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***Guideline for Selecting  
Engineering, Geological and  
Geophysical Consultants***

*Draft 1.5*

*June 2006*

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## FOREWORD

This document is an update and replacement of the APEGGA guideline *Selecting Engineering, Geological and Geophysical Firms - A Guideline*, November 1997. It was originally published in 1985, revised in 1989, and revised and expanded in 1997. This version updates the tone, format, language, and references and recognizes the direction given in other companion guidelines and practice standards.

Guidelines use the word *should* to indicate that among several possibilities, one is recommended as particularly suitable without necessarily mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain course of action is disapproved of but not prohibited (*Should* equals *is recommended that*). The word *shall* is used to indicate requirements that are mandatory and must be followed (*Shall* equals *is required to*). The word *may* is used to indicate a course of action permissible within the limits of the guideline (*May* equals *is permitted*).

## Participants

APEGGA's Practice Standards Committee (PSC) publishes practice standards and guidelines to achieve uniformly high standards of professional practice which meet the intent of the *Engineering, Geological and Geophysical Professions Act* and which identify what the public should expect from any Professional Member of APEGGA. The goal of the committee is also to achieve an atmosphere in which a competent and effective consulting industry can thrive and produce direct benefits to the public.

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## 1 OVERVIEW

This guideline presents a recommended process to assess and select a Consultant. The Consultant selection process described herein can be adapted to any type or scope of assignment as long as these processes do not violate the professional principles and the *Code of Ethics*. APEGGA does not provide referrals, or recommend Consultants.

APEGGA's position on Consultant selection is based on the following three fundamental concepts:

1. Selection of Consultant based on qualifications and competence.
2. Focus on value for the Client and protection of the public.
3. Creation of a relationship that encourages mutual trust between the Client and the Consultant.

The original guideline was prompted by concerns that Consultants are being asked to Bid for work. A survey of Clients and members was conducted to determine if Bidding for work was occurring and, if so, what impact it had on the quality of the work. The survey confirmed that overemphasis on price and Bidding during the selection process which, in some cases, negatively impacted the quality of the work.<sup>1</sup>

APEGGA is concerned that Bidding and the use of price as a key selection criterion may lead to inappropriate levels of service. This in turn leads to unacceptable risks, liability, and is a disservice to the public's best interest. As such, Bidding for consulting services is strongly discouraged by APEGGA.<sup>2</sup> Professional Members, as Clients, are also strongly discouraged from soliciting Bids.

This guideline puts forward the Qualification Based Selection process for engaging consulting services. This process emphasizes value and quality in consulting services.

### 1.1 Scope

This guideline provides a summary of factors for consideration in selecting an engineering, geological, or geophysical Consultant to provide consulting services. An overview of the benefits of Qualification Based Selection is given. Particulars of the selection process are discussed and criteria for selection are reviewed.

Related aspects of selecting an engineering, geological, or geophysical Consultant, such as compensation and Contracts, are covered by APEGGA's guideline for *Consulting Rate Structures and Contracts*. This guideline is not a legal document and is not

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<sup>1</sup> L'Ordre des Ingenieurs du Quebec (OIQ) interviewed 450 consulting engineers and clients and reported the results in the April 2006 issue of the association's magazine PLAN. "Virtually all engineers from the consulting engineering firms polled stated that when price is a selection factor, to have the lowest possible price in order to win a contract, they must substantially reduce the services they offer their clients. The report strongly suggests that such reductions of professional services may affect the public interest."

<sup>2</sup> Bidding is also strongly discouraged by professional liability insurance providers. Refer to Encon's Loss Control Bulletin 108 for Architects and Engineers – Professional Liability Insurance: "Bidding for Projects – Just Say No! Or...", April 2005.

intended to supersede or replace contractual arrangements that are designed to satisfy specific situations.

## 1.2 Purpose

APEGGA's objective in publishing this guideline is to encourage consistent, fair, equitable, and ethical conduct in the selection process for engineering, geological, and geophysical Consultants. It emphasizes Qualification Based Selection, which is designed to optimize the benefits to the public and to the Owners of Projects for whom the professional consulting services are performed.

This Guideline reflects the intent of the *Engineering, Geological and Geophysical Professions Act* and its *Code of Ethics*. It should be read in conjunction with those documents and interpreted in a manner that reflects the professional principles described therein.

## 1.3 Definitions

For the purposes of this document, the following terms and definitions apply and are capitalized throughout.

### **Bidding**

The offering of a price for consulting services which will be used as the primary basis for Consultant selection or differentiation amongst the "bidders" without due consideration of other factors, such as quality, public safety, extent of work and life-cycle management benefits.

### **Client**

The Person, Owner, or agent of the Owner who requires the services of a consulting Professional Member.

### **Code of Ethics**

Scheduled *Code of Ethics* established pursuant to section 19(1)(j) of the *Engineering, Geological and Geophysical Professions Act*, R.S.A. 2003, c. E-11.1.

### **Consultant**

An individual or entity registered with APEGGA to engage in the practice of engineering, geology or geophysics in the Province of Alberta who provides professional consulting services directly to a Client. For the purpose of this guideline, this also includes Subconsultants, acting on behalf of the Prime Consultant.

### **Contract**

A private agreement entered into voluntarily by at least two Persons, recognized by law, which gives rise to obligations that the courts may enforce.

### **Owner**

The Person who owns the property under consideration by the Contract and has authority of ownership.

**Person**

An individual, corporation, company, association, firm, partnership, society, or other entity/organization.

**Professional Member**

A professional engineer, professional geologist, professional geophysicist, registered professional technologist (engineering), registered professional technologist (geological), registered professional technologist (geophysical), or licensee entitled to engage in the practice of engineering, geology, and geophysics under the *Engineering, Geological and Geophysical Professions Act*, R.S.A. 2003, c. E-11.1.

**Project**

The total work contemplated.

**Qualification Based Selection**

Qualifications Based Selection is a competitive process for the procurement of professional consulting services that is based on qualifications.

## 2 SELECTING CONSULTANTS BASED ON QUALIFICATIONS

The primary objective of selecting professional consulting services is to retain the right Consultant to provide the right services for the right reasons for the right budget. To achieve these objectives, Clients need to use a proven selection method. The acquisition of most commodities in industry uses a tendering process, with the objective of identifying the vendor with the lowest price for the commodity. Consulting services are not commodities and their procurement cannot effectively be obtained in using this manner. Therefore, APEGGA recommends Qualifications Based Selection (QBS) as the preferred method for selecting a Consultant.

### 2.1 Qualification Based Selection

Although there are many ways to select a Consultant, QBS is recognized to provide the best value-for-money in professional consulting engineering, geological and geophysical services. QBS emphasizes evaluation and assessment of Consultants according to the following criteria:

1. Technical Credentials
2. Experience
3. Managerial Skills
4. Availability of Resources
5. Professional Integrity
6. Strategy for Project Execution / Methodology

*"Over the past five years Qualifications-Based Selection has assisted the City of Lethbridge in selection of the best consultant for a variety of projects. Best is defined as the consultant that understands what the work is, has a qualified team consisting of members with the right skills, using the right processes to come up with the most cost-effective solution."*

*Dalton Stafford, P.Eng.  
Manager, Infrastructure Engineering  
City of Lethbridge*

## 2.2 Advantages of QBS

The QBS process has many inherent qualities that are advantageous to Clients. Some of the advantages include:<sup>3</sup>

- Providing a vigorous and open competition and a transparent selection system that focuses on qualification, competence, creativity and proven performance.
- Giving Clients better control of the hiring process.
- Placing emphasis on the Client's objectives and expectations of quality, well adapted to current conditions and future trends.
- Identifying the best design team and most appropriate technology for the Project at hand.
- Promoting a professional relationship where the Client and Consultant work together in a collaborative spirit to maximize the quality, value, cost effectiveness and usefulness of the final product. This gives a greater potential for Project savings, promotes a non-adversarial professional relationship, and minimizes the potential for dispute and litigation. A good relationship between a Client and Consultant is essential for the successful execution of a Project.
- Leading to designs that are economical to implement and maintain in accordance with the Client's requirements.
- Adding value while reducing total life-cycle costs,

QBS also has benefits that accrue to the Consultant. These benefits include the following:

- Being recognized and valued for expertise and quality of services.
- Expecting and encouraging innovation and talent.
- Receiving fair remuneration for the services, without having to underbid and undervalue the work.

There are many Projects that are innovative and exploratory in nature, have significant uncertainties in scope definition, or where a full understanding of the services is unknown at the outset. Clients may not have in-house staff able to prepare detailed terms of reference or monitor and provide guidance throughout the course of the Project. Clients of such Projects should be particularly wary about quotations for consulting services that seem unrealistically low. For these types of Projects, the use of QBS becomes essential.

At the same time, the QBS process recognizes that few Projects are heavy on innovation or require a highly qualified Consultant to complete. For some Clients, Consultant fees may be a primary consideration for Projects that are routine and/or low budget. For these types of Projects, a modified QBS process is recommended to still assure that the quality of consulting services is maintained and the safety of the public is not endangered. In these cases, Clients need to be technically knowledgeable and understand the limitations of the work received.

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3 *When Building Canada, Choose Quality and Avoid False Economies*, available URL: [http://www.acec.ca/pubs\\_download/Concept\\_oct05\\_en.pdf](http://www.acec.ca/pubs_download/Concept_oct05_en.pdf)

## 2.3 Misconceptions of QBS

Following are some of the common misconceptions about QBS and the countering facts.<sup>4</sup>

**MYTH:** Procuring consulting services based on qualifications takes significantly more time than awarding a Contract based on low-Bid.

**FACT:** An emphasis on qualifications as the prime selection criteria can substantially reduce the overall time to complete a Project.

**MYTH:** Government agencies should procure consulting services based on low-Bid to save taxpayers' money.

**FACT:** Low-Bid procurement does not save taxpayer money over the life of the Project because it often leads to increased change orders and Project maintenance costs. In addition, public health and safety – paramount concerns for public-sector Projects – are undermined by low-Bid procurement. Government agencies have a responsibility to obtain the high quality and safe design that is achieved through QBS.

**MYTH:** QBS eliminates price as a selection criterion. Purchasing/finance/internal auditors would not support a process that didn't include price as foremost.

**FACT:** Instead of being a dominant factor, price is considered during the later stages of selection, after the most qualified Consultants have been short-listed and a detailed scope of work has been jointly developed by the Owner and the Consultants. QBS gives the Owner and the Consultant an opportunity to negotiate a fee based on the scope of services being provided, not at the beginning of the process when the scope is poorly defined and not understood.

**MYTH:** If Clients are less technically knowledgeable about the Project, then they are at a disadvantage in negotiating fees with the Consultant.

**FACT:** QBS protects the interests of the Client while promoting a collaborative relationship with the Consultant. If a Client is concerned about negotiating fees, the two-stage selection system optimizes qualifications and price (see Section 3.7.2). After an initial pre-selection of Consultants is done, the runners-up are requested to present their proposals along with the price for Client's review. The price then becomes one of the evaluation factors and is assigned a weight depending on the relative significance of the price in a particular project.

## 2.4 Disadvantages of Consultant Selection Based on Price

Consultant selection based primarily on price has many disadvantages for both the Consultant and Client. A list of comments from various agencies on the disadvantages in using price as the primary selection criterion for consulting services include:<sup>5,6</sup>

- Undervaluing consulting services may result in higher life-cycle costs (design, construction, operation and maintenance, and capital costs), jeopardize the intended

4 Adapted from *Qualification-Based Selection (QBS). Why Value Outweighs Cost in the Selection of Engineering Services*, American Council of Engineering Companies.

5 *Selection and Use of Architects and Engineers*, Guideline for public agencies...

6 *When Building Canada, Choose Quality and Avoid False Economies*, available URL: [http://www.acec.ca/pubs\\_download/Concept\\_oct05\\_en.pdf](http://www.acec.ca/pubs_download/Concept_oct05_en.pdf)

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use of the work, and may endanger the well-being and safety of the public. It should be realized that the cost of consulting services represents less than 3% of the total life-cycle cost of a typical Project.<sup>7</sup>

- The least qualified Consultant may be employed rather than the best qualified, and that may jeopardize the public's best interest
- Places emphasis on minimum acceptable standards instead of adding value.
- Where price is a factor of competition it often takes a dominant role, hindering technical innovation and evaluation of alternative approaches, leading to missed opportunities for savings in construction and life-cycle maintenance costs.
- Promotes adversarial relationships between Clients and Consultants because under-Bidder Contracts are prone to epidemics of "extras" for scope omitted from the initial Bid.<sup>8</sup>

### 3 QBS PROCESS

QBS can be varied to satisfy the specific needs of a Client or a particular Project. It should, however, establish a basis on which the Client can objectively select the best qualified Consultant for a Project. Variations of QBS include the following:

- Sole-source selection from a pre-qualified list.
- Rotational selection from a pre-qualified list.
- Selection based on a submission for credentials; reference checks and/or interviews.
- Selection based on a proposal (which could vary from a simple letter to a multi-volume document with details of staffing, schedules, drawing lists, and various deliverables).

Clients should base their selection methods on their particular needs, the size, and type of each Project. Different QBS approaches should be considered for different Projects to achieve efficiency and effectiveness. This section outlines the QBS process including defining the scope of consulting services, assessing the qualifications of a Consultant, and negotiating a Contract. The QBS process is illustrated in Figure 1.

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7 Adapted from "Why Clients Use the Qualification-Based Selection (QBS) System When They Need the Services of Consulting Engineers", Consulting Engineers of Alberta, year?.

8 *Retaining the Services of a Consulting Engineer: The Only Approach*, Association of Consulting Engineers of Canada.

9 Adapted from *Selecting a Professional Consultant. A Best Practice by the National Guide to Sustainable Municipal Infrastructure (InfraGuide)*,

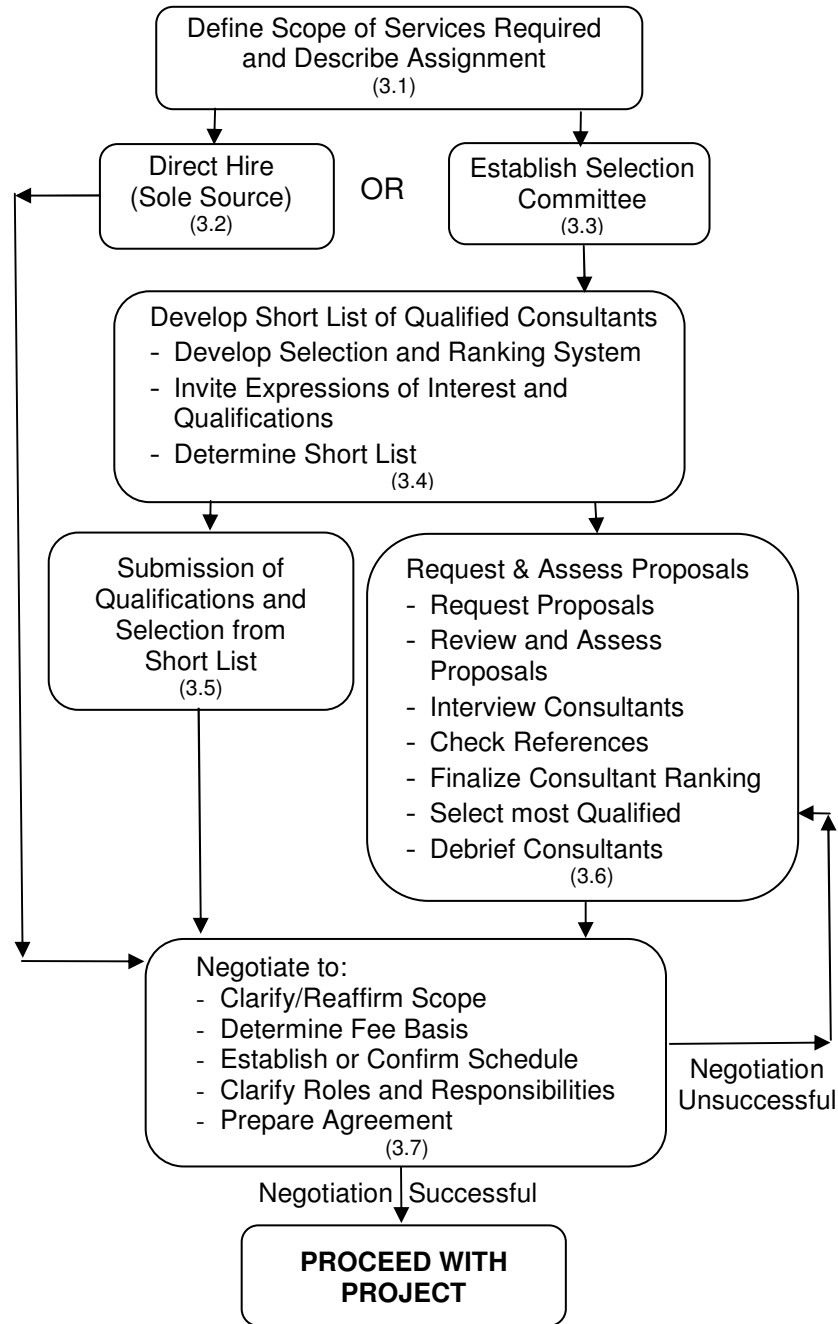


Figure 1 - Qualification Based Selection Process

### 3.1 Define Scope of Services Required

The services provided by Professional Members range from technical or specialist consulting, to full service consulting, to the design, procurement, construction, ownership and operation of facilities. The scope of consulting services that APEGGA members provide includes, but are not limited to, the following:

- Consultative and Advisory Services

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- Engineering, Geological or Geophysical Services of Defined Scope
  - Engineering, Geological or Geophysical Services on Comprehensive Projects
  - Geological/geophysical survey design, data acquisition, data processing and interpretation for resource exploration and geotechnical and environmental applications
  - Resource evaluation
  - Conceptual and Pre-Design Services
  - Design Services
  - Contract Administration and Technical Review Services during Construction
  - Resident Geological, Geophysical or Engineering Services during Construction
  - Post Construction Services

A detailed discussion of these services is provided in Appendix A of the APEGGA Guideline for the *Development of Consulting Rate Structures and Contracts*.

Prior to selecting a Consultant, a clearly stated description of the assignment and terms of reference should be prepared. This will provide a solid basis for both the Client's own understanding of requirements and the Consultant's preparation of a submission. Emphasis should be on describing the Client's objectives rather than specifying a particular methodology or technique, unless this relates to other components of the Project.

The description of the Project should include the following:

- A clear statement of the Client's objectives and needs.
- The physical magnitude and resource requirements of the Project, including specific services and expertise to be provided by the Consultant. Special or unusual factors or conditions affecting the assignment should be identified.
- A statement of the input, information, expertise, and other support provided by the Client. Special services provided by the Client that need to be coordinated with members of the Project team should be clearly noted.
- A time schedule showing the Client's requirements for each major phase of the Project including the Consultant selection process.
- The basis of evaluation in the Request for Proposal (RFP) documents. This will help focus the Consultant's emphasis in the areas critical to the Client.
- When deemed appropriate, an outline of the Client's budget for the assignment and/or Project.

### **3.2 Direct Hire (Sole Source) of Known Consultant**

Depending on circumstances, it may be appropriate to hire known Consultants directly based on their qualifications to do the work. This practice is often referred to as "direct hire" or "sole source" selection.

Retaining a known Consultant is suitable when the Client has an existing and successful relationship with one or more Consultants. This arrangement is appropriate for services in specific areas of professional practice where the Client's need for service continues or repeats itself from year to year. For small Projects the Client's time to prepare and

evaluate proposals is not warranted, and the direct cost to the Consultant in answering a proposal call can be more than the fee for the Project. There may be few Consultants with the capability to do the work or the Client may have a predisposition to hire one Consultant because of its capabilities. In such cases it is suitable to sole-source the work from a preferred Consultant or to rotate the work amongst a list of preferred and pre-qualified Consultants.

Some advantages of sole sourcing a known Consultant are the following:

- The Consultant has knowledge of past Projects, special Client requirements, and has the necessary background and information to save time without compromising quality.
- The Client avoids the formal selection process and avoids having to re-establish the basis for an effective working relationship for each Project.
- A general understanding of an appropriate fee basis is established, so fees for each Project can be agreed to with a minimum of negotiation.
- There is better service and more innovation – not limited by the defined terms of reference in Request for Proposals (RFP).
- The cost of preparing proposals can be avoided with the differential passed onto the Client.

In some cases, repeated selection of the known Consultant results in the creation of a formal “alliance” agreement with the Client. The alliance arrangement benefits the Client because of the greater predictability and avoidance of the expenses and unknowns of the selection process. When entering into this type of relationship with the Consultant, the Client should be aware of the following:

- The Consultant faces no competition and this may lead to complacency.
- The Consultant may lack the necessary skills, which may be available elsewhere on the market.
- The alliance agreement may limit the ability of the Client to seek services of other Consultants.

This method of Consultant selection usually leads to stable relationships and successful Projects. The Client and Consultant may wish to re-evaluate the relationship and service at regular intervals.

### **3.3 Selection Committee**

In some cases a more detailed QBS process may be needed if the Client does not have an ongoing relationship with a Consultant, wishes to assess the capabilities in the market, or needs services outside the competence or specialization of their usual Consultant(s). This will require establishing a selection committee, developing a short list of qualified Consultants, and requesting and assessing proposals.

The size and composition of the selection committee should reflect the complexity of the Project and the availability of Client representatives who are qualified to evaluate the proposals. It should comprise of one or more Persons representing a cross section of experience and judgment with respect to the selection criteria and the specific Project. In circumstances where appropriate qualifications are not available in-house, the Client should engage the services of an outside advisor to help in the selection. In any case,

the chair of the selection committee should be the official liaison with all Consultants who made submissions to ensure consistency in the selection process.

In going through the selection process, the committee should consider the following principles: required characteristics of the Consultant (qualifications, quality service, innovation); ability to develop productive relationship with the Consultant; respect for the Client's intellectual property; openness and transparency of the process; and efficiency, effectiveness, and flexibility of the process.

### **3.4 Develop Short List of Qualified Consultants**

A list of Consultants who appear to be qualified for the assignment should be prepared. This may be accomplished in a variety of ways depending on the size and sophistication of the Client organization. The following methods can be used:

- Referrals - from contacting other Clients who have undertaken similar Projects.
- Standing offer or extended partnership – with Consultants who submit qualifications and fees on annually or biannually basis.
- Obtaining names from publications on Alberta Consultants, such as the Alberta Consulting Engineering Directory, available from the Consulting Engineers of Alberta.
- Request for Proposals - to solicit expressions of interest outlining technical credentials and experience through local or regional advertising. A submittal of credentials to be used for selecting a short list of Consultants would include technical credentials and experience of the Consultant and its personnel. Typically, this expression of interest should be a three to five page letter submission.
- Maintaining a roster/list of Consultants and the areas of professional practice in which they are qualified.

### **3.5 Submission of Qualifications and Selection from a Short List**

A Client may not be aware of which Consultants have the best expertise to handle a specific Project. Then it is appropriate to ask for credentials from a select group of Consultants. The Client should review the qualifications and develop a short list, do reference checks, and interview the Consultants if appropriate. Refer to the Appendix for sample reference and interview questions. Then, the Client should negotiate with the most qualified Consultant.

### **3.6 Request and Assess Proposals**

Where it is not appropriate to select a qualified Consultant using 3.2 or 3.5, proposal submissions should be requested. Since preparing proposals can be costly and time consuming for both the Client and the Consultant, proposals should be used with discretion.

The amount of detail in the RFP should reflect the complexity of the work and the Client's requirements. The process of selecting a Consultant based on a proposal may include some or all of the following steps: request proposals, assess proposals, review proposals, interview Consultants, check references, and finalize Consultant rankings.

Clients should recognize that the quality of the RFP governs the quality of the proposals received. A well-detailed RFP will result in clarity in the required services, work plan and scope. Ambiguities lead to proposals with a wide range of proposed services, work plans and scope. When developing a proposal and a proposal evaluation plan, the Client needs to recognize all the steps required prior to calling proposals.

The larger and more complex the Project, the more detailed the RFP terms of reference need to be. For highly technical, long, or complex Projects, it is sometimes advisable to hire a Consultant to write the RFP terms of reference and develop the proposal evaluation criteria. This can be a significant Project in itself.

Proposals to perform engineering, geological and geophysical services for Projects should include information to allow the Client to judge additional criteria outlined in Section 3.6.2. For complex Projects Clients may request that Consultants include additional information in their proposals. This information should be adequate to allow the Client to assess details of the Consultant's intended approach, methodology, implementation schedule, design philosophy, cost control, quality control and safety program.

The process of selecting a Consultant based on qualifications may include some or all of the following steps:

### **3.6.1 Request Proposals**

Normally proposals from between two to five Consultants are sufficient. The RFP should indicate the Consultants from which proposals have been requested. This is in both the interests of the Client and the Consultants. The list of invitees gives an indication of the Client's expectations. If acceptable to the Client, some of the Consultants might combine to form a stronger team to serve the Client's needs better by putting the most qualified people from two or more organizations together.

An RFP should contain a clearly stated description of the assignment and the terms of reference the Consultant may follow. An RFP should describe the selection process (i.e., two-envelope, two-stage – see Section 3.7.2), selection criteria, and the ranking system that may be used to evaluate the proposals (see samples in the Appendix). The RFP may also request information on the following:

1. The Consultant's understanding of the Project scope and objectives.
2. The names of the key technical staff to be involved in the assignment, along with information on the engineering, geological and geophysical disciplines in which they are proficient, areas of specialty and details of their experience.
3. Other commitments of the Project manager and assigned staff and the availability of other technical support staff and facilities.
4. A list and brief description of recent similar Projects undertaken by the Consultant and by the key staff including dates and references.
5. Company profile, confirmation of professional registration with APEGGA, and liability insurance.
6. A description of the methodology that will be used in the execution of the assignment.

7. A description of the implementation schedule, design philosophies, cost and quality control.
8. Other factors such as hours committed by specialists, key staff and overall time commitments to the Project as appropriate to the evaluation process of the Client.

### **3.6.2 Review and Assess Proposals**

In preparation for a meeting of the selection committee, each member of the committee should receive a copy of all the proposals. Each member should rank each proposal in accordance with the selection criteria and ranking system included in the RFP. The assessment process should be an appropriately formal, thorough, and equitable evaluation of Consultants' qualifications for the Project. Sample assessment forms are provided in the Appendix.

Six principal criteria should be considered in assessing a Consultant's qualifications to provide consulting services for a specific assignment:

1. Technical Credentials
2. Experience
3. Managerial Skills
4. Availability of Resources
5. Professional Integrity
6. Strategy for Project Execution / Methodology

#### **3.6.2.1 Technical Credentials**

The people providing the consulting services should have the education, training, and expertise to carry out the Project. To evaluate credentials, the Client should examine:

- Consultants' past services (consistent with the type of service sought)
- Qualifications of the staff:
  - Appropriate knowledge, skills, training, and experience for task at hand
  - Demonstrated creativity and innovation
  - Technical background
- Relevant corporate resources:
  - Reference information, data bases
  - Procedures
  - Relevant specifications
  - Equipment, systems – currency and appropriateness to task

#### **3.6.2.2 Experience**

The Consultant's proposed approach for the specific Project should be evaluated relative to:

- Relevant company Projects
- Relevant staff experience
- Varied challenges (demonstrating flexibility of technical and managerial approach)
- Successful application of needed technology
- Demonstrated continuous improvement (application of knowledge gained from past experience to enhance the specific Project).

### **3.6.2.3 Managerial Skills**

A successful Project requires that the Consultant have the level of managerial skills required for the Project. The Consultant should demonstrate capability in the following areas:

- Corporate / Project organization, coordination and management
- Communication skills, both written and verbal
- Procedures for controlling personnel-hours, schedule and Project costs

### **3.6.2.4 Availability of Resources**

The availability of a Consultant's resources will be affected by current and potential commitments. To determine the availability of resources, the Client should examine the Consultant's:

- Deployment of technical and managerial resources – percent committed to other Projects, potential for over-allocation
- Delegation of responsibility within the organization
- Other commitments during the Project, and how staff will be deployed on them
- Financial capacity and insurance coverage or insurability

### **3.6.2.5 Professional Integrity**

Members of APEGGA are required to conform to the *Code of Ethics*. They must enter into agreements with fairness and good faith and undertake only those assignments for which they are competent to perform by virtue of their training and experience.

To determine professional integrity, Clients should examine the Consultant's:

- Registration with APEGGA
- References from other Clients
- Character and professional stature
- Business reputation
- Business associations or obligations that may affect professional independence and objectivity with respect to the proposed assignment
- Record of claims and lawsuits
- Record of construction cost, claims, and change orders
- Record for completing assignments in a timely and cost-effective manner.

### **3.6.2.6 Strategy for Project Execution / Methodology**

The Consultant should have an understanding of the Project at hand, which includes the following:

- Comprehension of scope
- Awareness of Client needs
- Familiarity with Project site / environment

During the meeting of the selection committee, the individual member rankings for each of the proposals should be discussed to give each member the benefit of other opinions; no attempt should be made to develop a consensus at this stage.

### **3.6.3 Interview Consultants**

Consultant interviews provide each Consultant the opportunity to address and emphasize important items in their proposals. The interview provides the selection committee the opportunity to meet the Consultant's key personnel and to discuss specific issues. The interviews should be scheduled over a short time period to facilitate comparisons between proposals while details are fresh in the memory of selection committee members. Sample interview questions are given in the Appendix.

### **3.6.4 Check References**

Checking the references of Consultants provides confirmation of the Consultant's proposal and interview responses. Sample reference questions are given the Appendix.

### **3.6.5 Finalize Consultant Ranking**

Immediately following the Consultant interviews, the selection committee should meet to develop consensus on the ranking of each proposal. The ranking system should be designed to select a Consultant who will provide the services and expertise most suitable for the Project requirements. The ranking system should include the information gathered about the Consultant. Consultants should be given the basis of the evaluation in the RFP documents to ensure the Consultants put their emphasis in the areas most important to the Client.

If there are major differences in ranking that cannot be resolved within the committee, it may be necessary to seek clarification of some aspects of one or more Consultant proposals. Care should be taken to avoid giving one Consultant unfair advantage over the others if further questioning is necessary to complete the ranking. A sample summary ranking sheet is provided in the Appendix.

### **3.6.6 Select Most Qualified Consultant**

When the ranking has been finalized for all submissions, the chair informs the Consultant with the highest score. The selection is confirmed to all Consultants who made proposals.

### **3.6.7 Debrief Consultants**

In the interests of helping the industry to submit proposals suitable to the needs of their Clients, it is recommended that debriefing sessions be held with both the successful and unsuccessful Consultants. By explaining to the Consultants what was liked about their proposals, and where the strengths and weaknesses of their proposals were, Clients should get better proposals in the future. Care must be taken to ensure proprietary information and techniques of the various Consultants are not given out by the Client.

### **3.7 Negotiate with Selected Consultant**

Once the most qualified Consultant has been chosen, negotiation may begin on the scope and fee basis, schedule, clarification of roles and responsibilities, and terms of the agreement.

### 3.7.1 Clarify/Reaffirm Scope

At this point, the Client and Consultant will reaffirm the scope and ensure that all parties have clear understanding as to what is involved, identify and resolve ambiguities and acquire missing information. Refer to APEGGA's *Consulting Rate Structures and Contracts* for more thorough discussion of scope.

### 3.7.2 Negotiate Fee Basis

Once the scope has been reaffirmed, then the fees can be negotiated with the selected Consultant. This can be accomplished by three primary methods:

#### **Negotiation with selected Consultant**

In this system, the selection of the Consultant has been made (through any means). Then, the fee and scope may be mutually agreed upon through direct negotiation between the selected Consultant and the Client. If negotiations are unsuccessful with the highest ranked Consultant, then the Client may begin negotiations with the second ranked Consultant. Typically, this method applies to direct-hire (sole-source) or alliance Projects.

#### **Two-envelope system**

In the "two-envelope" system, once the Consultant has been chosen from the qualifications presented in the first envelope, the second envelope **of that chosen Consultant** should be the only one opened. At this point, both the scope and the price are reviewed and confirmed between the Client and the Consultant. If an agreement cannot be achieved, then the envelope of the second-ranked Consultant is opened, and the scope and price are confirmed. Once Consultant has been selected, the second envelopes of all remaining Consultants are returned to them unopened.

The two-envelop system may be less appropriate than a two-stage system in the following circumstances:

- When the prospective Consultants have been pre-qualified and their proposals are deemed comparable or equal, it may be considered reasonable to use the price as the final selection criterion.
- Two or more proposals may differ insignificantly in technical merits but be highly different in price. In such cases, the Client should achieve a better understanding of the nature of the differences. The price difference may result from different interpretation of the scope or assumptions made in pricing structure. Then, a clarification may be warranted.
- In other cases, though, materially the same scope may be priced differently because some of the prospective Consultants are able to mobilize cost savings by utilizing special project execution techniques, such as outsourcing of consulting services, use of advanced or proprietary technology, etc. These opportunities should be realized and, if acceptable to the Client, should not be neglected.
- For simple, small, routine, or low-budget projects, pricing of Consultant's services is a major consideration, sometimes comparable with the total installed cost of the project.

**Two-stage system**

In some cases, the “two-stage” system can be used. After the initial pre-selection of Consultants is done, the runners-up are requested to present their proposals along with the price for Client’s review. The price then becomes one of the evaluation factors and is assigned a weight (usually not exceeding 10%) depending on the relative significance of the price in a particular project. This process, however, still constitutes QBS because it is enacted among pre-qualified consultants only and the influence of the price on the final decision is limited.

**3.7.3 Establish or Confirm Schedule**

Scope, fees and schedule are interdependent. Schedule may be defined by: a specific Project start date and a substantial completion date (e.g., maintenance Contracts); scheduling conditions such as expiry dates/clauses, acceleration clauses, extension clauses, termination clauses; or be undefined – the schedule extends as long as is required to complete the Project.

Refer to APEGGA’s *Consulting Rate Structures and Contracts* for a more thorough discussion of schedule and timing.

**3.7.4 Clarify Roles and Responsibilities**

The role to be played by both the Client and the Consultant should be clearly defined while establishing the scope of the assignment and entering into a Contract. The Client will have responsibilities with respect to the planning, financing, provision of special services, a reasonable Contingency Allowance, and management or coordination of the Project. The Consultant will have responsibilities regarding the governing codes and regulations, which should not be restricted in any way that would prejudice protection of the public and/or the needs of the Client.

**3.7.5 Prepare Agreement**

Once the terms of the agreement have been negotiated the final agreement may be prepared. For a detailed discussion on preparation of the agreement, refer to APEGGA’s *Guideline for Consulting Rate Structures and Contracts*.

**4 OTHER ETHICAL ISSUES**

A number of ethical issues may arise when selecting an engineering, geological or geophysical Consultant. A discussion of some of these issues follows.

**Bidding / Underbidding for Services**

Attempts by Professional Members to supplant the competitors by pricing their services below their fair market value are a serious threat to the well-being and safety of the public. This is also detrimental for the prestige of the professions. Such practices may contravene the *Code of Ethics* and may be subject to disciplinary action by APEGGA.

**Price Shopping**

Price shopping occurs when the Client discusses the proposals and/or pricing with other Consultants in the hope of getting one or more of the Consultants to reduce their price. This may put the public at risk, devalues the consulting services, and defeats an open and honest relationship. For Clients and Consultants, such practices may contravene the *Code of Ethics* and may be subject to disciplinary action by APEGGA.

**Selecting/Replacing a Consultant Mid-Project**

Sometimes, the need arises to replace the Consultant in the middle of the Project. Whatever the reason, a replacement should be found as soon as possible so that the safety of the public is not jeopardized during the switch. Clients and all involved Consultants have ethical obligations to each other and to the public. Refer to APEGGA's *Guideline for Ethical Practice* for additional information.

## **APPENDIX – QBS ASSESSMENT FORMS AND QUESTIONS**

The content and complexity of any QBS assessment must complement the Project to which it is applied. The Person or Committee who will be selecting the Consultant should determine the selection process, develop the assessment criteria, and determine the relative weighting of the criteria in advance. These assessment criteria should accompany any RFP.

Sample forms are provided to assess Consultants' proposals, interview the Consultants, and/or check the Consultants' references. The assessment scores from all of the Consultants may then be compiled on a summary form to arrive at the overall ranking of the Consultants

**QUALIFICATIONS ASSESSMENT FORM - Sample I**

This Qualifications Assessment Form is designed for a relatively simple Project involving several disciplines and functions. Rate each Consultant's proposal in the categories listed below. Multiply the Weight (%) by the Consultant Score, then sum to arrive at the Total.

<b>Assessment Criteria</b>	<b>Weight %</b>	<b>Consultant Score (1 to 5)</b>	<b>Weight X Score</b>
<b>Technical Credentials</b>			
Personnel Credentials	_____	_____	_____
Key Personnel	_____	_____	_____
<b>Experience</b>			
Corporate Project Experience	_____	_____	_____
<b>Managerial Skills</b>			
Project Management Experience	_____	_____	_____
Organization and Cost Control	_____	_____	_____
<b>Availability of Resources</b>			
Key Personnel	_____	_____	_____
Support Staff and Services	_____	_____	_____
Financial Capacity	_____	_____	_____
<b>Professional Integrity</b>			
Professional Independence	_____	_____	_____
Business References	_____	_____	_____
<b>Other</b>			
Innovation	_____	_____	_____
Value	_____	_____	_____
Price [if two-stage system is used ]	_____	_____	_____
Total Score			_____

Note: Items under **Other** should be selected to reflect the special needs associated with a specific Project. Items such as innovation, value etc. can be included. The weight percentage should be assigned after the items to be evaluated are established.

**QUALIFICATIONS ASSESSMENT FORM - Sample II<sup>9</sup>**

Rate each Consultant in the ten categories listed below. To arrive at the Total, multiply Rating (highest = 5, lowest = 1) by Weight (highest = 10, lowest = 1). Add all totals to determine the Grand Total. Based on this model, 500 points is the maximum possible total, assuming all categories were weighted at "10" and the design professional received a "5" rating in each category. Categories may be tailored as appropriate to the particular Project.

<u>Category</u>	<u>Rating</u>	X	<u>Weight</u>	=	<u>Total</u>
<b>1) Project Requirements:</b> (Consultant's analysis, preparation and interest level)	_____	X	_____	=	_____
<b>2) Design Approach/Methodology:</b> (Consultant's or key personnel's creativity and problem-solving abilities)	_____	X	_____	=	_____
<b>3) Key Personnel and Roles:</b> (Qualifications and professional skills of key Personnel)	_____	X	_____	=	_____
<b>4) Previous Experience, Consultant:</b> (Related Projects)	_____	X	_____	=	_____
<b>5) Previous Experience, Key Personnel:</b> (Related Projects of key personnel)	_____	X	_____	=	_____
<b>6) Resources and Ability:</b> (Quality and importance of Consultant or in-house support services)	_____	X	_____	=	_____
<b>7) Technical Project Management:</b> (Abilities in technical functions, such as Project cost controls, construction observation, and time scheduling)	_____	X	_____	=	_____
<b>8) Responsiveness To Owners' Concerns:</b> (Consultant's ability to communicate and form successful working relationships)	_____	X	_____	=	_____
<b>9) Method Of Compensation:</b> (Consultant's method of determining compensation. Compensation proposals are NOT required.)	_____	X	_____	=	_____
<b>10) Other Relevant Issues:</b>	_____	X	_____	=	_____
<b>Grand Total</b>	_____	X	_____	=	_____

9 *Public Owner's Design Services Workbook: QBS – Qualifications Based Selection. A Step-by-Step Process for Selecting Architectural, Engineering, and Land Surveying Services. A Public Service of AIAMo, ACEC/MO and MSPE. Available URL: [www.cecmo.org/acecmo.nsf/WebFiles/QBSManual/\\$File/QBS%20Manual.pdf](http://www.cecmo.org/acecmo.nsf/WebFiles/QBSManual/$File/QBS%20Manual.pdf)*

**SAMPLE INTERVIEW QUESTIONS**

Clients may ask these<sup>10</sup> or other interview questions.

1. Have you worked on similar Projects before?
2. Have you worked successfully with similar Clients?
3. What is your education and training, any awards or professional recognition?
4. Will you utilize any sub-consultants; if so, what is their experience? Have you worked with them before?
5. What people will be assigned to work on this Project and will they be fully committed to the Project or will they share their time with other assignments?
6. What is your experience working with state and federal agencies (regulatory and funding) that will be involved in this Project?
7. What special facilities and/or equipment will you bring to this Project? (i.e., software, GIS)
8. What are your in-house procedures for quality control?
9. Have you developed an approach to this Project, if so, what is it?
10. What are critical decision points or milestones in your approach? How will you manage them?
11. What innovative or alternative technologies have you employed in the past for similar Projects? How did you get regulatory approval?
12. What is your method and track record on estimation of costs?
13. What are your ideas on how money can be saved on design and construction?
14. How do you propose to work with the community during this Project?
15. How do you propose to provide status reports to the community and on what frequency?
16. What is your current workload and how will our Project fit into this load?
17. How do you propose to manage construction activities?
18. What is your experience with preventing and resolving contractor claims?
19. How do you track contractor pay requests?
20. How do you complete construction close out?

**INTERVIEW EVALUATION SCORE SHEET**

**CONSULTANT**

Overall Impression of Competence and Technical Credentials  
 Experience with Similar Projects  
 Managerial Skills, Corporate/Project Organization, Communication  
 Availability of Resources

**Very Good = 3    Average = 2    Poor = 1**


10 *Owner Manual for Qualification-Based Selection (QBS): A Process for the Selection of Design Professionals by Public Owners.* Professional Technical Advisory Board, Albuquerque, NM: Revised September 2004. Sponsored by American Consulting Engineers Council of New Mexico, New Mexico Society of Professional Engineers, New Mexico Society of Architects, American Institute of Architects - Albuquerque Chapter, New Mexico Professional Surveyors, New Mexico Society of Landscape Architects. Available URL: [http://www.nmenv.state.nm.us/cpb/PTAB\\_Manual%20Rev10-18-04.pdf](http://www.nmenv.state.nm.us/cpb/PTAB_Manual%20Rev10-18-04.pdf)

Guideline for Selecting  
Engineering, Geological and Geophysical Consultants

**SAMPLE REFERENCE QUESTIONS**

The reviewers or chair of the selection committee should use this form<sup>11</sup> or a similar form to record and assess reference information on each Consultant. Multiply number of questions by 5 for the maximum score, as appropriate.

**Consultant** \_\_\_\_\_ on which the reference check is being conducted.

**REFERENCE INFORMATION:**

Owner: \_\_\_\_\_ Project Referenced \_\_\_\_\_  
 Address \_\_\_\_\_ Person Contacted: \_\_\_\_\_  
 \_\_\_\_\_ Phone: \_\_\_\_\_

**SAMPLE QUESTIONS TO BE ASKED:**

1. What was your Project? \_\_\_\_\_
2. When was it completed? \_\_\_\_\_
3. Did the Consultant above do the work? \_\_\_\_\_
4. What did they do for you? \_\_\_\_\_

*Design work, construction coordination, studies, other (specify)*

	5	4	3	2	1
	Excel	Good	Avg	Fair	Poor
5. Who was the staff person assigned to work with you on this Project? Were you satisfied with his/her work?					
6. Was the Project started on schedule?					
7. Was the Project completed as planned?					
8. Was the Consultant knowledgeable and qualified to do the work?					
9. Was the Consultant responsive to your feedback? Easy to communicate with?					
10. Did the Consultant add value to the project?					
11. Did the Consultant treat you as a Client fairly and respectfully?					
12. Other questions...?					
<b>TOTALS</b>					

11 Owner Manual for Qualification-Based Selection (QBS): A Process for the Selection of Design Professionals by Public Owners. Professional Technical Advisory Board, Albuquerque, NM: Revised September 2004. Sponsored by American Consulting Engineers Council of New Mexico, New Mexico Society of Professional Engineers, New Mexico Society of Architects, American Institute of Architects - Albuquerque Chapter, New Mexico Professional Surveyors, New Mexico Society of Landscape Architects. Available URL: [http://www.nmenv.state.nm.us/cpb/PTAB\\_Manual%20Rev10-18-04.pdf](http://www.nmenv.state.nm.us/cpb/PTAB_Manual%20Rev10-18-04.pdf)

### SAMPLE SUMMARY RANKING FORM

The chairperson of the selection committee should use this form to compile the interviewer/reviewers' assessments of the Consultants. Enter the totals for each Consultant as assessed by individual interviewer/reviewer (per Sample I, Sample II, Interview or Reference Check). Then divide each Consultant's Grand Total by the total number of interviewers/reviewers to arrive at the design professionals' average scores. The highest average score will indicate the highest ranked Consultant.

**Combined Grand Totals  
For Each Consultant**

Interviewer/ Reviewer	Consultant A	Consultant B	Consultant C	Consultant D	Consultant E
1	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Combined Grand Total	_____	_____	_____	_____	_____
Divided by # of interviewer/ reviewer = Average Score	_____	_____	_____	_____	_____