Many water utility owners are turning to the design/build approach for project delivery. While the design/build approach may vary from desirable to undesirable, depending on the project, the owner’s needs, and the market conditions, it is widely recognized that the design/build system of project delivery can reduce the time required for overall project delivery if managed and implemented correctly.

While the benefits regarding technical quality of the final product and overall cost have been the subject of intense debate in the Florida water business, many utility owners are pursuing projects with the design/build delivery method. This article will feature information on procuring engineering services for all the parties involved in the design/build process so that owners and builders will have an idea of what to expect when they seek engineering services in this type of project.

**Types of Engineering Services**

In a typical design/build contract, the utility owner hires an entity that is either a contractor (FS 489), a professional engineer (FS 471), or an architect (FS 481) to design and build a project. The design/builder performs the engineering either directly or retains an engineer to perform design and construction phase engineering.

If the utility owner is a state or municipal agency, then Florida Statutes 287 regulates the procurement of engineering services for a project. FS 287 requires the agency to retain a design criteria professional (DCP) to prepare engineering documents to solicit bids/proposals from design/builders. The selection of the DCP must be qualification-based prior to negotiation of fees and the execution of contracts.

The municipal utility owner is required by state law to formulate procurement guidelines for selecting design/builders. FS 287 also requires municipalities to select design/builders based on qualifications prior to entering into guaranteed maximum price contracts. In very broad terms, the intent of these provisions in FS 287 is clearly to ensure selection of qualified engineers to design a project.

**Professional Liability Insurance**

During the development and implementation of design/build contracts, both utility owners and design/builders must understand the limits imposed by professional liability insurance carriers on engineers who offer professional services. Typically, professional engineers’ liability insurance does not cover all exposures related to design/build project delivery. Having the engineer agree contractually to assume certain liabilities may not mean that those requirements are covered by the engineer’s insurance policy. Terms like “time is of the essence” or some aspects of the liquidated damages may not be covered by engineer’s professional liability insurance policies; therefore, contracts need to be reviewed carefully by all parties so that the interests of the design/builder, the engineer, and the utility owner are protected.

Because of the insurance limitations described previously, it is prudent to exclude certain provisions of design/build contracts from engineering contracts. Very often, both owners and design/builders may elect to enter into engineering contracts without referencing the prime design/build contracts.

**Utility Owners Should:**

1. Retain a design criteria professional (DCP) to prepare the design/build criteria for projects. Selection of engineering services for this function should be based on FS 287 and qualifications based.
2. Develop a procurement policy for procurement of design/build services. Selection should be qualification-based. The Florida Department of Management Services has published standards and requirements that could be used as a guideline. It is important that such guidelines be enacted into ordinances by the municipal government.
3. A design/build delivery method does not necessarily save on engineering efforts or costs. It may bring projects to completion in a shorter time period and will simplify the owner’s budgeting process by establishing a guaranteed maximum price for construction. It is important that the required and expected qualifications and work effort of the engineer be clearly communicated both during the selection of the DCP and the design/builder.
4. A properly designed procurement process will be based on qualifications in the selection process of design/builders, rather than a strictly price-based selection process in a conventional design-bid-construct project.
5. Ensure that requirements for technical as-
pects and project quality be clearly conveyed through the design criteria package. Poor definition of required quality can result in project quality below expectations. In addition, it is important that quality requirements are enforced through the design/build process by the DCP.

**Design/Builders Should:**

1. Seek and enter into professional services agreements with design professionals prior to submitting responses to design/build requests for proposals from utility owners.

2. Although not required by state law, design/builders should use the engineer’s qualifications and experience as criteria for the selection, rather than rely on price-based selection alone. This will help deliver a quality project.

3. Engineering contracts are not similar to typical construction sub-contracts. Key differences include professional liability provisions and indemnification clauses that will need legal input. It is common practice to isolate some or all of the master design/build contract terms from engineering contracts.

**Engineering Compensation**

Most engineers have established rates based on their level of experience for the services offered. The rates are usually based on the engineer’s direct salary and a multiplier that includes factors for standard overhead and profit.

In typical design/build contracts, it is difficult to establish the full extent of an engineer’s scope of work before the project is completely planned. Most utility owners already have established practices for hiring and contracting with engineers; however, this procedure is new to many contractors who are entering the design/build business. It would be prudent for design/builders to review typical municipal procurement procedures for engineering services before establishing compensation terms.

In some projects, design/builders may choose to enter into general professional services agreements with engineers where all contract terms and billing rates are agreed to and each engineering task is assigned and budgeted as it develops during the project. This becomes difficult in some cases when dealing with guaranteed maximum price contracts, but alternative lump-sum engineering contracts may encounter problems with engineering budgets running out before all the required design work is completed.

Critical professional work during design, such as site investigations, surveys, soil investigations, and other testing activities, should be covered adequately in professional service contracts. When engineering efforts to secure permits are estimated, permit fees should be included. Environmental and building permit fees may represent a significant portion of the design costs for a project.

During construction, costs for engineering assistance should be budgeted properly in the design/build contracts. In addition to typical engineering services during construction, such as inspections, submittal reviews, interpreting plans and specification requirements and project certifications, there are critical professional activities that a design/builder must account for.

Materials testing for compliance, soil density and pile load tests, factory testing of equipment, permit-driven special and threshold inspections, equipment start-up, and preparation of O&M manuals are all tasks that need professional assistance. Also, during construction, the design/builder may need specialized professional engineering services to design form work, cofferdams, sheeting and shoring, precast work, etc. These services may need to be contracted separately to specialty firms.

Developing a fixed scope of work for engineering services before the detailed design of a project is complete is difficult, and therefore developing scope for engineering services should be an ongoing process during a design/build project.

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Payment for engineering services is also a difficult issue in design/build contracts. In typical design-bid-build contracts, utility owners pay engineers as the design and construction progress. This method of payment goes through both the design and construction phases of a project. In a design/build project, the DCP can be paid in a manner similar to conventional delivery projects, but payments to the design engineer through a design/builder are subject to typical construction time delays associated with progress pay requests and retainage issues.

Allowing the design/builder to request early payment for engineering activities, eliminating the need for retainage on engineering invoices, and establishing specific provisions to pay for engineering services are options available to secure qualified engineers to participate in the process effectively.

In summary, procuring engineering services for design/build projects is an evolving process. Owners, builders, and engineers are all partners in this process, and it is in all our interests to establish industry standards for procuring engineering services in order to deliver a quality project to our customers and clients.