

Procurement for dredging operations

Making informed decisions with your purse and your project

International Association of Dredging Companies, The Hague, The Netherlands

What is procurement?

Procurement is the overall process of selecting a contractor for a project. Procurement specifically related to dredging and maritime construction projects typically has several stages:

- Identifying the client's objectives
- Developing options
- Studying the feasibility of the different options
- Determining the need for dredging
- Specifying the various requirements to fulfill the need
- Identifying potential dredging contractors
- Soliciting bids and proposals
- Evaluating these bids and proposals, and
- Awarding the contract.

The emphasis here is on identifying potential contractors, the tender procedure and awarding the contract. For a successful dredging project, a client should choose the contractor who offers the best value for money. That does not mean the least expensive contractor, but the contractor who has the appropriate equipment and performs the necessary services most economically.

Who is in charge of the procurement process: client? contractor? consultant?

In the end the client is always responsible for the procurement process. In certain procurement cases, for instance, for the annual maintenance dredging of a marina, a consultant is usually not needed. Since this is a recurring project and not unique, the client will normally have all the necessary knowledge in-house. In contrast, for large dredging projects, the client will probably not possess all the knowledge required to make a decision. Most large and complex dredging projects are undertaken only once or maybe twice by a given client, generally a government entity or port authority. Contractors will undertake such projects far more often. This implies an experience and knowledge gap between the client and the contractors. The role of the consultant is to bridge this gap. Ideally a consultant will be involved from the start of the dredging project, that is, the planning phase, and a good consultant will advise the client on the requirements of the project, the pre-qualification criteria and on the pre-qualification itself, will (help) draft the tender documents and will advise on the review of tenders and the final selection of the contractor.



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Most dredging companies do not usually (want to) operate the facilities they deliver, so performance-based procurement is often not the most suitable solution, except for maintenance dredging.

Why spend attention to the procurement process?

The procurement process is fundamental to the success of a dredging project. Ultimately the procurement will determine the allocation of tasks, as well as the allocation of responsibilities and risks amongst those involved in the project. If the procurement is successful the contractor, client and possibly consultant will, in collaboration, define the risks involved in delays, determine whether to 'pull the plug' if the project is not proceeding properly, and decide how and when to adjust course. And last but not least, a serious procurement process guarantees the best value for the client's money, which is not necessarily the lowest price.

What is pre-qualification?

Pre-qualification is a first selection amongst potential contractors before bids and proposals are solicited. In the pre-qualification stage contractors can provide evidence of their qualifications prior to the actual tender process. Pre-qualification raises the quality of the competition by defining the range of each contractor's attributes in terms of technical ability, craftsmanship, resources, equipment, financial stability, attitudes and experience. In other words: pre-qualification is the process of assessing whether a contractor is potentially able to execute the project in terms of quality, time and costs. The pre-qualification process makes sure that only qualified contractors proceed to the next stage of the procurement process – the tender process. Pre-qualification encourages the client to focus on priorities and needs prior to the final selection of a contractor.

How are the pre-qualification criteria determined?

The pre-qualification criteria are determined by the client with the advice of the consultant. The criteria should be objective, clearly stated, and apply equally to all prospective contractors. Excessive burdens on prospective bidders should be avoided and clients should not demand unnecessary formalities. For example, if original documents, certificates and attested signatures are required, it should be sufficient to receive those at the end of the bid evaluation procedure from the successful contractor or alternatively only from the bidders who are short-listed after pre-qualification.

What considerations are important for the procurement strategy?

In general there are two possible procurement strategies: the contractor can be selected at an early stage or at a later stage. Considerations may include:

- Time: how soon should the project be delivered?
- Cost: how important is knowing the final cost before committing to construction?
- Quality: what level of quality is required?
- Complexity: what level of (technical) complexity is involved?
- Flexibility: how likely are changes in requirements or externally enforced changes?
- Risk: what risk allocation is required?

At what stage should the contractor be selected?

The above-mentioned considerations suggest the early selection of a contractor. For small-scale and routine (maintenance) projects, with the client having all the necessary knowledge, price usually is the most important consideration. In those cases the selection can be made at a much later stage.

Large-scale dredging projects, however, tend to be complex; they require high quality standards, require flexibility of the team, include considerable risks and are costly. Therefore, the involvement of a qualified and experienced contractor at the earliest possible stage offers many advantages. For instance, when the contractor is selected at an early stage, the client and the consultant can benefit from the contractor's knowledge and experience, knowledge and experience that clients normally lack. With the early involvement of the contractor, price can, by definition, become a less important consideration. This is advantageous because while a project is still in the design phase naming a fixed price may be unrealistic.

What are the other advantages and disadvantages of an early selection?

A contractor that is selected at an early stage can play an important role in the design phase. Some principle advantages of this approach include:

- The contractor will have the maximum opportunity to contribute relevant knowledge and skills
- The contractor introduced at an early stage can implement improvements in methods and design when these can still be achieved at low costs.

The biggest disadvantage to early selection is that it limits the opportunity for competition on price, since fixing the definite price so early on is not possible. This risk can be limited by deferring the formal appointment until the contractor can guarantee a maximum price. The early selection of a contractor carries one very significant caveat: The process must be even more transparent than when the contractor is selected at a later phase. Legislation on free competition in many nations requires that all prospective contractors have equal opportunities in tendering. When the selection is done on price alone, the process is inherently transparent; when selected on value, criteria have to be as transparent and unbiased as possible.

What does the traditional tender process look like?

In a traditional tender process, the contractors that have been short-listed after the pre-qualification phase are invited to submit tenders. If necessary, interviews and/or other relevant procedures are carried out to obtain requisite information. After that the preferred contractor is determined by applying the relevant criteria. The final step in the process is agreeing to and signing an appropriate contract.

How are the tenders to be assessed?

The short-listed contractors are all able to fulfill the basic obligations of the contract. What then are the criteria to make the final decision? The following skills and resources have to be evaluated in a more in-depth way, usually by looking at the track record of each contractor: the technical knowledge and skills to add value to the project by offering innovative and effective solutions; time management; cost management; quality



A good procurement process helps clients get what they need at reasonable prices and in a timely fashion, using the best methods and tools to high standards.

management; risk management; value management; safety and health management; environmental impact management; supply chain management; appropriate human resources; financial resources; and effective internal organization. Since most of these criteria seem self-evident, examining the track records of contractors are very important. For example, all bidders will state that their time management is excellent, but by comparing track records, a clearer picture will emerge.

How can the client obtain this information?

The information to assess these criteria can be gathered in several ways: on paper, face-to-face and/or third-party references. Much of the general information may already have been collected during pre-qualification. Now, during the bidding stage, information is gathered to assess the abilities of each contractor for the specific project. One key objective is to distinguish the skills to do the job from those to win the job.

On paper: Questionnaires can be used to gather the easily accessible information, such as financial and staff resources, experience and capacity of the company and the official procedures. Information related to the current project can be asked about the company's workload, current financial situation and proposals on how to execute the project.

Face-to-face: Visits by the client or consultant to a contractor's offices or to specific projects where the contractor is currently working are a direct way to obtain information. The same is true for presentations and interviews. Face-to-face information is often the best means of verifying the information received on paper.

Third-party references: References can clarify subjects not covered by questionnaires, particularly the more qualitative issues. What are, according to former clients, the strengths and weaknesses of the contractor? How does the contractor respond to problems? How can this contractor add value to the dredging project?

How is the final choice made?

Large-scale dredging projects are rarely awarded on price alone. This means that to make a final choice a clear set of thresholds must be established. These thresholds should indicate minimum levels of competence and capacity to deliver the required contribution to the project and they should be established in terms of readily identifiable and quantifiable indicators. Thresholds, such as financial soundness, good safety and health management, the general capacity to undertake projects of a given type and size, will have been evaluated in the pre-qualification process. In the bidding stage the thresholds will be higher and more specific.

How can attributes be weighted and scored?

The attributes required will not all be of equal significance. This means that they have to be weighted. In some cases, project time will be more important than costs. In others, the ability to cooperate with many other parties is critical. By careful evaluation, the client must rank the required attributes so they can be weighted and scored.

The information about how the required attributes will be weighted and scored must be transparent, and therefore should be published beforehand as part of the tender documents. In this way, if contract negotiations are completed successfully, the highest scoring bidder will be awarded the contract.

Is the 'two-envelope system' a serious alternative?

The two-envelope system is suitable when price is not the most important consideration, but is by no means obligatory.

It is a quality-based selection method that promotes the unbiased selection of the best technical proposals prior to contract negotiations.

The client first decides how much weight to give to the technical attributes; the rest of the choice is based on price, for example, 60 and 40 percent respectively. In the next step, the short-listed contractors are asked to submit their proposals in two separate, sealed envelopes. The first envelope contains the technical qualifications, methodology and schedule. The second envelope contains the proposed fee. The first envelopes for all proposals are opened and scored. Only then are the second envelopes of the top-rated contractors opened and the price from the second envelope is added to the scores of the first envelopes. The best scoring bidder is then awarded the contract.

What is 'performance-based procurement'?

Performance-based procurement differs from the general process of procurement in that it tries to improve the delivery of services by outsourcing their provision and by linking payment to the delivery of services instead of only to a facility. In short, the client purchases a service instead of a facility. Key characteristics of performance-based procurement are:

Strategic partnerships: Establishes long-term, mutually beneficial partnerships with qualified contractors possessing the required knowledge and expertise;

Business-driven solutions: Focuses on obtaining proven solutions to specific problems and identifying innovative ways of achieving goals;

Best value evaluation: Results in solutions that provide best value rather than the lowest bid. This is an objective method that critically reviews and competitively scores solutions based upon the merits of the quality of the solution, the risk of implementing new technologies and work processes, and the net benefit;

Performance-based payments: Provides for payment if and when benefits are realized after implementation of the solution. This principle can help solve upfront project funding problems, increase the commitment of the contractor and limit the client's financial risks without unreasonably increasing the contractor's risk. For dredging projects performance-based procurement is often not the most suitable solution, because most dredging companies do not usually (want to) operate the facilities they deliver. An exception is maintenance dredging. If the contractor is hired only to execute a project, contractor involvement will end after delivery. If the contractor is also responsible for the long-term maintenance of the project, then the procurement strategy may lean towards performance-based procurement.

Can Public-Private Partnerships (PPPs) be used as a model as well?

Public-private partnerships (PPPs) are a form of performance-based procurement, especially suitable for large, complex and expensive infrastructure projects. PPPs are not only about executing and delivering a dredging project, but also about

operating it. A PPP will depend on whether or not the contractor is also able, or willing, to operate a facility. Until recently infrastructure was seen as an exclusively public domain. This meant that a project could only start when the public party, i.e. a government entity, had the resources to start; many projects were postponed until the necessary finances became available. PPPs are a means to attract the private sector to the development, planning, financing, construction and operation of infrastructure projects. The financing aspect is especially of great interest, because in a PPP the private sector is expected to provide (part of) the capital for an investment. For the duration of the contract, the contractor takes over the construction and/or operating risks in exchange for earnings from the project.

Why is a good procurement process necessary?

A good procurement process provides management, leadership and policy direction, and supports the management of financial activities. It effectively manages the tendering process. It helps clients get what they need at fair and reasonable prices and in a timely fashion, using the best methods and tools with adherence to high standards of professional integrity. To continue to improve the procurement process, clients should anticipate their evolving needs, especially the need for contract management.

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FURTHER READING

EIC Blue Book on Sustainable Procurement (2004). European International Contractors (EIC), Berlin, Germany.

Improving the Quality of Construction. A guide for actions (2004), Fédération Internationale des Ingénieurs-Conseils (FIDIC), Geneva, Switzerland.

Jackson-Robbins, Adrian (1998). *Selecting contractors by value*. Construction Industry Research and Information Association (CIRIA), London, UK.

ENQUIRIES

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