.

Upon completion of the individual reviews, the reviewers scores were tallied and scoring summary was completed as shown in Figure 7-5.

Table 7-3: WIS 130 SOQ Scoring Summary

Scoring Member	Scoring Member Totals By Design-Builder									
	Zenith Tech		Granite		Kraemer		Lunda		Ames	
	P/F	Score	P/F	Score	P/F	Score	P/F	Score	P/F	Score
No. 1	P	59.5	P	51.5	P	76.9	P	66.0	P	71.1
No. 2	P	70.9	P	72.0	P	77.6	P	64.2	P	66.5
No. 3	P	58.0	P	58.5	P	82.6	P	39.0	P	83.0
No. 4	P	80.4	P	75.3	P	87.3	P	76.8	P	85.2
No. 5	P	70.9	P	68.5	P	77.8	P	67.1	P	71.7
Avg. Score	67.94		65.16		80.44		62.62		75.5	
Final Ranking	3		4		1		5		2	
Short List (Y/N)	No		No		Yes		No		Yes	

Based on the final rankings, WisDOT invited the Kraemer NA and Ames Construction teams to submit proposals.

Proposal Phase

Via the WIS 130 project website, WisDOT ACS notified both Kraemer NA and Ames Construction teams that they had been shortlisted and were eligible to respond to an RFP for the project. WisDOT ACS developed the RFP for WIS 130 and issued it on February 4, 2022. As a best value design-build project, both teams were requested to respond to the RFP with a Technical Proposal and a Price Proposal per the Instructions to Proposers.

The RFP issued for WIS 130 met the statutory requirements and clearly defined the schedule, process, and requirements for the technical and price proposals to be prepared by each shortlisted team. The RFP also clearly established the evaluation process that WisDOT would use in making their final selection of the WIS 130 design-build team and established that WisDOT would pay a stipend of \$105,000¹³ to the unsuccessful proposer, as long as they were deemed “responsive” and passed the “pass/fail” evaluation phase of selection.

¹³ This is the statutory minimum amount (0.3% of the \$35 million cost estimate).

A key element of the Instructions to Proposers was the scoring system to be used for evaluating the proposals that passed the “pass/fail” analysis. A 100-point system was to be used for scoring with:

- A maximum of 40 points to be awarded for technical merit, based on the average of the five TRC members scores.
- A maximum of 60 points awarded for the lowest cost acceptable proposal.
- For each remaining proposer, the Department will calculate the score for their price proposal by reducing the maximum number of points that may be awarded to a price proposal by one (1) percent for each percentage point by which a remaining proposer’s price proposal exceeds the lowest price proposal.
- The final score to be the sum of the technical merit score and price score, with the contract to be awarded to the proposer with the highest adjusted score.

The RFP also offered up to two “one-on-one” meetings with each proposer to clarify requirements of the RFP and discuss Alternative Technical Concepts (ATCs) that the proposers may be considering. Meetings were to be held virtually, due to WisDOT’s COVID-19 policies in place at the time.

On May 12, 2022, WisDOT received two proposals (Technical and Price) from each shortlisted team. Using their Proposal Evaluation Manual for WIS 130 and the Design-Build Project Pass/Fail Checklist, the TRC chair determined that both proposals met the established criteria for evaluation and scoring.

As required by statute, the TRC proposal scoring committee included one representative from the Southwest Region, two representatives from the Division of Transportation System Development, one representative from the design industry and one representative from the construction industry. The TRC met to review and discuss their scores, adjust them as necessary, and complete their independent scoring documents.

After the TRC scoring members completed their scoring of the proposals, the scores were tallied, the price proposals were opened, and the TRC Chair completed the Proposal Evaluation Summary Sheet, as shown in Figure 7-6. The low bid was from Kraemer NA at \$36,937,137. The bid from Ames was \$46,226,000.

Table 7-4: WIS 130 Proposal Evaluation Summary

Scoring Member	Scoring Member Totals by Design Builder							
	Kraemer NA				Ames			
	Pass/Fail	Technical	Price	Total	Pass/Fail	Technical	Price	Total
No. 1	P	31.8			P	27.8		
No. 2	P	32.3			P	27.9		
No. 3	P	31.5			P	26.3		
No. 4	P	31.5			P	27.0		
No. 5	P	32.5			P	27.5		
Final Score		31.92	60.00	91.92		27.3	44.91¹⁴	72.21

The Kraemer NA team had both the highest technical score and the lowest price, which was within 5.5 percent of WisDOT’s estimated cost for the project. On June 3, 2022, WisDOT posted their selection results on the project website, stating their intent to award a contract for the WIS 130 project to Kraemer North America.

Design-build Team Interviews

Virtual interviews were conducted with firms representing three of the non-selected teams: Granite-Westbrook, Lunda-Parsons-Kapur and Zenith Tech, as well as with the selected team of Kraemer NA. The main issues and comments raised in the interviews can be summarized as follows:

- It would have been to WisDOT’s advantage to shortlist more than two teams. Shortlisting only two teams reduced price competition, limited innovation and prevented qualified firms from even attempting to win the project. One team stated “...the stipend would have been paid five times over by the ATCs generated by shortlisting more firms – shortlist as many as possible.”
- There was not enough time for the ATC process, which reduced the ability to exchange ideas and develop good ATCs. It was suggested that this could be solved by holding three ATC meetings/workshops, instead of two, and allowing more time for information exchange and ATC approval.
- WisDOT did not offer an early debriefing. As on the US 45 project, teams were concerned that they did not receive a debrief that was timely enough for them to appeal or point out what they perceived to be errors in the process.

¹⁴ Price Score = 60 – 60 x (Proposer Price-Low Price)/Low Price

- This is a good project for design-build, but contractor innovation was constrained by having a selected alternative. The teams considered this to be the best candidate for design-build of the three pilot projects. However, by already having selected the preferred alternative, the opportunity for innovation was reduced. Design-build teams may have been able to propose lower cost, less impactful alternatives if given the opportunity to do so.
- More than one team stated that they did not believe the Ames team met the qualification requirements of the RFP, and should not have been shortlisted, due to their lack of experience in Wisconsin.
- Investment in SOQ development was substantial. Estimated cost of SOQ development ranged from \$40,000 to \$50,000. When teams are making a significant non-reimbursable investment just to become qualified, WisDOT should shortlist more firms.
- With five members scoring, one outlying score can significantly raise or lower a team's average score. This raises the possibility that bias by one scorer can impact the selection process.
- Not having the required DNR permits in place at the time of proposal raised "a major risk factor", as it was unclear who would be responsible for obtaining the permits.

WisDOT Team Interview

A virtual interview was also conducted with staff from the WisDOT Southwest Region office who were involved in the WIS 130 project. Their comments are summarized as follows:

- The procurement schedule was too short, especially considering that this was WisDOT's first design-build project.
- The processes and procedures to be used for design-build were not sufficiently developed prior to beginning the procurement process.
- Failure to obtain environmental permits and clear right-of-way prior to entering the design-build procurement process created unnecessary risk and made this a poor selection for design-build.
- The iterative process for submitting and approving alternative technical concepts was too short. There was insufficient time for the proposing team to properly develop their ATCs and get them through the approval process.
- WisDOT's design-build consultant did not provide the necessary support throughout the procurement process. The consultant used "cut and paste" templates from other states to develop the RFQ and RFP documents, without first acquiring the necessary understanding of WisDOT procedures.
- The Technical Review Committee should have members with specific technical knowledge directly related to the scope of the project being proposed.
- Adding a project with a new and different delivery method to others for which the staff were already responsible resulted in staff overload, with other traditional design-bid-build projects suffering as a result.

Summary

Based on its size, scope and complexity, this project was a good candidate for alternative delivery. Competition was substantial, with five SOQs and two proposals offering 12 approved ATCs.

It may have been advisable to shortlist at least three firms. This additional competition in the proposal phase would have created more opportunities for innovation and cost savings at a relatively small investment in additional stipend payments.

By entering the design-build process after a preferred alternative was selected, the opportunity for innovation was somewhat diminished. Unfortunately, this is a characteristic of traditional design-build, where a well-defined scope is a necessary precondition to receiving cost proposals. For that reason, this project may have been an excellent candidate for progressive design-build or CM/GC, if those methods had been authorized. This will be discussed in more detail in the recommendations in Chapter 8.

7.4 WIS 125, I-41 – BLUEMOUND DR.

Project Overview

The project entails replacement of existing structure B-44-0010 over Mud Creek, located on WIS 125 (College Avenue), in the town of Grand Chute, Outagamie County. The project will also include temporary signals and multiple traffic control stages on College Avenue and the surrounding local roads. The existing structure is a multi-cell box culvert with no bottom originally constructed in 1953 with the last rehabilitation occurring in 1970. This structure is causing safety concerns due to significant longitudinal and horizontal cracking in the ceiling and the walls of the structure and bowing in the walls of both cells. The sufficiency rating for B-44-0010 in 2020 was 59.0. The Project proposes to replace B-44-0010 with a new slab-span structure over Mud Creek. There are several utilities that will require relocation and one large diameter gas main that is to remain. These relocations are scheduled to be completed by the time of contract award. The project location is shown in Figure 7-4.

Figure 7-3: Project Location



The estimated construction cost of the project is between \$3.5 million and \$4.5 million. The required date of substantial completion and final acceptance are October 31, 2023 and May 1, 2024, respectively.

Preliminary engineering and environmental documentation were performed by the WisDOT Northeast Region. National Environmental Policy Act (NEPA) requirements are complete. A Categorical Exclusion (CE) was signed on December 21, 2021.

Request for Qualifications Phase

Following the guidance in Design-Build Manual of July 2021, a Request for Qualifications (RFQ) was prepared jointly by the WisDOT Alternative Contracting Section and the Northeast region. The RFQ was advertised by WisDOT on March 4, 2022, with a due date for Statements of Qualifications (SOQs) of April 13, 2022.

WisDOT allowed design-builders to formally ask questions on the RFQ content, or to clarify WisDOT's intent on what was to be included in the SOQs, which were then posted weekly on the project website maintained by WisDOT. Eight questions were asked and answered between March 23, 2022 and April 7, 2022. Questions included: Does the project come under the provisions of Administrative Rule Trans 220 (yes); when are 1078 plans due (April 14, 2022); must the required professional licenses be in place for proposers at time of SOQ submittal (yes);

and what is the percentage of plan completion (30%).

Four Statements of Qualification were received from the following design-build teams:

- Northeast Asphalt-Kapur & Associates
- Pheifer Brothers-Michael Baker International
- Kraemer NA-SRF-Hoffman Construction
- Baxter & Woodman – Musson Brothers

In accordance with Section 4 of the RFQ, a pass/fail review of each of the five SOQs was completed by the WisDOT Alternative Contracting Section. Using the General Requirements checklist, all four teams were deemed qualified for evaluation by the TRC.

A five-member Technical Review Committee was formed to evaluate the Statements of Qualifications. As required by statute, the committee included one representative from the Southwest Region, two representatives from the Division of Transportation System Development, one representative from the design industry and one representative from the construction industry. Each scoring member signed a Confidentiality and Non-Disclosure Agreement. The TRC reviewed the Northeast Asphalt–Kapur SOQ and voted to eliminate it from the scoring process as non-responsive with the requirements of the RFQ; therefore, it was not scored.

Each scoring member completed their individual evaluation and scoring of the three remaining SOQs as described in the WIS 125 SOQ Evaluation Manual. Upon completion of the individual reviews, the reviewers scores were tallied and scoring summary was completed as shown in Table 7-5.

Table 7-5: WIS 125 SOQ Scoring Summary

Scoring Member	Scoring Member Totals By Design-Builder									
	NEA		Pheifer		Kraemer NA		BW Musson			
	P/F	Score	P/F	Score	P/F	Score	P/F	Score		
No. 1	P	N/A	P	63.0	P	76.2	P	32.3		
No. 2	P	N/A	P	77.4	P	83.8	P	47.5		
No. 3	P	N/A	P	77.5	P	91.4	P	51.0		
No. 4	P	N/A	P	73.3	P	87.3	P	54.5		
No. 5	P	N/A	P	72.0	P	80.0	P	38.5		
Avg. Score	N/A		72.64		83.74		44.76			
Final Ranking	—		2		1		3			
Short List (Y/N)	No		Yes		Yes		No			

Based on the final rankings, WisDOT invited the Kraemer NA and Pheifer Brothers teams to submit proposals.

Proposal Phase

Via the WIS 125 project website, WisDOT ACS notified the Kraemer NA and Pheifer teams that they had been shortlisted and were eligible to respond to an RFP for the project. WisDOT ACS developed the RFP for WIS 125 and issued it on May 12, 2022. Three subsequent addenda to the RFP were issued on June 23, 2022, July 29, 2022, and August 12, 2022, respectively. As a best value design-build project, both teams were requested to respond to the RFP with a Technical Proposal and a Price Proposal per the Instructions to Proposers.

The RFP issued for WIS 125 met the statutory requirements and clearly defined the schedule, process, and requirements for the technical and price proposals to be prepared by each shortlisted team. The RFP also clearly established the evaluation process that WisDOT would use in making their final selection of the WIS 125 design-build team and established that WisDOT would pay a stipend of \$11,000¹⁵ to the unsuccessful proposer, as long as they were deemed “responsive” and passed the “pass/fail” evaluation phase of selection.

¹⁵ Approximately equal to the statutory minimum amount (0.3% of the \$3.5 million cost estimate).

A key element of the Instructions to Proposers was the scoring system to be used for evaluating the proposals that passed the “pass/fail” analysis. A 100-point system was to be used for scoring with:

- A maximum of 40 points to be awarded for technical merit, based on the average of the five TRC members scores.
- A maximum of 60 points awarded for the lowest cost acceptable proposal.
- For each remaining proposer, the department will calculate the score for their price proposal by reducing the maximum number of points that may be awarded to a price proposal by one (1) percent for each percentage point by which a remaining proposer’s price proposal exceeds the lowest price proposal.
- The final score to be the combination of the technical merit score and price score combined, with the contract to be awarded to the proposer with the highest adjusted score.

The RFP also offered up to two “one-on-one” meetings, limited to 1.5 hours each on June 2, 2022, and June 23, 2022, with each proposer to clarify requirements of the RFP and discuss alternative technical concepts (ATCs) that the proposers may be considering.

On August 12, 2022, WisDOT received proposals (Technical and Price) from both invited teams. Using the Proposal Evaluation Manual for WIS 125, and the Design-Build Project Pass/Fail Checklist, the TRC chair determined that both proposals met the established criteria for evaluation and scoring.

As required by statute, the TRC proposal scoring committee included one representative from Northeast Region, two representatives from the Division of Transportation System Development, one representative from the design industry and one representative from the construction industry. The TRC met to review and discuss their scores, adjust them as necessary, and complete their independent scoring documents.

After the TRC scoring members completed their scoring of the proposals, the scores were tallied, the price proposals were opened, and the TRC Chair completed the Proposal Evaluation Summary Sheet, as shown in Table 7-6. The low bid was from Pheifer Brothers at \$3,806,945.86. This bid was 8.76% over WisDOT’s low estimate and 15.40% under WisDOT’s high estimate for construction of the project.

Table 7-6: WIS 125 Proposal Evaluation Summary

Scoring Member	Scoring Member Totals by Design-Builder							
	Kraemer NA				Pheifer Brothers			
	Pass/Fail	Technical	Price	Total	Pass/Fail	Technical	Price	Total
No. 1	P	33.0			P	31.25		
No. 2	P	30.76			P	31.17		
No. 3	P	30.2			P	28.29		
No. 4	P	32.23			P	31.42		
No. 5	P	29.70			P	30.4		
Final Score	P	31.18	37.29	68.47	P	30.60	60.00	90.51

Although Kraemer NA had a slightly higher technical score, Pheifer Brothers much lower cost resulted in them having the best value proposal. On September 9, 2022, WisDOT posted their selection results on the project website, stating their intent to award a contract to Pheifer Brothers.

STH 125 Design-build Team Interviews

Virtual interviews were conducted with the following teams: Baxter & Woodman/Musson Brothers and Kraemer NA. The main issues and comments raised in the interviews are summarized as follows:

- Too many roles were spelled out in the RFQ. This was “over-kill” for a culvert replacement project.
- WisDOT was overly conservative and was pushing too much risk to the DB team.
- WIS 125 was a poor choice for design-build. It was too small, too simple, and didn’t allow for the DB team to develop cost or time savings.
- The design on the website was at 60% - this didn’t allow for any innovation and took 75% of the options to save time or money off the table.
- WisDOT should have been open to options other than the slab-span they dictated.
- With the Design Study Report (DSR) completed prior to RFQ, WisDOT wasn’t open to options other than the one dictated – and that’s not design-build.

STH 125 WisDOT Team Interview

A virtual interview was also conducted with staff from the WisDOT Northeast Region office who were involved in the WIS 125 project. Their comments are summarized as follows:

- The project required a lot of upfront effort for its size.
- The accelerated schedule did not allow sufficient time to develop project RFQ and RFP books.
- The accelerated schedule prevented design-build teams from proposing ATCs that would have required reopening the environmental document.
- Design was completed to 60 percent before soliciting for design-build, which reduced innovation potential.
- Design-build team's proposal will reduce closure time compared to what would have been projected under design-bid-build. This was a successful project outcome.
- Partner agencies (DNR and utilities) had a hard time understanding and adapting to the unique unknowns on a design-build project. More education/outreach may be needed.
- Staff training in design-build procurement process was inadequate. They did not always have clear direction from ACS. Design-build is a "culture shock" that requires more training opportunities.
- WisDOT's design-build consultant provided generic templates that were not applicable to WisDOT. Editing the project manuals took too long. It would have been easier for WisDOT to develop them internally.
- Better understanding of the differences in the public information process on a design-build project is needed. More public outreach (public website, etc.) to explain how this process differs from traditional design-bid-build may be advisable.
- Adding a project with a new and different delivery method to others for which the staff were already responsible resulted in staff overload, with other traditional design-bid-build projects suffering as a result.
- It would be helpful to discuss with Wisconsin Department of Natural Resources (DNR) how a design-build project aligns with the WisDOT-DNR cooperative agreement.
- The decision to deliver a project by design-build should be made prior to beginning the environmental process, so that multiple alternatives can be included in the analysis.

Summary

Based on its size, scope and complexity, this project was a marginal candidate for alternative delivery. Competition was fair, with three valid SOQs and two proposals offering no approved ATCs. Although there were no ATCs, WisDOT indicates that the project did benefit from innovations proposed in the closure plan, which resulted in a compressed project schedule.

It may have been advisable to shortlist at least three firms. This additional competition in the proposal phase would have created more opportunities for innovation and cost savings at a relatively small investment in additional stipend payments. This may have been limited by WisDOT's decision not to allow proposers to suggest alternatives other than a slab-span bridge.

By entering the design-build process after a preferred alternative was selected, the opportunity for innovation was diminished. Unfortunately, this is a characteristic of traditional design-build, where a well-defined scope is a necessary precondition to receiving cost proposals. For that reason, this project may have been an excellent candidate for progressive design-build or CM/GC, if those methods had been authorized. This will be discussed in more detail in the recommendations in Chapter 8.

CHAPTER 8 – CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

The IPIT research team reviewed the RFQ, SOQ, RFP and proposal documents, and conducted interviews with one or more design-build team(s) from each project. Based on a review of the available data, the IPIT researchers concluded that the procurement process for the three projects conformed to the requirements of state statutes and federal regulations for alternative delivery. The procurements also appear to have complied with the procedures and processes outlined in the draft program manual.

The WIS 130 project was a good candidate for design-build, based on its size and complexity. Because it was a non-complex pavement rehabilitation project, low-bid design-build was the correct delivery choice for US 45, however, the project failed to generate competitive interest, with only one SOQ received. As a low-cost project with a predetermined design (slab span bridge), WIS 125 was probably too small and non-complex to benefit substantially from best-value design-build, although impacts to the traveling public were minimized through contractor input in the design-build process.

WisDOT staff commented that the schedule to deliver the RFQ and RFP for the WIS 130 project was overly aggressive, and many project elements were not complete when the decision was made to use design-build delivery. This is an issue that should be taken into consideration on future projects.

8.2 RECOMMENDATIONS

The research team offers the following recommendations, divided into four areas: program organization and administration, project selection, qualification and proposal phase, and miscellaneous recommendations.

Program Organization and Administration

1. *Strengthen staffing and internal training.* A successful alternative delivery program must have sufficient staff trained and assigned to it. WisDOT currently has one employee dedicated full-time to the alternative delivery program, and we note that an additional position is currently being advertised on the state employment website. The research team recommends that as the program expands, staffing in the alternative delivery office be increased to no less than three FTE. Further, the research team recommends that the department develop a formalized alternative delivery training program.
2. *Identify regional alternative delivery “champions.”* Successful project outcomes depend on staff who are not only trained in alternative delivery, but who also understand and support its potential benefits. The research team recommends that WisDOT undertake an effort to identify alternative delivery “champions” in each regional office. These would ideally be project managers who have expressed interest

and have a sound understanding of the unique requirements and potential benefits of alternative delivery. Some of these champions have already been identified through their involvement in the pilot projects.

3. *Continue outreach and stakeholder education.* Several peer states mentioned that continuous outreach and education to the design and construction industry is an important element in the success of their program. This is particularly true for smaller locally based firms (including DBEs) that may have limited understanding and experience in the alternative delivery environment. The research team recommends that WisDOT continue broad outreach and education to the design and construction industries to enhance understanding of how they can successfully participate in the design-build procurement process. This outreach and education is also required for partner agencies involved in project development, such as Wisconsin DNR and utility companies, so they can understand and adapt to the unique characteristics of a design-build project.

Project Selection

4. *Make greater use of the Request for Letters of Interest.* As noted in the previous chapter, the failure to receive more than one SOQ for the US 45 project may be due in part to a lack of competition on asphalt paving projects in certain areas of the state. Therefore, the research team recommends that the likelihood of a competitive proposal environment be considered when screening projects for alternative delivery. One way to accomplish this would be greater use of the Request for Letters of Interest (RLI) process that is described in the design-build program manual. The RLI is an inexpensive way for both WisDOT and industry to determine if there is sufficient interest in a project to generate an acceptable number of SOQs and proposals.
5. *Increase minimum cost to consider project for design-build.* A successful design-build project must be of sufficient size and complexity for the benefits of innovation and schedule acceleration to outweigh the costs incurred in the design-build process. The design-build program manual specifies a minimum value of \$2 million for a project to be considered for design-build, and the WIS 125 pilot project is estimated at \$2-3 million. Based on our conversations with peer states, the research team recommends that consideration be given to establishing a minimum threshold of at least \$7 million. This will make the screening process more efficient by limiting the number of projects considered, while also maximizing the potential for innovation and cost savings.

Qualification and Proposal Phase

6. *Consider one-step procurement for non-complex, no-bid design-build projects.* The low-bid design build procurement method is useful for less complex projects where the primary benefits are schedule acceleration and cost reduction. Some other states have developed a one-step procurement process whereby any qualified firms can submit a proposal for certain less complex low-bid design-build projects, thus bypassing the

two-step RFQ/SOQ process. Allowing this in certain circumstances would reduce cost for proposers and WisDOT, and potentially accelerate the project delivery timeline. The research team recommends that WisDOT consider requesting a statutory change to allow one-step procurement for non-complex, low-bid design build projects.

7. Revise Technical Review Committee membership and qualifications. Although some states do include industry representatives on their TRC (e.g. Minnesota), none of the peer states that were interviewed do so. Several of the peer state agency representatives expressed the opinion that it is problematic to have people on the TRC who represent private, rather than public interests. Although the Wisconsin statute names the types of organizations that must be represented, it does not specify any minimum qualifications or experience for the individuals that the secretary will appoint. The research team recommends that either (a) the statute be revised to reduce or eliminate industry representatives from the Technical Review Committee, (b) the statute be modified to require that industry representatives have a specific technical credentials and/or actual experience in the consulting engineering or highway construction industry, or (c) that WisDOT adopt a policy that the secretary will only appoint individuals with appropriate credentials and experience to the TRC.
8. Increase the minimum number of qualified teams solicited to submit proposals. The program manual does not specify a recommended minimum number of qualified teams to receive an RFP, while the statute requires that between two and four teams shall be “certified.” In the WIS 130 and WIS 125 pilot projects, only two of the qualified firms were invited to submit proposals, and the cost variance between their proposals was significant. While it is true that too many proposers can be a deterrent to potential proposers, soliciting at least three qualified proposals may lead to more opportunity for innovation and cost savings that exceed the marginal cost of a third review and stipend payment. Therefore, the research team recommends that WisDOT consider adopting a policy that, in cases where at least three teams are deemed qualified, no less than three, nor more than five teams should be invited to propose on any design-build project.
9. For traditional design-build projects, require receipt of environmental permits before issuing RFQ or RFP. Design-build procurement requires a project design that has progressed sufficiently to allow the proposing team to develop a firm cost proposal. Typically, this will require that potential environmental issues have been resolved and state or federal permits have been issued. Failure to do so may result in excessive risk being transferred to the proposer. While this recommendation applies to a traditional design-build project, it would not necessarily apply to a CM/GC or progressive design-build project, where the design-build team is brought into the process before a firm cost proposal is developed.
10. Allow ATCs for pavement design. The design-build program manual specifies that permanent pavement designs are the responsibility of WisDOT and will be included in the RFP document. Some states that were interviewed allow different pavement designs to be submitted as an ATC, and one state requires proposers on projects with significant pavement elements to submit separate asphalt and concrete proposals. To maximize the

opportunity for innovation and life-cycle cost savings, the research team recommends that WisDOT consider allowing proposers to submit pavement designs as alternative technical concepts.

11. Allow more time for the development and refinement of ATCs. Alternative technical concepts are a critical component of the design-build process. Sufficient time should be allotted for their development, review, refinement and approval. WisDOT should consider process changes that will allow for more time and communication between WisDOT and proposers as alternative technical concepts are developed and approved.
12. Implement a tiered approach to stipends and allow stipends lower than 0.3 percent in certain circumstances. According to 23 CFR 636.112, the decision to offer stipends should be based on an analysis of estimated proposal development costs. Stipends are recommended “on large projects where there is substantial opportunity for innovation and the cost of submitting a proposal is significant.” WisDOT stipend guidelines are shown in Table 6-6. The research team believes that the flexibility necessary to determine appropriate stipends is constrained by the statutory requirement that stipends must be offered on every project, and that they must be at least 0.3 percent of estimated project cost. For example, on less complex low-bid design-build projects, a 0.3 percent stipend may be excessive. Based on the guidelines used in other states, the research team recommends that the 0.3 percent minimum be reduced or eliminated, and that WisDOT be given the flexibility to offer lower stipends on less complex or higher cost projects.

Miscellaneous Recommendations

13. Expand WisDOT’s alternative delivery toolbox to include CM/GC and progressive design-build. The alternative delivery statute mentions three alternative delivery methods by name: low-bid design build, best-value design build, and fixed price-variable scope design build. As noted elsewhere in this report, several other methods of alternative delivery also exist and are approved for use on federally funded projects. The research team believes that two of these methods, progressive design-build and construction manager/general contractor (CM/GC) have significant potential benefit to WisDOT. These benefits include the ability to involve contractors and designers much earlier, thus creating opportunities for innovation that may not exist if the design solution has been determined, and environmental documentation completed, prior to entering the alternative delivery process. We also draw attention to Arkansas’ “on-call CM/GC” initiative as something WisDOT may want to research further if CM/GC authority is granted in Wisconsin. An increase in the suite of available delivery methods may be something to consider after the completion of the pilot program, when the lessons learned from the pilot projects can be applied.
14. Incorporate alternative delivery into WisDOT’s performance improvement program. Regular reporting of performance metrics supports continuous improvement and public confidence in the delivery of services. WisDOT’s MAPSS Performance Improvement program includes several highway program performance metrics, including on-time and

on-budget delivery of projects. Development of performance measures specific to alternative delivery would complement WisDOT's existing program. The research team recommends that WisDOT use the list in Table 4-1 as a guide to develop specific internal and outward facing performance measures tailored to alternative delivery projects, and report these on a regular basis.

15. Resolve statutory ambiguity for projects receiving two or fewer SOQs. As noted in Chapter 3, statutory language is unclear on the options available to WisDOT when there are two qualified design-build teams. The research team recommends that Section 84.062(5)(c) be amended to specify that there must be at least three qualified design-build teams before WisDOT can proceed to the proposal phase.
16. Address issues related to the budget impact of encumbrance of funds for design-build projects. State law generally requires that upon approval of any contract, all the funds for that contract must be encumbered. A large design-build contract could require that the entire project be encumbered/funded in year one of the contract, rather than over several years. This could require a substantial budget increase to take on that large encumbrance, which could impact the funds available for other projects. As is done in the state building program for vertical construction, bonding could potentially be used, but it may have federal tax law concerns, especially with lengthy highway projects. While this issue is beyond the scope of this study, the research team recommends that it be considered if the program expands.
17. Adapt the public information process to the different characteristics of design-build. In a design-build project, some details of the project that are important to the public may not be known as early in the project development process as they are in a traditional design-bid-build project. It is important for affected businesses and individuals to understand why this is so. This may require changes to the public information process for design-build projects.

REFERENCES

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APPENDIX A: STAKEHOLDER OUTREACH PLAN

Project Overview

The Wisconsin Department of Transportation (the Department) is implementing design-build contracting for transportation projects in Wisconsin. A consultant is assisting the Department in the Owner's Representative role with the development of a Best-Value Procurement Process.

The project:

- Has developed selection criteria and applied these criteria to the construction program to identify candidate projects.
- Has developed manuals, tools, and forms to support design-build implementation.
- Has implemented an ongoing, intensive stakeholder program resulting in substantive input into development of design-build contracting from Department of Transportation staff, Agency partners, Wisconsin engineering consultant and transportation contracting firms.
- Will advise WisDOT during the RFQ and RFP phases for the first two design-build projects.

Stakeholder Outreach Goals and Objectives

The stakeholder outreach plan will serve as a guide to ensure timely, accurate, concise, and useful information is delivered to target audiences. The goals of the plan include:

- Gather input from target audiences (consultants, contractors, regulatory agencies) regarding concerns each audience may have with the implementation of a design-build program in Wisconsin.
- Establish trust and credibility with project stakeholders.
- Provide transparency throughout the design-build planning process.

To meet the plan's goals, the following objectives have been established:

- Provide project information to the interested parties on a timely and regular basis.
- Inform target audiences through a variety of methods including email notifications, online surveys, a project website, and in-person and/or virtual meetings.
- Encourage participation and feedback from target audiences.

Stakeholders and Target Audiences

Stakeholders and target audiences for the project include engineers and consultants, contractors, the Department's management team, Bureau representatives, regulatory agencies, and industry organizations. Table 1 indicates specific individuals within each of these groups who will be our key contacts for various outreach activities.

Table 1. Stakeholders and Target Audiences

Name	Title	Affiliation	Email Address
WisDOT Management Team			
Rebecca Burkel	Administrator	WisDOT - DTSD	rebecca.burkel@dot.wi.gov
Steve Krebs	Deputy Administrator – Statewide Bureaus	WisDOT – DTSD	steven.krebs@dot.wi.gov
Scot Becker	Deputy Administrator – Regions	WisDOT – DTSD	scot.becker@dot.wi.gov
Kristin McHugh	Director and Communications Director	WisDOT - OPA	kristin.mchugh@dot.wi.gov
Carrie Cox	Director and Chief Legal Counsel	WisDOT - OGC	carrie.cox@dot.wi.gov
Bob Reed	Director and Inspector General	WisDOT - OIG	robert.reed@dot.wi.gov
Joe Nestler	Administrator	WisDOT - DTIM	joseph.nestler@dot.wi.gov
Aileen Switzer	Administrator	WisDOT - DBSI	aileen.switzer@dot.wi.gov
WisDOT Bureaus			
TBD	Manager	Office of Business Opportunity & Equity Compliance (OBOEC)	
Beth Cannestra	Manager	Project Development (BPD)	beth.cannestra@dot.wi.gov
David Stertz	Chief	Project Development (BPD) - Design Standards and Oversight Section	david.stertz@dot.wi.gov
Wayne Chase	Chief	Project Development (BPD) - Construction Standards Oversight & Local Program Section	wayne.chase@dot.wi.gov
Jillene Fehrman	Chief	Project Development (BPD) - Proposal Management Section	jillene.fehrman@dot.wi.gov
Brian Roper	Chief	Project Development (BPD) - Consultant Services and Project Management	brian.roper@dot.wi.gov
TBD	Chief	Project Development (BPD) - Design and Construction Technologies Section	
Ben Thompson	Engineer	Project Development (BPD) - Alternate Contracting Section	benjamin.thompson@dot.wi.gov
Scott Lawry	Manager	Technical Services (BTS)	scott.lawry@dot.wi.gov
Barry Paye	Chief	Technical Services (BTS) – Materials Management Section	barry.paye@dot.wi.gov
Norman Pawelczyk	Chief	Technical Services (BTS) – Acquisition & Services Section	norman.pawelczyk@dot.wi.gov
Pat Trainer	Chief	Technical Services (BTS) – Environmental Services Section	patricia.trainer@dot.wi.gov

Name	Title	Affiliation	Email Address
Jay Waldschmidt	Chief	Technical Services (BTS) – Environmental Process & Documentation Section	jay.waldschmidt@dot.wi.gov
Josh Dietsche	Manager	Structures (BOS)	joshua.dietsche@dot.wi.gov
Don Gutkowski	Manager	Traffic Operations (BTO)	donald.gutkowski@dot.wi.gov
Rose Phetteplace	Manager	Highway Maintenance (BHM)	rose.phetteplace@dot.wi.gov
Regulatory Agencies			
Glenn Fulkerson	Division Administrator	Federal Highway Administration (FHWA)	glenn.fulkerson@dot.gov
Cami Peterson	NR Program Coordinator	Wisconsin Department of Natural Resources (WDNR)	cam.peterson@wisconsin.gov
Sarah Quamme	Branch Chief	U.S. Fish and Wildlife Service (USFWS)	sarah_quamme@fws.gov
Todd Vesperman	Section Chief	U.S. Army Corps of Engineers (USACE)	todd.m.vesperman@usace.army.mil
Daina Penkiunas	State Historic Preservation Officer	State Historic Preservation Office (SHPO)	daina.penkiunas@wisconsinhistory.org
Industry Organizations			
Chris Klein	President & Executive Director	American Council of Engineering Companies (ACEC)	chris@acecwi.org
Matt Grove	Director of Construction Management and Policy	Wisconsin Transportation Builders Association (WTBA)	mgrove@wtba.org
Engineers and Consultants			
Utilize WisDOT roster of eligible engineering consultants (~130 consultants on list as of May 2020)			
Contractors			
Utilize WisDOT prequalified contractors list (~240 contractors on list as of May 2020)			

Stakeholder Outreach Activities and Outcomes

The following table details stakeholder outreach activities and summarizes their results.

Table 2. Stakeholder Outreach Techniques and Timeline

Activity	Description/Objective	Results/Notes
<p>Operational Planning Meeting (OPM)</p> <p>Held July 16, 2020</p>	<p>Introduction to project. Virtual meeting for key internal stakeholders:</p> <ul style="list-style-type: none"> • <i>WisDOT Management Team</i> • <i>WisDOT Bureaus</i> • <i>Regulatory Agencies</i> 	<p>Attended by 24 WisDOT staff and representatives from FHWA, SHPO, USACE and WDNR.</p> <p>Introduction to project scope, process and schedule, role of Alternative Contracting Section. General questions and comments about design-build procurement structures and their implementation by WisDOT.</p> <p><i>Next steps:</i></p> <ul style="list-style-type: none"> • Look forward to structured Department and Agency input opportunities later in the year
<p>One-on-One Meetings – Key External Stakeholders</p> <p>Held August 5 (WTBA) and August 6, 2020 (ACEC)</p>	<p>Met with WTBA and ACEC Directors to discuss project scope, timeline, and future involvement activities for their members and other stakeholders. An individual virtual meeting was held for each organization.</p>	<p>Introduced project and team. Received input on industry survey, organizational concerns with and support for design-build contracting, and ideas for implementation.</p> <p><i>Next steps:</i></p> <ul style="list-style-type: none"> • Prepare to publicize industry workshops • Look forward to reviewing draft design-build documents and providing comments
<p>Email Notification – External Stakeholders</p>	<p>Sent email notification to WisDOT consultants and contractors to introduce project scope, timeline, survey and future involvement activities. Alerted recipients to establishment of design-build website and upcoming workshops. Stakeholders included:</p> <ul style="list-style-type: none"> • <i>Engineers and Consultants</i> • <i>Contractors</i> 	<p>Initial email notification sent September 2020; further communications sent in advance of and following up stakeholder workshops and major website postings.</p> <p><i>Next steps:</i></p> <ul style="list-style-type: none"> • Participate in on-line survey • Participate in stakeholder workshops

Online Survey #1	<p>An online survey was fielded to engineers and consultants on the Department’s roster of eligible engineering consultants. This survey was designed to build awareness of the project and gauge stakeholder opinion and interest in creating a design-build program for Wisconsin and identifying early concerns from professionals. Stakeholders included:</p> <ul style="list-style-type: none"> • <i>Engineers and Consultants</i> • <i>Contractors</i> 	<p>The survey was live during the month of October 2020. One survey response per firm was requested and 258 responses were received. 60% of respondents expressed interest in participating in design-build contracting. Notable results included concerns from small firms about their ability to secure teaming arrangements on design-build teams, uncertainty around the procurement process, and risk allocation.</p> <p><i>Next steps:</i></p> <ul style="list-style-type: none"> • Survey results were used to design a stakeholder workshop program that responded to stakeholder concerns directly.
External Stakeholder Workshops #1 – Consultants and Contractors	<p>Three large scale virtual workshops were facilitated for representatives from the consulting and contracting industry. Introduced the project, articulated design-build principles, discussed team building and RFQ development and evaluation. Stakeholders included:</p> <ul style="list-style-type: none"> • <i>Engineers and Consultants</i> • <i>Contractors</i> 	<p>Consultant Workshop 1, November 18, 2020 - 128 participants Contractor Workshop 1, November 19, 2020 – 185 participants Consultant Workshop 1A, November 30, 2020 – 191 participants</p> <p><i>Next Steps:</i></p> <ul style="list-style-type: none"> • Developed large scale Q&A document based on participant questions and posted to project website
Workshop – WisDOT Bureaus	<p>Virtual workshop with internal Department Bureau representatives. Updated participants on status design-build project, discussed internal coordination, and gathered ideas for efficient internal organization of RFQ materials and development of RFP.</p> <p><i>Stakeholders included:</i></p> <ul style="list-style-type: none"> • <i>WisDOT Bureaus</i> 	<p>Workshop held January 12, 2021 with 43 participants.</p> <p><i>Next Steps:</i></p> <ul style="list-style-type: none"> • Prepare draft design-build books to share with WisDOT staff • Coordinate structured review of draft design-build books
Workshop – Regulatory Agencies	<p>Virtual workshop for representatives from WisDOT partner agencies. Updated participants on status design-build project and received input on process for coordinating agency review and approval. Stakeholders included:</p> <ul style="list-style-type: none"> • <i>Regulatory Agencies</i> 	<p>Workshop held January 19, 2021. Twenty agency representatives participated and provided input on their experience with design-build in other states.</p> <p><i>Next Steps:</i></p> <ul style="list-style-type: none"> • Prepare draft design-build books to share with agencies
Workshop – WisDOT Management	<p>Meet with WisDOT Management to review RFQ materials and development of RFP.</p> <p><i>Stakeholders included:</i></p> <ul style="list-style-type: none"> • <i>WisDOT Management Team</i> 	<p>Workshop held January 21, 2021 with 94 participants.</p> <p><i>Next Steps:</i></p> <ul style="list-style-type: none"> • Prepare draft design-build books to share with WisDOT staff • Coordinate structured review of draft design-build books

<p>External Stakeholders Workshops #2 – Consultants and Contractors</p>	<p>Two large scale virtual workshops were facilitated for representatives from the consulting and contracting industry. Reviewed draft design-build RFQ and RFP templates, which had been posted on the design-build website in advance; industry contacts had been alerted by email of the availability of draft documents. Provided detailed instructions for industry comments on specific document sections via online survey #2. Stakeholders included:</p> <ul style="list-style-type: none"> • <i>Engineers and Consultants</i> • <i>Contractors</i> 	<p>Consultant Workshop 2, February 18, 2021 – 262 participants Contractor Workshop 2, February 18, 2021 – 139 participants</p> <p><i>Next Steps:</i></p> <ul style="list-style-type: none"> • Stakeholder review of draft design-build templates
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Online Survey #2	<p>An online survey was fielded to engineers and consultants on the Department's roster of eligible engineering consultants. This survey provided an opportunity to leave detailed comments on specific items in the draft design-build RFQ and RFP templates. Stakeholders included:</p> <ul style="list-style-type: none"> • <i>Engineers and Consultants</i> • <i>Contractors</i> 	<p>The survey was live in February 2021. The Department requested that only one response be submitted per firm. Twenty responses were received, resulting in 136 individual comments. One-quarter of comments referred to RFQ documents, 18% to ITP provisions, and about half referred to RFP template provisions.</p> <p><i>Next Steps:</i></p> <ul style="list-style-type: none"> • Consider stakeholder feedback as revising templates with WisDOT Bureau and Management • Post revised templates to website
Website Postings	<p>Assist the Department in developing design-build information to post on the Department's website. A dedicated webpage was established to house public facing documents, along with stakeholder involvement information, invitations and links to workshops.</p>	<ul style="list-style-type: none"> • Periodically updated throughout project from July 2020 to current date. • Final template versions of Books 1, 2, and 3 were posted on May 24, 2021 • New information will be posted as it becomes relevant
Additional Outreach by WisDOT	<p>WisDOT staff presented information on design-build to numerous audiences throughout the project development process.</p>	<p>Design-build updates at:</p> <ul style="list-style-type: none"> • WTBA Contractor-Engineer Conference, January 2021 • DBE Workshop and Secretary's Golden Shovel Awards, February 2021 • ACEC/WisDOT Transportation Improvement Conference, March 2021

APPENDIX B: WISCONSIN ALTERNATIVE DELIVERY STATUTE

84.062 Alternative project delivery.

(1) DEFINITIONS. In this section:

- (a) "Alternative technical concepts" means a proposed alternative to the technical requirements provided by the office in the request for proposals for a project.
- (b) "Best value design-build contract" means a design-build contract award made following a calculation of value as provided in a request for proposals.
- (c) "Design-build contract" means a contract for a project under which the design, engineering, construction, and related services are provided by a single design-builder.
- (d) "Design-builder" means a private legal entity, consortium, or joint venture that proposes to or executes a contract with the office to design, engineer, and construct a project under this section.
- (dm) "Design professional" means a person registered under s. [443.03](#) or [443.04](#) or a firm, partnership, or corporation registered under s. [443.08](#).
- (e) "Design-build project" means a project for which design, engineering, construction, and related services are procured through a single contract with a single private legal entity, consortium, or joint venture capable of providing the necessary design, engineering, construction, and related services.
- (h) "Fixed price variable scope design-build contract" means a design-build contract award made to the lowest qualified responsible bidder able to provide the best qualitative scope of work at a price not to exceed a fixed price set by the office.
- (i) "Low bid design-build contract" means a design-build contract award made to the lowest qualified responsible bidder.
- (j) "Member" means a private legal entity that is a member of a consortium or joint venture that is a design-builder.
- (k) "Office" means the department.
- (L) "Project" means a project involving a highway improvement, as defined in s. [84.063 \(1\) \(a\)](#).
- (m) "Qualified responsible bidder" means a design-builder that is responding to a request for qualifications and that is certified by the technical review committee.
- (n) "Responsive cost proposal" means a proposal that clearly identifies the costs of all services to be performed by the qualified responsible bidder, including all related fees, wages, and equipment and material costs.
- (o) "Responsive technical proposal" means a proposal that clearly demonstrates a qualified responsible bidder's understanding of the design, engineering, and construction services to be performed and clearly describes the bidder's approach to the project.
- (p) "Technical review committee" means the committee appointed under sub. [\(3\)](#).
- (q) "Value engineering change" means a proposal that provides for a product of equal or improved quality to the product required by the department and that will reduce the project cost, improve safety, or decrease the time to complete the project.

(2) DESIGN-BUILD PROJECTS.

- (a) The department shall administer a pilot program under which not more than 6 contracts are awarded for design-build projects.
- (b) The department cannot expend more than \$250,000,000 for 6 design-build contracts designated as follows:
 1. One low bid design-build contract for a project with an estimated value of not more than \$25,000,000.
 2. One best value design-build contract for a project with an estimated value of not more than \$75,000,000.
 3. One fixed price variable scope design-build contract with an estimated value of not more than \$75,000,000.

4. Three contracts with a total estimated value of not more than \$125,000,000. The department may enter into a low bid design-build contract, best value design-build contract, or fixed price variable scope design-build contract under this subdivision.

(d) For each project designated under par. (b), the office shall solicit requests for qualifications, requests for proposals, and cost proposals as provided in this section and, subject to sub. (7) (c) and (d), let each project by contract to a qualified responsible bidder.

(e) No more than 6 months following the completion of a design-build project designated under par. (b), the office shall prepare a report, with input from the design-builder and the technical review committee, detailing the project, the decision to designate the project as a design-build project, the type of design-build contract let, and recommendations for statutory changes, if any. The office shall provide this report to the joint committee on finance and the senate and assembly standing committees having jurisdiction over transportation matters. The senate and assembly standing committees having jurisdiction over transportation matters shall schedule a hearing on the report not more than 30 days following distribution of the report by the chief clerks of the senate and the assembly. This paragraph does not apply to projects completed after December 31, 2025.

(3) TECHNICAL REVIEW COMMITTEE.

(a) The secretary shall appoint 5 individuals to a technical review committee to evaluate proposals submitted under this section. The committee shall consist of the following:

1. An employee of the department representing a regional office of the department.
2. Two employees of the department representing the division of the department responsible for transportation project development.
3. One person representing a state association of architectural, engineering, or design companies.
4. One person representing a state association of transportation construction companies.

(b) The secretary cannot appoint to the technical review committee any person associated, as defined in s. 19.42 (2), with a design-builder. No person appointed to the technical review committee may review proposals under this section when the proposed project could benefit the appointee or the appointee's immediate family, as defined in s. 19.42 (7).

(c) A person appointed to the technical review committee is an agent of the department under s. 895.46.

(d) Except as otherwise provided in this section, all records of the technical review committee are open to public inspection and copying under s. 19.35 (1).

(4) BIDS. The office shall solicit design-build proposals in 2 phases. In the first phase, the office shall solicit requests for qualifications under sub. (5) and requests for proposals under sub. (6). The technical review committee shall certify responsible bidders as provided in sub. (5) (c) and shall score technical proposals as provided in sub. (6) (b). In the 2nd phase, the office shall solicit cost proposals and the technical review committee shall evaluate cost proposals as provided in sub. (7).

(5) REQUEST FOR QUALIFICATIONS.

(a) The office shall prepare a request for qualifications that includes all of the following:

1. Minimum required qualifications for certification as a qualified bidder, which shall include all of the following:
 - a. The design and construction experience of the design-builder or member, personnel, and contractors who will manage the design, engineering, and construction aspects of the project. The office cannot require a level of experience that will unreasonably restrict competition.
 - b. A requirement that the design-builder or member employ an individual who has no fewer than 5 years of experience in highway construction specific to highway improvement projects in this state.
 - c. A requirement that the design-builder or member be a design professional or will employ or contract with a design professional.

- d. A sworn statement of the design-builder's financial ability, equipment, and experience in design-build project delivery and any other information the office determines is necessary to determine a bidder's competency.
2. Minimum required qualifications for certification as a responsible bidder, which shall include all of the following:
- a. The design-builder is registered or authorized to do business in this state.
 - b. The design-builder submits a sworn statement that indicates that it has adequate financial resources to complete the work described in the request for qualifications, taking into account any other work the design-builder is currently under contract to complete.
 - c. The design-builder is bondable for the term of the proposed contract and is able to obtain a 100 percent performance bond and a separate 100 percent payment bond.
 - d. If the department has previously contracted with the design-builder or a member, the design-builder or member has a record of satisfactorily completing projects.
 - e. The design-builder or a member is not on a list maintained by the department identifying persons ineligible to bid due to suspension or debarment or on a list that the department of administration maintains for persons who violated statutory provisions or administrative rules relating to construction.
 - f. The design-builder or a member has been in business for at least 12 months.
 - g. The design-builder or a member has served as a contractor on no fewer than 5 projects administered by the department.
 - h. The design-builder can provide information to the technical review committee upon request about ownership, management, and control of the design-builder.
 - i. The design-builder or a member has not been debarred from any government contracts and has not been found to have committed tax avoidance or evasion in any jurisdiction in the previous 10 years.
 - j. The design-builder has not been disciplined under a professional license in any jurisdiction in the previous 10 years.
 - k. No design professional employed by the design-builder or a member or that the design-builder will contract with has been disciplined in any jurisdiction under a license that is currently in use.
3. Information about bid procedures and the proposed project, including all of the following:
- a. The type of contract to be awarded.
 - b. The selection criteria for recommendation of design-builders for phase 2.
 - c. Project requirements, including a scope of work statement and a schedule.
 - d. The required completion date of the project.
 - e. A description of requirements for the technical proposal for the project.
- (b) The office shall advertise the request for qualifications. The office shall include in all advertisements under this paragraph the location and scope of work; the amount of bid guarantee required; the date, time, and place of bid or proposal opening; and the date when and place where plans will be available.
- (c) The technical review committee shall certify at least 2 but not more than 4 design-builders as qualified responsible bidders. If the office does not receive at least 2 responses to the request for qualifications or if the technical review committee certifies only one design-builder as a qualified responsible bidder, the office may re-advertise or cancel the project.
- (6) REQUEST FOR PROPOSALS.**
- (a) The office shall prepare a request for proposals for each design-build contract that includes all the following:
- 1. The name, title, address, and telephone numbers of persons to whom questions concerning the proposal should be directed.

2. The procedures to be followed for submitting proposals, including how proposals must be delivered, the date and time by which they must be received, and the name and address of the person who is to receive them.
 3. The date and time of the pre-proposal conference, if any.
 4. A requirement that a technical proposal and a cost proposal be submitted in separate sealed proposals at the same time.
 5. A clear description of the scope of all design, engineering, and construction work.
 6. The criteria for evaluating proposals and their relative weight, if applicable.
 7. The design criteria package, including a description of drawings, specifications, or other information to be submitted with the proposals, which shall allow the design-builder to use innovative projects meeting the criteria.
 8. The project schedule and budget limits, if any.
 9. The proposed terms and conditions of the contract.
 10. Requirements relating to performance bonds, payments bonds, and insurance.
 11. Amount of stipend, if any.
 12. The procedures for awarding a contract.
 13. A process to review and accept alternative technical concepts and value engineering change proposals.
 14. A requirement that the design-builder perform not less than 30 percent of the construction services under the contract with labor provided by employees of the design-builder or member and equipment owned or rented by the design-builder or member.
 15. Any other information the office determines is necessary.
- (b) The technical review committee shall evaluate each technical proposal, which may include a confidential interview, and shall assign points in accordance with the request for proposals and subject to all of the following:
1. For a project that will be awarded as either a low bid design-build contract or a fixed price variable scope design-build contract, the technical review committee shall determine whether technical proposals are responsive to the request for proposals without ranking or scoring the proposals.
 2. For a project that will be awarded as a best value design-build contract, the technical review committee shall determine whether technical proposals are responsive to the request for proposals and score each responsive technical proposal as required by the request for proposals. The technical review committee may award not more than 20 percent of the points awarded to a technical proposal on the basis of the design-builder's qualifications and ability to design, contract, and deliver the project in accordance with any deadline established in the request for proposals. The technical review committee may award a technical proposal not more than 55 percent of the maximum number of combined points that may be awarded to a technical proposal and cost proposal.
- (c) The office shall allow design-builders to include alternative technical concepts and value engineering changes in their proposals by describing the process for submission and evaluation of alternative technical concepts and value engineering changes in the request for proposals.
- (d) The technical review committee cannot consider a proposal responsive unless the proposal includes a conceptual design, critical path method, bar schedule of the work to be performed or similar schematic, design plans and specifications, technical reports, and all other information required by the request for proposals. The technical review committee cannot consider any price or fee included in the technical proposal.
- (e) The office shall notify the design-builder for each proposal that is determined to be responsive under par. (b) that the design-builder may submit a cost proposal under sub. (7). The office shall reject all proposals that are determined to be nonresponsive under par. (b).
- (7) COST PROPOSALS.**

- (a) Design-builders notified under sub. (6) (e) may submit a cost proposal, and the proposal shall include a fixed cost of design, engineering, and construction services prepared by a design professional that contains all design, engineering, construction, and quality assurance and quality control costs of the project.
- (b) The technical review committee may open cost proposals only after the technical proposals have been reviewed as provided in sub. (6). At the time and place specified in the request for proposals, the technical review committee shall open cost proposals, read the proposals aloud, and, for a project that will be awarded as a best value design-build contract, make public the committee's scoring of the technical proposals.
- (c) Following a review of cost proposals, the department may issue a notice of intent to award a contract, subject to all of the following:
 1. For a low bid design-build contract, the contract shall be awarded to the qualified responsible bidder that submitted a responsive technical proposal and submitted the lowest responsive cost proposal.
 2. For a fixed price variable scope design-build contract, the contract shall be awarded to the qualified responsible bidder that submitted a responsive technical proposal and that submitted a responsive cost proposal that provides the maximum amount of services for the maximum fixed price set by the office or for an amount that is less than the maximum fixed price.
 3. For a best value design-build contract, the contract shall be awarded to the qualified responsible bidder with the highest adjusted score, which shall be calculated by adding the bidder's technical proposal score to the bidder's cost proposal score. The technical review committee shall award the lowest qualified responsible bidder the maximum number of points that may be awarded to a cost proposal under the request for proposals, but not less than 45 percent and not more than 75 percent of the maximum number of combined points that may be awarded to a technical proposal and cost proposal. For each remaining qualified responsible bidder, the technical review committee shall calculate the score for the cost proposal by reducing the maximum number of points that may be awarded to the cost proposal by at least 1 percent for each percentage point by which the cost proposal exceeds the lowest cost proposal.
- (d) Following a review of cost proposals, the office may reject all proposals. If the office rejects all proposals or does not execute a contract after issuing an intent to award a contract under par. (c), the office may reissue the request for proposals and allow only the qualified responsible bidders originally notified under sub. (6) (e) to submit new proposals. The office may pay a reasonable stipulated fee to each design-builder that provides a responsive but unsuccessful proposal in response to the reissued request for proposals. If the reissued request for proposals specifies a maximum fixed price, the office cannot award a stipend to a design-builder whose proposal exceeds that price.
- (e) Not fewer than 5 working days prior to executing a design-build contract, the department shall provide notice to each unsuccessful qualified responsible bidder that a notice of intent to award a contract has been issued.
- (f) The department and the technical review committee shall maintain the confidentiality of information provided by design-builders as required by s. [84.01 \(32\)](#).
- (8) CONTRACT AWARD.**
 - (a) In this subsection:
 1. “Construction services” means work necessary to construct a project, including trucking services and materials purchased regardless of whether the materials are installed by the design-builder.
 2. “Specialty services” means work related to sanitary sewer systems, water main systems, staking, electrical, landscaping and erosion control, traffic control, signing, pavement marking, fencing, and other work identified by the office.
 - (b) No later than 10 days following the issuance of a notice of intent to award a design-build contract under sub. (7) (c), the office shall verify that the design-builder will perform not less than 30 percent of the

construction services under the contract with labor provided by employees of the design-builder or member and equipment owned or rented by the design-builder or member.

- (c) The design-builder shall submit to the office in the form prescribed by the office documentation of the construction services the design-builder or member will perform and the dollar value of the services.
 - (d) The office shall calculate the percentage of total construction services identified in the contract to be performed by the design-builder or member by subtracting the value of specialty services to be performed from the total contract amount and dividing the dollar value of construction services to be performed by the design-builder or member by the difference. If the value of construction services to be performed by the design-builder or member is less than 30 percent of the value of all construction services required under the contract, the office shall cancel the contract award.
- (9) PROJECT DELIVERY.** An individual identified in a response to a request for qualifications or in a technical proposal may be replaced by a design-builder if the office determines that the new individual meets the qualifications described in the response to the request for qualifications or in the technical proposal and that the individual's qualifications are at least equal to the qualifications of the individual being replaced.
- (10) LIABILITY.**
- (a) Nothing in this section shall be construed as relieving a design-builder of 3rd-party liability or liability for loss or damage to property of the state or a county or municipality.
 - (b) All design services, including architectural and engineering services, provided under a design-build contract are services and not products.
- (11) STIPULATED FEE.**
- (a) The department shall award a stipulated fee of not less than three-tenths of 1 percent of the department's estimated cost of design and construction as follows:
 - 1. To each qualified responsible bidder that provides a responsive but unsuccessful proposal when the office issues a notice of intent to award a contract. If the request for proposals specifies a maximum fixed price, the office cannot award a fee to a proposal that exceeds the maximum fixed price.
 - 2. To all qualified responsible bidders that provide a responsive proposal if the office does not issue a notice of intent to award a contract.
 - 3. To all qualified responsible bidders if the office cancels the solicitation before the technical review committee reviews technical proposals.
 - (b) The department shall pay the fee to each qualified responsible bidder under par. (a) no later than 90 days after the department issues a notice of intent to award a contract, determines that it will not issue a notice of intent to award a contract, or cancels the solicitation.
 - (c) In consideration for paying the fee, the department may use work product contained in an unsuccessful proposal in connection with any proposed or awarded design-build project without making any additional compensation to the design-builder. If an unsuccessful design-builder waives the fee, the department cannot use work product in the design-builder's unsuccessful proposal.
- (12) RULES.** The department may promulgate rules necessary to implement this section.
- (13) APPEALS.**
- (a) Any person aggrieved and directly affected by a decision of the office to issue a request for qualifications or a request for proposals under this section shall be entitled to judicial review of the decision as provided in ch. [227](#), subject to the procedural requirements of s. [227.53 \(1\)](#). A person shall be considered a person aggrieved and directly affected by a decision of the office if any of the following apply to a request for qualifications or a request for proposals issued by the office under this section:
 - 1. The request does not include qualifications, requirements, or other items required under this section.
 - 2. The request does not comply with procedural requirements under this section.
 - 3. The request contains material errors or omissions.

4. The request contains material discrepancies, deficiencies, or ambiguities that prevent a person from submitting a responsive proposal.
 5. The request indicates a bias against or preference for a specific design-builder.
 6. The request exceeds the department's authority.
- (b) Any person aggrieved and directly affected by a decision of the office to issue a notice of intent to award a contract under this section shall be entitled to judicial review of the decision as provided in ch. [227](#), subject to the procedural requirements of s. [227.53 \(1\)](#). A person shall be considered a person aggrieved and directly affected by a decision of the office if any of the following apply to a notice of intent to award a contract under this section:
1. The design-builder that received the notice of intent to award a contract was improperly certified as a qualified responsible bidder.
 2. A mathematical error was made in scoring any of the proposals that resulted in an improper intent to award a contract.
 3. There is evidence of collusion or fraud involving either the design-builder that received the notice of intent to award a contract or a member of the technical review committee.
 4. There is evidence of bias of a member of the technical review committee.
 5. There is evidence that a member of the technical review committee has a conflict of interest because the committee member, a member of his or her immediate family, as defined in s. [19.42 \(7\)](#), or any organization or business with which the member is associated, as defined in s. [19.42 \(2\)](#), may benefit from the intent to award a contract.
 6. The technical proposal or cost proposal submitted by the design-builder that received the notice of intent to award a contract is not responsive to the request for proposals, contains conditions or qualifications not provided for in the request for proposals, or does not assign costs to all services identified in the technical proposal or is otherwise materially unbalanced.
- (c) If the office prevails upon judicial review, following any protest and appellate court proceedings, the office shall be entitled to recover all costs and charges included in the final order or judgment, excluding attorney fees. Upon payment of costs and charges by the protester, the bond shall be returned. If the protesting party prevails, the protesting party shall be entitled to recover from the office all costs and charges included in the final order or judgment, excluding attorney fees. The entire amount of the bond shall be forfeited if the hearing officer determines that a protest was filed for a frivolous or improper purpose, including the purpose of harassing, causing unnecessary delay, or causing needless cost for the office or parties.

(14) DELIVERABLES.

- (c) No later than December 31, 2026, the office shall submit a report to the joint committee on finance and the senate and assembly standing committees having jurisdiction over transportation matters summarizing observations of the process utilized for alternative project delivery methods and describing the effectiveness of the alternative project delivery methods contracting procedures. The report shall include discussion on scope of work, history of projects selected, evaluation criteria, selection process, contract administration, work progression, time and cost comparisons between the traditional contracting method and alternative delivery methods, claims, and changes.
- (d) No later than 6 months after receipt of the report required under par. (c), the joint committee on finance shall determine whether the alternative project delivery pilot program was successful in providing the department with additional tools that allow innovation, reduced project completion time, cost certainty, or reduced cost or other advantages or benefits and shall make a recommendation to the legislature as to whether the pilot program should be made permanent.

History: [2019 a. 9](#); [2021 a. 58](#); [2021 a. 240 s. 30](#).

APPENDIX C: DESIGN-BUILD TEAM INTERVIEW QUESTIONS

1. Did you find the RFQ clear in its instructions to you? Were there questions, or concerns with its content, requirements, or what was expected to be delivered by you?
2. How difficult was it to prepare the SOQ? What do you estimate it cost you in terms of time or dollars?
3. Were you given enough time to prepare the SOQ?
4. Do you think that the information asked for in the RFQ was indicative of your team's abilities to perform effectively on the project? What other information do you think should have been asked for that would have made your case as the best DB team for the project
5. Do you think this project was a good candidate for the DB process? Why or why not?
6. How can WisDOT improve their RFQ process?
7. Any other issues you want to bring up that would help make DB a success in WI?

APPENDIX D: PEER AGENCY PRE-INTERVIEW QUESTIONNAIRE

Design-Build Pre-Interview Questionnaire

The University of Wisconsin-Milwaukee Institute for Physical Infrastructure and Transportation (UWM-IPIT) has been contracted by the Wisconsin Department of Transportation (WisDOT) to conduct a research study on the implementation of its pilot design-build program. Part of this study involves interviews with peer agencies to identify some best practices currently being used in alternative project delivery.

Thanks for agreeing to be interviewed for this project. To help us prepare for our interview, we would appreciate having you complete the following brief survey.

Agency Name _____

YOUR AGENCY PROGRAM

Which of the following methods of alternative project delivery do you currently use:

___ Design Build (best value or low bid)

___ Progressive Design Build (best value or low bid)

___ Construction Manager/General Contractor

How long has your agency been using alternative delivery? _____

Over the last five years, what is the average annual dollar value of projects under each of the following delivery methods:

Design-Bid-Build (design and construction) _____

Design-Build _____

Progressive Design-Build _____

CM/GC _____

How many staff do you have dedicated to administration of your alternative contracting program?

Do you have an internal program for training alternative project delivery staff?

SELECTION OF PROJECTS FOR ALTERNATIVE DELIVERY

What, if any, quantitative methodology or tool(s) do you employ to help you screen or select projects for alternative project delivery?

_____ We use the FHWA CASE tool

_____ We use another externally acquired tool (software or manual)

_____ We have developed our own quantitative scoring system (either software or manual)

_____ We do not use a quantitative scoring method to screen or select projects

Do you use a formalized risk-assessment process when selecting design build projects?

The following questions apply only to projects selected for design-build or progressive design-build:

Do you use a two-step process (qualification and proposal) to select design-build teams?

If yes, answer the following questions. If no, please explain the method used to select design-build teams.

QUALIFICATION PHASE

Do you have a committee that evaluates Statements of Qualification?

If so, what is the size and makeup of that committee?

Is there a numerical scoring method for evaluating Statements of Qualification?

If so, what are the categories and how many possible points can be awarded for each?

Is there a defined limit of how many teams can be selected to move to the proposal phase?

If so, what is that limit?

If not, how many teams are typically invited to submit proposals?

PROPOSAL EVALUATION

Does the same committee that evaluated the qualifications also evaluate the proposals? If no, how is the proposal review committee organized?

Which of the following procurement methods do you typically use? If you use both, how is the procurement method selected (e.g. project size or complexity)?

_____ Low bid design-build where price is included in the evaluation

_____ Best-value design build

Do you provide stipends to teams for preparing their proposal?

If so, how is the amount of those stipends determined?

Do you allow proposers to submit alternative technical concepts with their proposal?

Are proposers permitted to submit ATCs for pavement type or thickness?

Who retains the rights to alternative technical concepts submitted by unsuccessful proposers?

PROGRAM METRICS

What program level performance metrics have you used that are specific to evaluating the overall effectiveness of your design-build program?

What project level performance metrics have you used to evaluate the cost, time, quality or effectiveness of using design build delivery?