

ARCHITECTURAL/ENGINEERING VERSUS DESIGN-BUILD

PROCUREMENT COMPARISON

A number of communities undertake an evaluation of the procurement alternatives and project delivery methods available to it in an effort to determine the most favorable approach to securing the development of a water or wastewater facility ("Facility"). The selection of an appropriate approach begins with defining the objectives of the procurement. These must include, at a minimum, a favorable price, performance assurances, quality of project, firm schedule for completion, acceptable risk and liability exposure and attractive financing terms.

This analysis compares the traditional project delivery method of architectural/engineering ("A/E") with an approach currently attracting attention in other municipal project procurements, design-build wraps ("DB").

A/E

DB

I. Approach:

Community secures the services of a design engineer to develop detailed designs, working specifications, and attendant procurement documents for the Facility. Respondents submit construction bids. Award to lowest responsible bidder.

Community secures engineer to develop minimum design requirements (up to approximately 30% complete [and sufficient to meet state regulatory standards]), featuring conceptual specifications, quality of materials and equipment and performance requirements. Proposers (generally a team of companies, i.e., engineering, construction, etc.) respond to either (1) a Request for Qualifications ("RFQ") followed by a Request for Proposals ("RFP") or (2) a combination thereof. Once qualified (based on technical, financial and business criteria [among other factors] identified in an RFQ), proposers



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submit a technical, price and business proposal. Negotiations of contract ensue. Award made based on number of factors, price not being the sole consideration generally.

Water and wastewater treatment plants have historically been procured in this manner.

While water and wastewater treatment plants for municipalities have not been traditionally procured in this manner, it is clearly the emerging alternative for the development of major public infrastructure projects, especially performance-based projects. DB procurements have long been the method of choice in the industrial and power sectors. For public and private sectors, the DB approach over the past dozen years has grown approximately 200%.

II. General Procurement

Features: The following is a comparison of the initial features of the A/E and DB approaches to a Procurement.

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| 1 | Allocation of design, performance and financial risk: borne primarily by the Community. | Allocation of design, performance and financial risk: borne almost exclusively by proposer team. |
| 2 | No guarantee of performance. | Guarantee of performance. |
| 3 | To extent liability not borne by the Community, minimum of dual source liability (designer and contractor). | Sole source liability (proposer). |
| 4 | Significant likelihood of litigation (no performance guarantee, more than one source of liability). | Diminished likelihood of litigation (performance guarantee, one source of liability). |
| 5 | Price: generally higher. Price impacts listed in Section III.B. below. | Price: generally, substantially less; more so if private operation part of the procurement. |

Price impacts listed in Section III.B. below.

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|----|--|---|
| 6 | Security for construction: performance and payment bonds. Parent guaranty or other guaranty available, but seldom required. | Security for construction: performance and payment bonds; parent guaranty or other guarantor generally required. |
| 7 | Security for performance: none (limited to redesign). | Security for performance: parent guaranty or other guarantor. |
| 8 | Longer overall procurement period (design engineer, completion of designs, procure contractor). | Shorter overall procurement (procure combination designer and contractor). |
| 9 | Change orders: limited as to specifications; likely for performance. | Change orders: limited to uncontrollable circumstances and Community requested changes. |
| 10 | Generally, no contract negotiations. | Contract negotiations. |
| 11 | Award solely on price. | Award on basis of evaluation criteria, including price. |
| 12 | Greater degree of risk management required (more parties, approval of designs, etc.). | Lesser degree of risk management required (one party, reduced design and construction involvement and approval). |
| 13 | Administrative burden potentially greater, especially arbitrating between separate design and construction contracts. Efficiencies of marketplace reduced because of separate contracts. | Administrative burden potentially less; no separate contract arbitration but more involvement in up-front RFQ/RFP development. Efficiencies of marketplace increased because of one contract combining various project disciplines on one team. |
| 14 | Assuming public ownership, subject to full tax exempt revenue bond | Assuming public ownership, subject to full tax-exempt revenue bond financing. |

financing. This is also true if Facility is to be privately operated assuming requirements of IRS Rev. Proc. 97-13 are met. See finance considerations listed in Section IV below.

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III. Selected Procurement Procedures

A. Contract:

Essentially no contract negotiation, typical specification construction contract to meet detailed design requirements, mechanical completion only (no performance guarantee).

Contract fully negotiable-more a performance-based rather than specification-based contract. Better balance of risks between parties. Typically, Community provides minimum design requirements (up to 30% complete), remainder left to design/constructor team to work out together in order to meet specified performance.

(Contract should be prepared by Community incorporating all policy and risk allocation decisions, then negotiated with short-listed proposers per RFQ/RFP and once completed, then all proposers bid on document. Community maintains control, leverage and policy decisions. Proposers are subjected to competition through entire process. Creates atmosphere for good price proposal and reduces opportunity for procurement litigation.)

Assuming the contractor builds the Facility in accordance with the detailed design, the Community, since it is generally approving the design, shoulders the primary risk that the Facility will perform as contemplated.

Since the detailed design and construction, as well as the requirement that the Facility pass acceptance tests upon completion, is borne by the design/constructor team, risk of Facility performance is shifted almost exclusively to such team.

B. Pricing:

Varies with procurement and construction schedule, amount of development and contingency costs involved, cost and quality of materials, equipment and labor, markups for overhead and profit, competitiveness of procurement, opportunity for additional work, quality and experience of designer and contractor, risk (perceived and real), and opportunity for change orders.

Generally cost plus, but we have seen fixed prices.

Generally fixed priced, but cost plus is also done.

(Cost plus provides little or no incentive to contractor to keep costs down. To the contrary, the more the costs the more the profit of the contractor (% profit on all costs). To keep costs down, Community would have to retain a consulting engineer or construction management specialist to carefully monitor construction and change orders and payment of such firm on a success fee basis. On a fixed fee approach, contractor has every incentive to monitor subcontractors' work carefully as the closer the scrutiny, the more profit and risk prevention to the contractor. A DB fixed price contract does not compromise quality because performance testing must be met.)

Less up-front planning and administration as to procurement and other document development. Tends to decrease costs of consultants. Percentage reduction in project costs are minimal.

Greater up-front planning and administration as to procurement, policies and document development (RFQ/RFP). Tends to increase costs of consultants. Percentage increase in project costs are minimal.

Mid-term procurement administration and mediation of designer and contractor more burdensome. Tends to increase price.

Mid-term procurement: Sole source designer/contractor forces more coordination among members of project team and flexibility, requires less Community administration and involvement and therefore, tends to reduce price.

Greater exposure to litigation due to a minimum of dual liability and mechanical completion assurance only (no certainty of performance). Also, contractor may meet the "responsible" requirement, but not possess the

Less litigation exposure (single entity liability, performance guaranteed via acceptance tests or contractor pays to fix or pay-off or assume financing). Performance guarantee is risk to

quality or have the experience desired to complete the project properly.

contractor however, and will result in premiums in pricing. This, however, is mitigated by competitive procurement. Also, contractor must meet more qualification requirements. Thus, quality and experience of contractor more assured and accordingly, greater likelihood project will be completed properly.

Longer procurement period generally means higher aggregate price. Includes design effort and then contractor procurement.

Shorter procurement period - team procurement with set schedule to complete and acceptance test Facility. Team concept means lesser price.

Summary of Pricing: For performance based contracting (operating plant) as opposed to a non-performance based contract (i.e., office building), the trend has been to favor a DB approach because it will result in a facility having to pass acceptance test standards. Failure to pass acceptance tests will result in contractor obligation to fix at its sole cost (as backed by a parent guaranty or other guarantor), within a specified time frame. Failing such, contractor and parent or guarantor will be liable for the bonds used to finance the Facility.

IV. Financing

Because of the lower interest rates, tax exempt financing, rather than taxable financing, is generally utilized to finance projects. The principal distinction between an A/E and DB developed project is the credit support for the project. The following chart compares the important financing considerations in selecting the method of procurement for a project.

Tax exempt, revenue based, governmental obligations available if there is no private operation of the Facility or the private operation meets management contract rules.

Tax exempt governmental obligations available if there is no private operation of the Facility or the private operation meets management contract rules.

Operations in most A/E developed projects do not make private activity bonds an attractive option.

Tax exempt, private activity bonds available if there is private ownership of Facility or the private operation of Facility does not meet management contract rules.

Municipality must pledge to charge fees sufficient to pay debt service regardless of Facility performance; i.e., municipality is

Municipality commits to purchase water or, as applicable, treat and process wastewater of a specified number of

ultimate credit support for project.

gallons/day at agreed upon price.
Obligation contingent upon availability of water, or, as applicable, wastewater.
Project supported by Facility's performance, not unconditional obligation of municipality; i.e., project financing of Facility.

Financing requirements may limit extent of private operation.

Extent of private operation does not automatically limit financing options.

Municipality's revenue pledge makes performance of Facility a secondary consideration.

Contractor/operator's ability to cause Facility to perform at specified levels is controlling consideration because debt service payment obligations keyed to Facility's performance.

Financing is often arranged independently of the development of the rest of the project.

Financing is closely coordinated with the development of the project and is usually a condition to completion of project development.

There is no negotiation of the terms of the financing.

The financing terms are negotiated with members of project team to ensure needs of project are met.