



WATER DESIGN-BUILD COUNCIL  
AN ASSOCIATION OF LEADING DESIGN BUILDERS

## GUIDELINES FOR BEST PRACTICES

# Collaborative Project Delivery: Which Approach is Right for You?

As a result of the documented increase in the use of design build delivery over the past decade, public agencies and municipalities across the country are maximizing the return on their capital investment by leveraging the advantages of collaborative project delivery. They report that these benefits are the result of innovation, schedule efficiency, cost-effectiveness and other savings. In addition, as the increasing number of states and municipalities recognize the advantages of collaborative project delivery, Owners are examining which delivery methods are best suited for their projects and allowed by their respective state and local procurement policies. WDBC's most recent research also reports that nearly all of the collaborative project-delivery approaches are now available in every state. In supporting Owners who are examining which collaborative project-delivery approach is the right choice for them, the WDBC provides the following guidance for their decision-making process.

### Design-Build

Design-build is the overall description for the collaborative project-delivery method that allows an owner to contract with a single entity for both the design and construction of its project. Design-build (DB) delivery streamlines the procurement process, improves communication and overall project control. With conventional design-bid-build delivery, the owner typically holds two contracts, and engages in a linear and often time consuming procurement process—by first selecting a firm to design the project, and then bidding out the work for a construction contractor to build it. With design build, **the owner contracts with one design-build firm, which serves as a single point of accountability**, from initial design through construction delivery and performance-testing. It also clarifies risk allocation and minimizes the likelihood of change orders, which are usually the result of either the design firm's errors and omissions or the contractor's misinterpretation of design documents. The owner's risk as project integrator for gaps between design and construction are shifted to the design builder in design-build delivery. When considering DB delivery, the owner has two basic options, in terms of the procurement and contracting processes: the fixed-price model and the progressive model.

- **Fixed-price design-build:** Fixed-price design-build is a collaborative delivery option and appropriate procurement process for an owner to use when the project requirements and scope of work are sufficiently defined. This high level

of specificity then enables the design-build proposers to establish and offer a fixed-price for the project during the initial procurement process. Based upon the technical information provided in the procurement documents – either the Owner's description of the project requirements, or a conceptual design, or both the selected design-builder agrees to design and construct the project for a fixed price – and on a specific schedule. Both the offering of the project price and qualifications of the design-builder are appropriately weighted to provide the owner with its “best value” selection of the team.

- **Progressive design-build:** Progressive design-build is an even greater collaborative procurement and delivery option, in which the owner selects the design-builder primarily on qualifications and then authorizes it to proceed with preliminary design and other preconstruction services. This method enables an owner to evaluate a broad spectrum of solutions with the design-builder during preconstruction, and make the most informed decisions regarding design concepts, technology selections, quality of materials, and other important factors that will ultimately have the most impact on the overall cost of the project. Once the preliminary design is developed, the design-builder submits a guaranteed maximum price (GMP) to the owner for consideration and negotiation. If the owner accepts the GMP, or is able to negotiate a mutually agreeable GMP, the design-builder proceeds with final design and construction.

Both the fixed-price and progressive design-build delivery models can be extended to encompass project operations (or operations and maintenance). This option, called design-build-operate (DBO), involves a number of factors that influence an owner's decision-making process to employ DBO. Examples include an owner's desire to outsource operations, or if the owner desires an extended commissioning period and/or extended performance guarantee for the project.

DBO project delivery can be further extended to include financing and even ownership of the facilities of the project. Design-build-operate-finance (DBOF) and design-build-operate-own-transfer project delivery options are available to owners. These delivery options are often referred to as a public-private partnerships, PPP or P3. It is important to note that the Owner can also retain ownership of the facilities through these P3 models, or it can deliver the project through an "off balance sheet" delivery approach.

### Construction Management at-Risk

Construction management at-risk (CMAR) is similar to the progressive design-build project-delivery approach in terms of the delivery phases: both entail a preconstruction services phase through preliminary design and development of the guaranteed maximum price (GMP), and a construction phase where the project is constructed. In CMAR, however, the owner retains two separate contracts: 1) owner contracts with a design engineer to design the project; 2) owner contracts with the CMAR firm for preconstruction services and construction. The CMAR firm provides construction-related guidance, constructability and project estimating and GMP development to the owner and design engineer throughout the initial design and preconstruction phase, and—if the owner accepts the firm's GMP—ultimately delivers the project through the construction period.

### Choosing a Collaborative Project-Delivery Method

In choosing the most appropriate procurement and delivery method for a particular project, an owner must first consider its objectives and priorities, which become the project drivers. After reaching agreement on these project drivers, the owner and their team then weigh them against the pros and cons of

available methods; as well as evaluating the organization's willingness and comfort level to engage in different kinds of working relationships.

An owner's priorities or drivers for delivering a particular infrastructure project might typically include:

- Facilitating the collaboration needed to foster innovation to address complex project and construction challenges.
- Completing the procurement, permitting, design and construction activities within tight schedule constraints or when schedule certainty is vital to success.
- Minimizing the overall, holistic costs of the project, taking into account procurement, design and construction, and ongoing operation and maintenance costs.
- Obtaining early capital cost certainty at designated points of project, such as 30% or 60% design.
- Identifying and efficiently allocating the risks through a balanced risk approach.
- Achieving specified quality standards in design, equipment and construction, as well as the reliability of day-to-day operations.
- Avoiding major disputes through effective contract administration and timely resolution of issues.
- Minimizing the likelihood of project claims and change orders.

The value of the process defining the project's priorities and drivers cannot be underestimated! And while all of the stated project drivers are important, it is only when they are prioritized in relation to each other, that each available delivery model can be effectively evaluated to reach an informed decision.

Choosing the right project delivery method requires matching the owner's prioritized objectives with the approach most likely to achieve them. It also is important to ensure that the owner's organization is comfortable with the nature of the working relationships required.

Please refer to the *Municipal Water and Wastewater Design-Build Handbook* (Third Edition) for greater definition and description of these collaborative project delivery methods.



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