

Getting the Most Bang for your Engineering Bucks

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ACEC MA-QBS Committee and Panelists

Carrie Lavalley, Deputy Administrator and Chief Engineer at MassDOT

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- Business Association – Engineering, Land Surveying, A/E Firms in MA
- 120 Member Firms – engineers, land surveyors, geologists, LSPs, planners, scientists, architects, landscape architects, related design professionals, & staff
- ACEC National – federation of 51 state Member Organizations;
> 5,000 firms representing; > 500,000 employees



Purpose of today's presentation

- Explaining two procurement methods for engineering services
- Relating the procurement methods to the outcome of the project



Topics of today's presentation

- Procurement Methods
- Qualifications Based Selection
- Procurement Best Practices
- Procurement Checklist
- Federal IIJA Procurement Laws

Procurement Methods



Low Bid or Best Value



Qualifications-Based Selection (QBS)

Low Bid/Best Value Process



PROJECT OWNER
PREPARES SCOPE OF
WORK



REQUEST FOR
PROPOSAL IS ISSUED



LOW BID -
SELECTION OF FIRM
IS BASED SOLELY ON
CHEAPEST COST



BEST VALUE -
SELECTION OF FIRM
IS BASED ON
CHEAPEST WITH
QUALIFICATIONS

Low Bid

When firms compete on price



Panel Question

Why not ask for prices from three qualified firms (Best Value)?

- Each firm will offer a price based on its own interpretation of the scope and not necessarily that of the owner. Each price, therefore, represents a unique and unilateral scope.
- Since most equally qualified firms have similar labor cost, overhead, and profit structures, they may exclude scope to be price competitive.



MassDOT Procurement Practices

- Federal Law
 - Public Law 92-582 (“Brooks Act”)
- State Law
 - MGL Chapter 7C, Section 58
- MassDOT Standard Operating Procedures
- Architects and Engineers Review Board

A&E Review Board

- Members and Meetings
- Prequalification
- Selection Procedures
 - RFR
 - Streamlined

Prequalification of Architectural & Engineering Firms

MassDOT routinely prequalifies Architectural and Engineering Firms (A&E) to provide services in various A&E discipline categories.

Resource – Prequalification Information

[Prequalification-of-architectural-engineering-firms](#)

Consultant Procurement

- QBS
 - Planning and Preparation
 - Selecting a Consultant
 - Negotiating a Contract
- Planning and Preparation
 - Develop Procurement Plan
 - Develop Scope of Services, Schedule and Budget
 - Prepare RFR

Resource – [MassDOT Standard Scope of Services Template](#)

Consultant Procurement

- Selecting a Consultant
 - Provide Public Notice of the RFR
 - Receive and Evaluate Responses
 - Rank and Short-List
 - Conduct Interviews
 - Final Rank, Select and Notify
- Negotiating a Contract
 - Develop Final Scope of Services and Schedule
 - Request Fee Proposal
 - Negotiate the Fee and Finalize the Scope
 - Execute Agreement
 - Provide Post-Selection Feedback

What is QBS?

A procedure for selecting and retaining design professionals (Engineers, Land Surveyors and Architects).



A competitive procurement approach that emphasizes quality and value.



Scope and fee discussions occur after the initial selection is made.



What Does QBS Evaluate?



EXPERIENCE



EXPERTISE



TRAINING



AVAILABILITY



REFERENCES

Why QBS over other procurement methods?



QBS saves **money**



QBS saves **time**



QBS **simplifies** complex projects



QBS **delivers** innovation



QBS **drives** procurement

Why QBS for Professional A/E Services



Less than 10%
of *total* life
cycle cost



Not a “tangible
commodity”



Creative by
nature



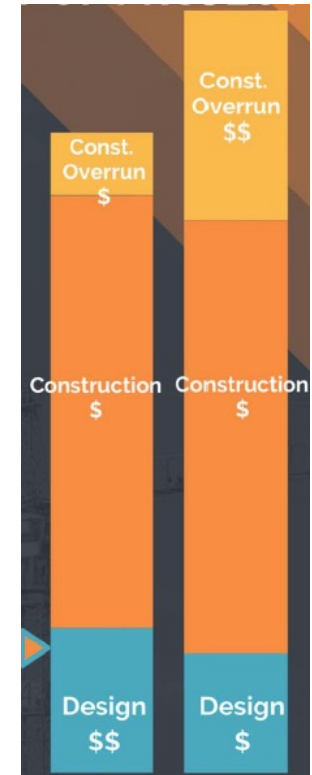
Critical thinking
skills,
intellectual
effort



Involves investigation,
analysis and research

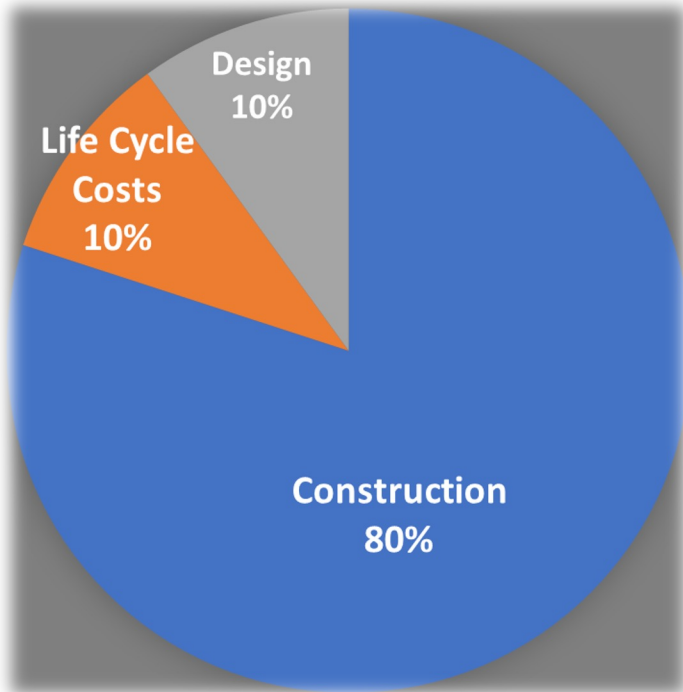


Previous
experience is
highly
beneficial



These are *not* “bid” items and have a significant impact on construction costs as well as operations & maintenance over the lifetime of the facility

QBS Saves Money



- Design services are the most important factor in determining a project's overall cost
- Bidding design services may save you money in the short term but result in more costs in the long term
- QBS reduces construction change orders an average of 7% over other procurement methods
- Overall project cost growth of QBS projects was lower than the price-bid projects.

QBS Saves Time

KEY FACTS

QBS procurement results in fewer project delays and improves the likelihood of owner satisfaction with the overall project. QBS outperforms the national average by keeping projects on schedule.



- About half (48%) of QBS projects met all construction milestones, 50% more than non-QBS
- In a review of 76 design-build projects in the US, QBS was found to have the **lowest cost growth** and the **fastest construction speed** when compared to sole source, best value, and low bid.
- Teams with greater experience working together, and in the same sector, consistently produced documents that resulted in **fewer delays during the construction** process.
- There is a strong association between the use of QBS, the quality of construction documents developed by the design team, and the final cost and schedule performance.

QBS Simplifies Complex Projects

KEY FACTS

QBS ensures complex projects have the best talent by engaging experienced, stable design teams.

- As the complexity of a project grows, the positive impact of using QBS grows along with it.
- Projects with community involvement, social components, and additional community features require design firms with broader knowledge and understanding, not just the best price.
- Less qualified and experienced firms might have a harder time balancing these complicated social factors, thus elevating the benefits of using QBS procurement to select more qualified, experienced, and ultimately successful design firms.
- QBS can encourage engineering firms to team in ways that provide the owner with the greatest set of qualifications to successfully complete the project.

QBS Delivers Innovation

KEY FACTS

QBS procurement for design services produces innovative solutions. When firms have greater opportunity to explore innovations, they can produce better outcomes for clients. QBS enables innovation because price is not the only driving factor.

- A recent study showed that when QBS was used, projects that mentioned complexity either in terms of physical challenges or in terms of social or political challenges were consistently higher in terms of innovations.
- Direct cost and schedule benefits, indirect benefits of reduced management issues, and increased innovation are why QBS demonstrates a clear benefit when applied across a series of project types and geographic regions.
- Innovation is an indirect measure of project complexity as more complex projects often require more innovative solutions to address those specific project challenges. Innovation is a measure of how design firms approach a project in terms of the flexibility of solutions they may bring to the project.

Panel Question

What are some recent project examples that benefited from QBS and how?



Panel Question

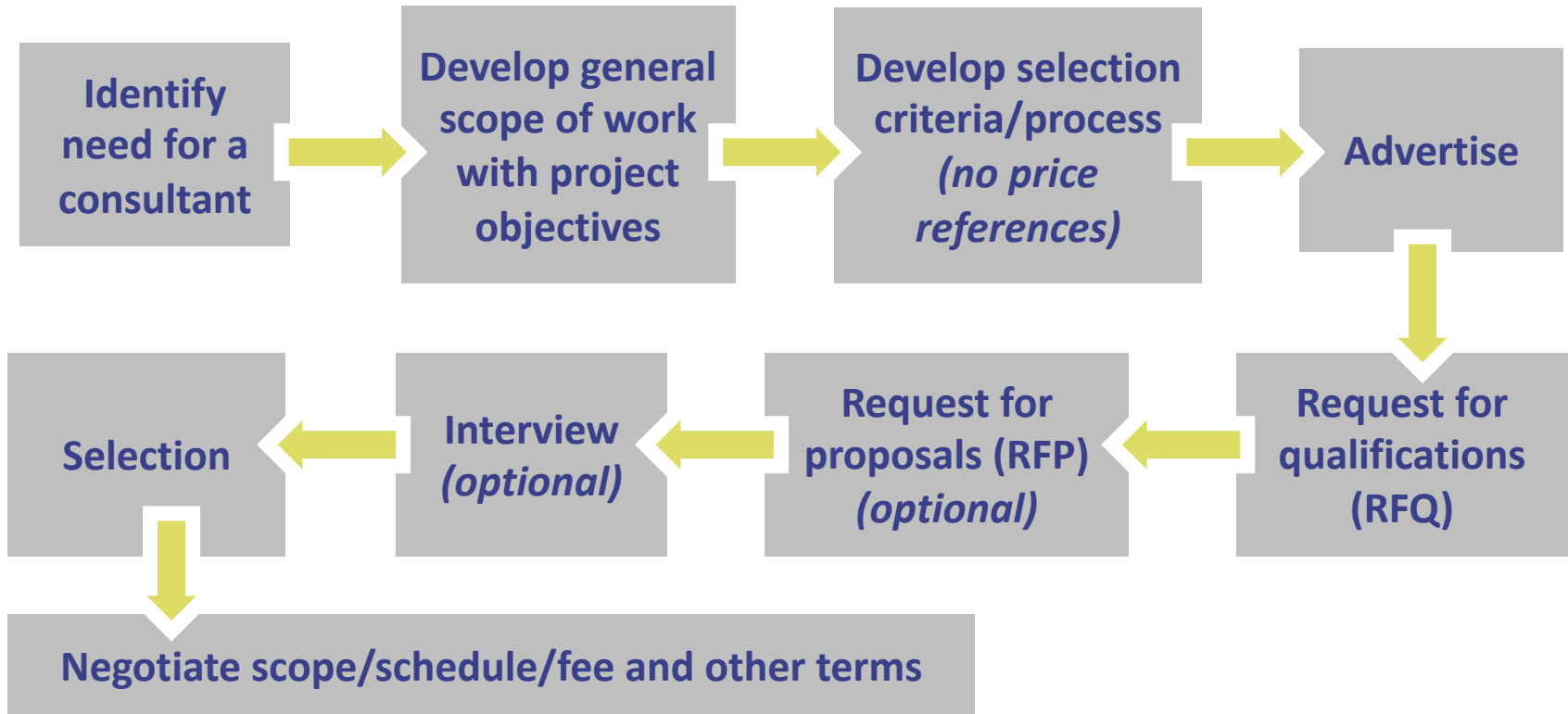
Can I negotiate directly with a firm that I worked with in the past?

Yes! You are selecting a firm based on their experience and qualifications rather than price. This is an expedited form of QBS.

Remember: the firm should be qualified for the project and the project must be similar in size, complexity and scope to their past work.



QBS Steps



Selection Criteria

Criteria should be based on qualifications relevant to the project

The criteria should also describe an objective weighted scoring process for evaluation of the qualification packages

Criteria may be supplemented with agency goals such as local or DBE participation



RFQ/RFP/Interview

Level of effort should be consistent with value of project

Not all projects will merit an RFP and/or an Interview

Level of detail should be consistent with level
of available information

Selection

Once selection is made, all firms should be notified in writing if they were selected or not.

Evaluation criteria scores and relative ranking to other firms is usually appreciated by consultants.

Most owners grant debriefing interviews to unsuccessful consultants.



Panel Question

Does QBS eliminate price negotiations?

No, price is still a factor.

But, until the owner, architect and/or engineer agree on the scope of what is needed, a price negotiation is not meaningful.

If the first focus is on qualifications, the owner will be assured that the professionals hired will have the technical ability and professional judgment to turn the project's vision into an efficient, effective and economical reality.



Panel Question

How does the owner know that they are getting a fair price in the negotiation?

- A/Es typically get about 85% of their business from repeat clients. Owner satisfaction ranks second only to the A/E's public safety professional responsibility. A reputation of higher fees without commensurate high quality (value) is a sure formula for losing projects and is not in the best business interest of the A/E.
- If the owner cannot be convinced that the fees are fair, the owner does not have to buy the A/E's services.



Panel Question

What happens if the Owner and A/E can not agree on the fee for the services?

The owner stops negotiations with the first ranked firm and begins negotiation with the second ranked firm.

The owner is always in control of the process.



Negotiation

Scope, schedule, fee and other terms are inter-related

- Select an appropriate fee structure
- List duties of the consultant and owner
- Identify deliverables and milestones
- Describe approval process
- Identify insurance and liability requirements
- Describe conflict resolution process
- List points of contact and level of their authority

Procurement Best Practices

#1: Team Building – Communicate – Identify and get all stakeholders on board

- Purchasing officer, buildings committee, Engineer, Public works director, Planner, end users

#2: What you want/what you don't want

- Identify the issue you want to resolve, potential solutions through market research
- Identify support organizations and resources to help frame solutions/project scope

#3: What laws and regulations govern your procurement?

- Federal, state and local

#4: Identify funding sources

- Determine project budget
- What strings are attached to the money/what oversight is required?

Procurement Best Practices

#5: Chose Solicitation Method

- QBS for professional services

#6: RFPs – You only get what you ask for

- *Background paragraph* – up-front
- *Scope* – detailed
- *Submissions* – Checklist of required documents
- *Evaluation* – Clear matrix for scoring (fee not a component)
- *Timeframe* – Response time, Q&A period, who fields questions

Procurement Best Practices

#7: It's a party, invite everyone

- Advertise ahead of time that RFQ/RFP is upcoming

#8: How to choose?

- Neutral panel with range of expertise and technical skills
- Use matrix to score
- Ask all reviewers to keep notes of review/evaluations/scoring

#9: Transparent Process

- Everyone gets the same information at the same time
- Once the selection is made, tell the winner and all respondents
- If a firm is not selected, tell them why

Procurement Checklist

- Stakeholders' approval
 - Purchasing agent
 - Engineer/ Public Works Director
 - Building committee
 - Planner
 - End user
- Conflicts of Interest check
 - Stakeholders
- Scope reviewed/approved
 - Purchasing agent
 - Engineer/ Public Works Director
 - Building committee
 - End user



Procurement Checklist

- Funding source:
 - Grant
 - Federal Highway/ Transit
 - State Revolving
 - State/Local
- Federal, state, local laws:
- RFQ:
 - Project background /detailed scope
 - Evaluation matrix – no fee included
 - Checklist of submissions
 - Deadlines defined/ contact information

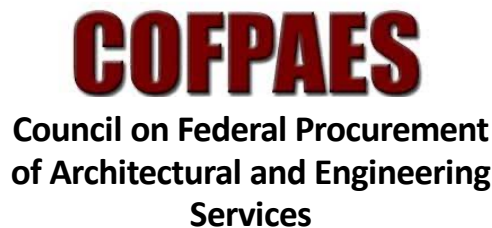


Procurement Checklist

- Evaluation
 - Committee members:
 - Matrix – no fee
 - Evaluation review sheets
- Decisions
 - Notice date:
 - Selected firm:
 - Unsuccessful firms:



QBS is endorsed by:



Who uses QBS?

- **Federal**
 - Brooks Act of 1972 **requires** all federally funded projects to use QBS for selection of Design Professionals
- **State/Local**
 - Forty-six states currently have QBS laws
 - Hundreds of municipalities use QBS.
- **Private**
 - Private industry almost never picks engineers based on low bid



Federal IJA Procurement Law

- **Federal IJA Funded projects**

- **Transportation:** On federal-aid highway and transit projects, state and local recipients are **required to follow Brooks Act procedures when contracting for engineering and design services.** 23 CFR 172. FHWA guidance defines QBS broadly, applying it to any **project where federal funds are used** as well as state/local expenditures on A/E contracts using non-federal matching funds. See https://www.fhwa.dot.gov/program_admin/consultant.cfm and <https://www.transit.dot.gov/funding/procurement/procurement>.

Federal IIJA Procurement Law

- **Federal IIJA Funded projects**

- **Water:** For projects utilizing Clean Water State Revolving Funds for wastewater projects, all architectural and engineering contracts **must comply with the Brooks Act or an equivalent state process.**

See

https://www.epa.gov/sites/default/files/201504/documents/water_resources_reform_and_development_act_guidance.pdf

- **Other Programs/grants:** For other IIJA funded programs including energy programs, broadband deployment, etc.; these programs do not expressly mandate QBS though it is still considered best practice. Federal common law grant rules generally require that state entities follow state-based laws and regulations which require the use of QBS.

Panel Question

How do you prevent bait and switch of team members?



Panel Question

Should all surveyors and subconsultant team members be selected by qualifications?



MassDOT Resources

MassDOT manuals, publications, SOPs

<https://www.mass.gov/massdot-highway-division-manuals-and-publications>

MassDOT design guides and manuals

<https://www.mass.gov/lists/design-guides-and-manuals>

Prequalification information

<https://www.mass.gov/prequalification-of-architectural-engineering-firms>

Prequalified A&E firms

[https://hwy.massdot.state.ma.us/webapps/MHDConsultants/MHD_Consultants.a
sp](https://hwy.massdot.state.ma.us/webapps/MHDConsultants/MHD_Consultants.asp)

Additional Resources

Contact:

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American Council of Engineering Companies of Massachusetts (ACEC/MA)

The Engineering Center

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Resources:

ACEC/MA QBS Committee Resource Page

<https://www.acecma.org/committees-forums/qualifications-based-selection-qbs>

Thanks for Attending!

Thank You and Questions

