



### INTRODUCTION

Application of guidance in public procurement practices will depend on the laws, procurement codes, ordinances, and policies of each entity, along with any grant provisions. Individual agencies may also use different terms for the methods described.

### STANDARD

Selection of a construction project delivery method will depend on which delivery methods are permitted by legislation and will be determined through a business analysis of the project characteristics. Project characteristics may include price, complexity of scope, risk, and qualifications, experience, capability, and capacity of the contractor. The attributes of each project characteristic and the priorities of the entity will also help determine which method is selected.

#### ***Definition: Project Delivery Method***

A **project delivery method** is a process that achieves the satisfactory completion of a construction project. The method is selected for the purpose of assigning risk and responsibility to members of the project team, i.e., owner, designer, builder.

**Element 1: The three primary construction project delivery methods are Design-Bid-Build (DBB), Design-Build (DB), and Construction Manager at Risk (CMAR).**

#### ***Definition: Design-Bid-Build***

The traditional construction project delivery method, which customarily involves three sequential project phases of design, procurement, and construction, and two distinct contracts, one for the design phase and one for the construction (build) phase.

#### **1.1 Design-Bid-Build (DBB)**

When using the DBB construction project delivery method, the designer is generally selected through qualifications-based selection. Competitive sealed bids or proposals are often used to select the DBB contractor, though some states allow selection through best value or a competitive negotiation process.



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#### ■ **Multiple-Prime Contracting**

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A variation of DBB with contracts awarded to multiple contractors instead of one prime contractor. The owner will hold separate contracts with multiple contractors for the various construction work disciplines, such as structural, mechanical, and electrical.

#### ■ **Fast-Track Contracting**

Fast-Track contracting is a DBB variation that involves performing certain construction work before the design is completed.

### **Definition: Design-Build**

A construction project delivery method that combines architectural and engineering design services with construction performance under one contract.

#### **1.2 Design-Build (DB)**

When using the DB construction project delivery method, the design-build contractor is preferably selected through a Request for Proposals (RFP) process based on a combination of qualifications and price. Some entities, however, may require selection based only on qualifications through a Request for Qualifications (RFQ) process. The final project price includes both design and construction and is sometimes negotiated prior to award.

Design-Build can form the foundation of a Public-Private Partnership (P3). For more information on P3s, refer to the public procurement practice on the NIGP website.

There are several variations of DB, including Bridging, Progressive Design-Build, Integrated Project Delivery (IPD), and Integrated Design-Build:

#### ■ **Bridging**

A variation of DB in which a designer is retained by the owner to develop the design documents to a specific point, usually to the schematic design level, prior to engaging the DB contractor, who then finishes the design and constructs the project.

#### ■ **Progressive Design-Build (DB)**

A variation of DB in which the sourcing of the design-build contractor is generally based on qualifications or best value, followed by a process in which the owner and design-build contractor work collaboratively through the pre-construction design phases. The construction price is usually determined when the owner is comfortable with the degree of completion of the design, usually at least 40 percent. The design-build contractor is compensated with a firm fixed fee until a fixed price or guaranteed maximum price (GMP) is negotiated for construction. If the owner and design-build contractor are unable to agree, the owner may terminate the contract and use the design to seek competitive bids for a construction contractor.

#### ■ **Integrated Project Delivery (IPD) and Integrated Design-Build**

The DB construction project delivery method integrates the designer and builder into one team with the owner. Integrated Project Delivery (IPD) and Integrated Design-Build are DB variations that extend the integration to include the key subcontractors and subconsultants in the design-build team.

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If competition is increased, potential total cost may decrease. However, DB favors bigger contractors while smaller contractors can more easily bid on DBB solicitations.



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#### **Definition: Construction Manager at Risk (CMR/CMAR)**

A construction project delivery method in which the owner enters into separate contracts with the designer and builder, often at or about the same time. During design, the CMAR advises the owner and designer on constructability, value engineering, cost estimating, schedule, sequencing, selection of components and materials, and other matters. When the design is completed, the CMAR becomes the “builder,” or general contractor, responsible or “at risk” for completing construction within the guaranteed maximum price (GMP).

### 1.3 Construction Manager at Risk (CMR/CMAR)

When using the CMAR construction project delivery method, the designer is selected, generally, through qualifications-based selection, and the CMAR is contracted, generally, through an RFP. Preferably, selection of the CMAR is based on a combination of qualifications and price. However, some entities may require selection only on qualifications. If price is a selection factor, price is proposed in two parts, a fixed price for services during design and a guaranteed maximum price (GMP) for construction. If price is not a selection factor, the fixed fee and GMP are negotiated with the selected CMAR prior to contract award.

When the design is partially complete, the owner and the CMAR negotiate a fixed price for construction based on the design and schedule. If this price does not exceed the GMP and is acceptable to both parties, the owner and CMAR execute a contract for construction services, and the CMAR becomes the general contractor. If the parties cannot agree on a price, the CMAR contract ends and the completed design is used to invite bids from general contractors.

CMAR variations:

- **CM/GC: The Construction Manager/General Contractor (CM/GC or GC/CM)**  
The CM/GC variation is nearly identical to CMAR, with the exception that the CM/GC is proposed as a team with major subcontractors and the CMAR may select subcontractors following contract award.
- **CMa: Construction Manager as Agent (CMa)**  
Under the CM as Agent (CMa) model, the CMa acts as a consultant to the owner, but is not partnered (contractually) with the designer. CMa services may be contracted during pre-construction, during construction, or over the life of the project. The CMa does not execute the work and is not responsible for subcontracts. As a result, the CMa carries minimal risk.



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#### 1.4 Other construction project delivery methods

While there are three primary construction project delivery methods, Task Order Contracting (TOC) and Job Order Contracting (JOC) are frequently-used construction project delivery method adaptations that allow for innovation. TOC can be viewed as an adaptation of DBB and JOC as an adaptation of DB.

##### **Task Order Contracting (TOC) and Job Order Contracting (JOC)**

Both TOC and JOC are efficient and convenient construction project delivery methods for projects that are relatively small in scope and valued below a predetermined threshold. These methods may also be used for projects that need to be done quickly. The solicitation should either state that no guarantee is included for a minimum amount of work or, if required by legislation, provide a reasonable minimum guarantee.

A significant difference between TOC and JOC is the latter's use of a pricing tool when developing the RFP. Some entities may not permit these methods while others limit the project cost or combined project costs that may be awarded as TOC or JOC contracts. Each of these methods can be structured in two phases.

##### ■ TOC

Phase 1: Contractors are pre-qualified in phase one based on sample tasks.

Phase 2: During phase two, the pre-qualified contractors are invited to compete against one another for each Indefinite Delivery (ID)/Indefinite Quantity (IQ) project. Projects are awarded as tasks to the pre-qualified contractor who submits the lowest responsive offer.

##### ■ JOC

Phase 1: Competition occurs during phase one. Contracts, if the result of an IFB, are awarded based on total price, or if the result of an RFP, are awarded based on criteria, including a percentage markup on prices in a predetermined unit price book. Unit price for each construction task of the project is based on the selected unit price book and each offeror competes on the adjustment factor, the percentage added to the pre-set unit price.

Phase 2: As projects are identified, the owner initiates discussions with the contractor. Scope is negotiated and the contractor offers a fixed price based on the unit price book.

#### **Element 2: Selection of the construction project delivery method depends on laws, policies, and project characteristics, along with any grant provisions.**

Laws will determine which construction project delivery methods are permitted. The construction project delivery method is chosen based on award criteria (Table 1) and project characteristics and their attributes (Table 2).

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Table 1 shows the three primary award criteria (low price, best value, and best qualifications) and the three primary construction project delivery methods (DBB, DB, and CMAR). The table serves as a quick reference to identify the most appropriate construction project delivery method(s) for the award criteria. For example, if selection of the construction project delivery method is based on low price, then DBB would be the best construction project delivery method. If price and qualifications are the award criteria, then either DB or CMAR would be selected as the construction project delivery method.

<b>Construction Project Delivery Methods Criteria</b>	<b>Award Criteria</b>		
	<b>LOW PRICE</b> Award is made to the responsible bidder who submits the lowest responsive bid	<b>BEST VALUE</b> Selection is based on a weighted combination of Price and Qualifications	<b>BEST QUALIFICATIONS</b> Selection is based solely on Qualifications.
<b>DBB</b> • Multiple-prime contracting • Multiple award task order contracting	<b>X</b>	<b>X</b> Price evaluation based on construction cost	
<b>DB</b> • Bridging • Progressive DB • Integrated DB		<b>X</b>	<b>X</b>
<b>CMAR</b> • Construction Manager/General Contractor		<b>X</b> Price evaluation based on CMAR fees and general conditions	<b>X</b>

**Table 1: Comparison of Construction Project Delivery Methods**

Table 2 compares construction project delivery methods based on project characteristics and their attributes. As the legal environment may provide for choosing among two or more delivery methods, this table can help guide method selection. The information can be viewed as a continuum, and selection will depend on factors such as the unique requirements of the project and the competency of the government negotiators. For example, if the project needs to be done quickly, Design-Build may be the best option. If project stakeholders also wish to keep a cap on increases in time above the contract amount, then the choice expands to either DB or CMAR. In either case, DBB would be the least favorable method.

Because multiple considerations are involved, the procurement professional will need to establish priorities and weigh criteria accordingly.



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	<i>Construction Project Delivery Methods</i>		
	<b>DB</b>	<b>CMAR</b>	<b>DBB</b>
<i>Project Characteristics</i>	<i>Attributes</i>		
<b>Project Schedule</b>	Fastest	Middle	Slowest
<b>Project Cost</b> (depending on negotiation)	Highest	Middle	Lowest
<b>Change Orders</b> (increases in cost and time)	Lowest	Lowest	Highest
<b>Integration/Collaboration</b>	Highest	Highest	Lowest
<b>Complexity of Scope</b>	Highest	Middle	Lowest
<b>Expertise and Capacity</b>	Contractor	Contractor/Owner	Owner
<b>Risk/Responsibility</b>	Contractor	Contractor/Owner	Owner
<b>Control over Design</b>	Contractor	Owner	Owner

**Table 2: Comparison of Construction Project Delivery Methods by Project Characteristics**

**Element 3: Selection of the construction project delivery method will be determined through consideration of the attributes of each project delivery method, the entity priorities, and the project characteristics.**

The selection of the construction project delivery method should be determined collaboratively between Procurement and internal clients. The decision involves tradeoffs between the different project characteristics, e.g., cost, schedule, and quality. For example, if construction of classrooms needs to be completed before the fall term begins, limited time may be the decision driver and DB may be the best choice. Designing a complex bridge may require the knowledge and experience of the construction contractor and CMAR may be the best choice.

The procurement professional should consider the capability and capacity of the entity when assessing the potential benefits of each construction project delivery method. For example, a higher level of depth, experience, and competence is required of the owner with a DB contract than with DBB or CMAR. With DBB or CMAR, the contracted architect or engineer functions as a guide through the procurement and construction process. The owner may consider employing a third party professional project manager or construction manager to support or supplement staff.

One common complaint about the DBB method is the perception that the lowest bidder may be incompetent, unqualified, or expecting to earn its profit through contract changes and claims. Minimum qualifications, thorough responsibility evaluations, and client reference surveys will help ensure award to competent and responsible contractors. Some governments are also employing best value analysis for DBB contracts to reduce risks.

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### Background

When almost all purchases were “bid” and the notion of best value was still years in the future, DBB was the primary method used for construction projects. Like an Invitation for Bids (IFB), the award criteria of the DBB method is low price. Unfortunately, a number of change orders that caused the ultimate project cost to rise were sometimes the unintended consequence of this method. As value analysis, total cost of ownership, and best value became more familiar tools and concepts, other methods evolved. While IFB and DBB are referred to as traditional methods, alternate delivery methods are increasingly utilized to achieve shorter completion time, decreased agency risk, and best value.

### Resources

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