

'Best Practice' for hiring engineers

Experts emphasize qualifications and long-term savings for taxpayers

By Harold Murphy, Technical Advisor, InfraGuide

What is the best way to hire an engineer for an infrastructure project? Leaders in the public sector, such as provincial governments, municipalities and public utilities now have the answer. The National Guide to Sustainable Municipal Infrastructure (InfraGuide) has just released a *Best Practice for Selecting a Professional Consultant*. This Best Practice promotes the principles of Qualifications-Based Selection (QBS) rather than price-based selection as the best method for selecting professional engineers and other consultants. This is interesting – and encouraging – because this document was written predominantly by the public sector for the public sector.

The Best Practice, which was developed using extensive interviews and research, suggests that many infrastructure agencies do, in fact, recognize that QBS encourages innovation, life-cycle cost savings and sustainability. Supported by this new Best Practice, public officials will now have the necessary ammunition to make meaningful and effective changes to the way they invest in infrastructure.

InfraGuide is a collaboration of the Federation of Canadian Municipalities, Infrastructure Canada, the National Research Council and the Canadian Public Works Association to help municipalities make informed decisions and promote sustainable infrastructure investment. InfraGuide is both

a national network of experts and a growing collection of published best practice documents for use by municipal decision makers and technical personnel in the public and private sectors. InfraGuide has published over 50 Best Practices to date.

Sustainability and long-term value for taxpayers

The Best Practice is intended to encourage creativity and innovation that can result in better value to taxpayers by selecting the right engineering team. In developing the current Best Practice for procurement, InfraGuide concluded that the long-term savings that can be gained from selecting engineering services using the principles of QBS are far more significant than short-term savings provided by the lowest-price design. InfraGuide has recognized that improving public infrastructure is a long-term and sustainable investment in a municipality's economic, social and environmental quality of life.

Decisions made during project planning and design have ramifications over the entire service life of a project. The public will have to live with those decisions for decades, even generations. An appropriate investment in professional services at the onset of a project can potentially reduce capital, maintenance and operating costs while improving reliability and extending service life. Conversely, reducing that investment at the design stage can result in significantly higher capital, operating and maintenance costs throughout the service life of the project.

Benefits already being realized

Procurement methodologies consistent with the Best Practice proposed by InfraGuide are already in use by many public sector organizations throughout Canada and the US, including the City of Calgary, the City of St. John's and the City of London. "Selecting the right team based on qualification not lowest price ultimately provides the best



“The Best Practice focuses on long-term value that results in savings for the taxpayer.”

“With the
**InfraGuide
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value and the best return on investment,” says **Pete Steblin**, General Manager of Environmental & Engineering Services for the City of London.

InfraGuide’s Best Practice is also important to the consulting engineering sector, allowing engineering firms to provide the necessary resources to meet their client’s expectations, to innovate and to add value. To taxpayers, this means better services and savings.

It is time to take action

Still, in order for taxpayers to realize the benefits of the Best Practice, the public sector must demonstrate leadership by adopting the Best Practice. For its part, the consulting engineering sector will then have the necessary resources to ensure that taxpayers receive the best possible return on infrastructure investments.

Our economic, social and environmental quality of life is directly related to the state of our public infrastructure. Therefore, when public sector infrastructure experts from across Canada conduct one of the most extensive reviews of procurement practices ever undertaken in this country, we should take notice. When they make such strong and specific recommendations, we should act – and implement the *InfraGuide Best Practice for Selecting a Professional Consultant*.

Accessing the ‘Best Practice’

Electronic versions of the *Best Practice for Selecting a Professional Consultant* are available free of charge at www.infraguide.ca and click on “Published Best Practices” (Registration may be required and will be free for the next several months).

For more information on the implementation of the *InfraGuide Best Practice*, please contact ACEC President **Claude Paul Boivin** at cpboivin@acec.ca or 1-866-236-0569. ☎

EXECUTIVE SUMMARY

“It is unwise to pay too much, but it is worse to pay too little. When you pay too little, you sometimes lose everything because the thing you bought was incapable of doing the thing you bought it to do.” - John Ruskin (1819-1900)

This quotation captures the reality faced by public officials engaged in commissioning the services of professional consultants. Often, cheapest price gets mistaken for best value. The need to reintroduce the concept of value to consulting procurement was the impetus for this document.

The best practice was written for four primary audiences:

Decision-makers — senior staff responsible for administrative policy and processes;

Technical staff — those responsible for implementing policy and administrative processes;

Procurement Staff and Auditors — staff responsible for conducting or monitoring procurement processes; and

Policy-makers — primarily elected officials.

Adoption of this best practice will create a common ground of understanding between professional consultants and governments seeking their services. The knowledge that a fair and transparent process is being used, in which all proponents are given proper consideration, should contribute to reducing the tendency for consultants to seek advantage by lobbying senior and elected officials.

There is a large body of knowledge on worldwide practices to select professional consultants. The most common method recommended is qualifications-based selection (QBS). This procedure facilitates selection of professional consultants based on their qualifications, experience and competence as it relates to a particular assignment.



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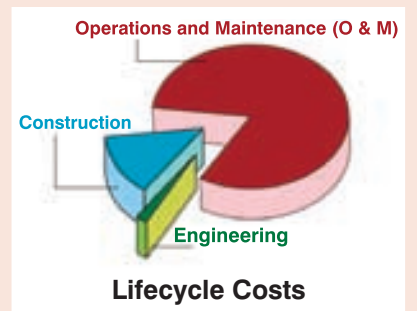
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The *United States Brooks Act*, enacted in 1972, requires all federal procurement of architectural and engineering services to incorporate QBS. Forty-seven states and many local jurisdictions have adopted similar legislation since.

Several US studies are also referenced that support QBS over traditional price-based methods, including professional consulting services.

In Canada, many professional bodies recommend qualifications-based methods, but the process is not widely used. Federal, provincial and local governments primarily use price-based methods.



The procurement of goods and services in the Canadian public sector is most often obtained through a public tendering process. Government purchases are guided by policies designed to ensure transparency and value. The product or service is described in detail in a tender document and sealed bids are invited. The lowest bid normally receives the contract.

This approach is not appropriate for professional consulting services because it is frequently not possible to provide sufficient detail about the services required to ensure that all firms are bidding on equal footing. This is because part of the undertaking may be an exploration for the most appropriate solution.

The most appropriate solution is not necessarily the cheapest design solution. Furthermore, the consultant's ability to devise the most appropriate solution depends on expertise, training and, most importantly, experience. It follows that purchasers wishing to identify the most appropriate solution should implement a selection process that:

- Leads to the selection of the individual or team that is best qualified to undertake the particular assignment, and

- Employs the experience of this team to develop the scope of services to ensure that all opportunities for adding client value are provided for within the project.

This approach does not preclude the consideration of price in the process. Rather, it encourages consideration of price within a more meaningful context by bringing the fee into the equation after the scope of work has been jointly established and agreement reached with the top-ranked firm.

Understanding the relative contribution to overall costs of 1) engineering required to solve a problem, 2) the cost of construction, and 3) the future operation and maintenance costs of the solution, underlines why it is so important to start with the “right” or “best” consultant.

Principles
Qualifications
Quality
Innovation
Relationships
Fairness
Respect for intellectual property
Efficient and Effective
Flexibility
Non-predatory pricing
Sustainability

“Engineering design” typically represents 1 to 2 percent of the overall lifecycle cost of a project, with construction accounting for approximately 6-18 per-

cent of the cost. All the rest—80-93 percent of the lifetime asset cost—is accounted for by operations, annual and capital maintenance and decommissioning.

This cost relationship is apparently well understood by engineers working in the public sector, but its consequences may not be applied during the tendering process. The appeal of the lowest-price design solution appears to override the value that can be gained from considering lifecycle costs.

Best Practice principles

This Best Practice incorporates principles that ensure a sound and fundamentally fair process and one that will achieve the goal of adding the greatest value for the client.

Recommended Best Practice

The recommended consultant selection practice is a competitive qualifications-based process that is principle-based and meets the following objectives:

- selecting a consultant who is best qualified for a specific project, and
- providing a client the benefit of the consultant’s skill, knowledge and experience to jointly develop a scope of services that considers all opportunities for adding value.

Recommended Best Practice
Request for Qualifications
Evaluate and Rank Consultants
Request for Proposals
Select Highest-Ranked Consultant
Define Scope
Negotiate Fee Agreement
Award Assignment


The recommended method encourages clients to view consultants as “trusted advisors” who share their priorities and interest in achieving the best outcomes for their project.

The best practice diverges from price-based selection practices in that it frees consultants to demonstrate how they can add maximum value to a client’s project rather than focusing on how to minimize their fees to ‘win’ an assignment.

Implementation challenges

Municipal engineers and other practitioners knowledgeable in the long-term implications of selecting the most qualified consultant for technical assignments generally support the recommended best practice intellectually and philosophically. They understand that selection on the basis of lowest price may not achieve the best outcome. However, when working in government, it is much easier to justify objectivity on the basis of quoted fees (lowest price) than on the basis of qualitative assessment (qualifications-based selection).

Satisfaction with present price-based methods in Canada suggests leadership to adopt this best practice will not generally come from within municipal or other governments. Only when some jurisdictions begin to use the best practice, and promote its benefits, will others do so. The first step to convincing municipal and other governments of the benefits of applying the recommended method will be a broad initiative that enlists the support of those jurisdictions that have used and benefited from its use, as well as industry, professional and educational leaders. §



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TRANSPORTATION MATTERS.

A commitment to building a safe, modern and reliable transportation system is a commitment to a more prosperous and competitive economy, to a better environment and to safer roads and highways for all Manitobans. With Canada now facing a total transportation and infrastructure deficit of more than \$120 billion, it is clear that municipal and provincial governments cannot fix the problem alone. What is required at the federal level is a National Infrastructure Program and a commitment to long-term, incremental and sustainable funding. The Manitoba Heavy Construction Association will continue to press governments to make transportation and infrastructure a top priority.

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