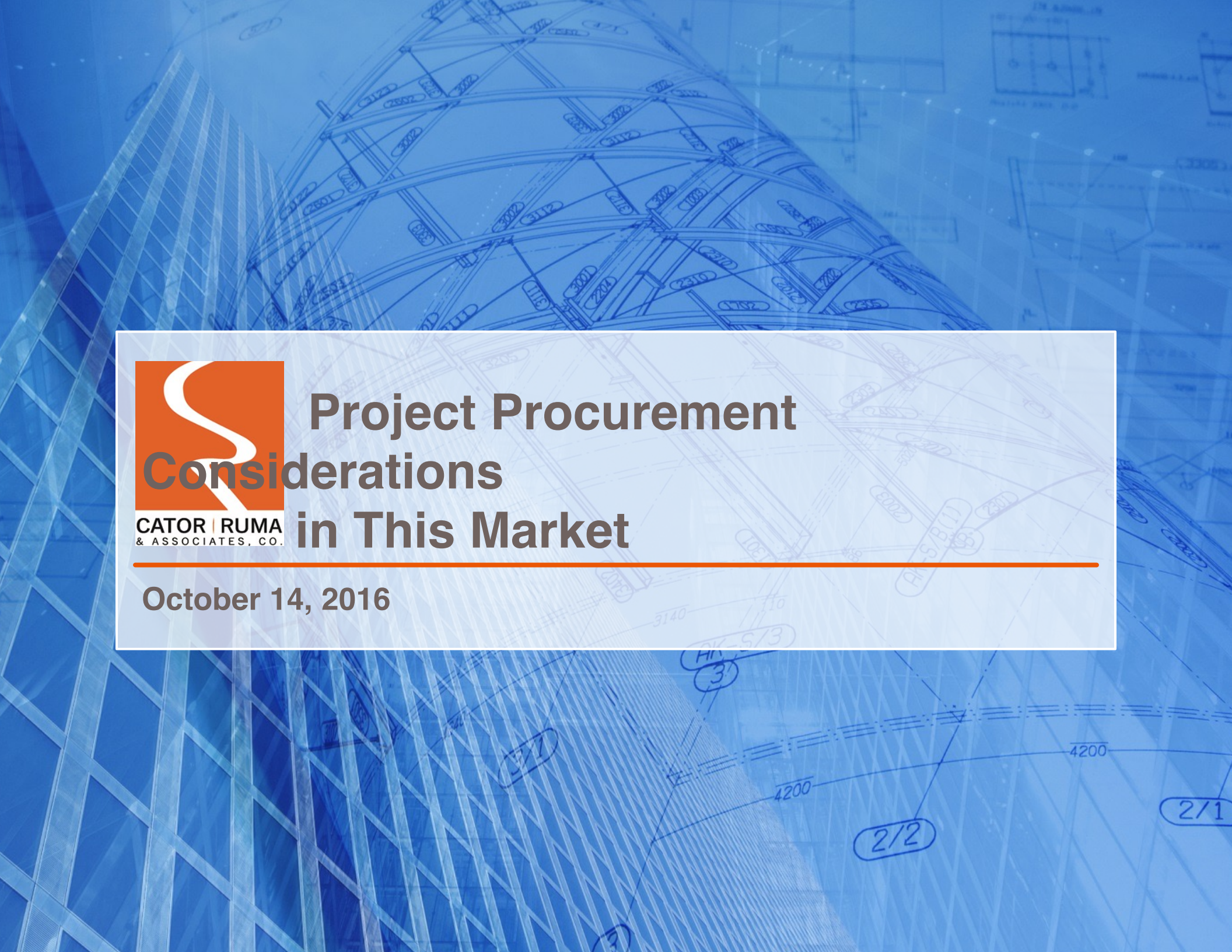


CATOR | RUMA & ASSOCIATES, CO.

Project Procurement Considerations in This Market

October 14, 2016

Overview

Thank you for being here!

- Introduction
- About QBS Colorado
- Project Delivery Methods
- Market Information
- Federal & State Information
- Applications for Use
- Case Studies

Introduction

Let Us Introduce Ourselves

- Blake Winter, PE
  Cator, Ruma & Associates
  Principal | Mechanical Engineer
- Mechanical, Electrical and Technology Engineers serving the Commercial, Industrial and Institutional Community since 1959
- Locally owned and managed
- Over 100 Employees Dedicated to Project success
- Located in Lakewood, CO; Boise, ID; and Cheyenne, WY
- Repeat clients are 90% of our business

What is QBS Colorado?

Qualifications-Based Selection

QBS Colorado is a non-compensated interdisciplinary organization dedicated to promoting **q**ualifications-**b**ased **s**election in Colorado through education and advocacy that encourages the use of QBS principles for the procurement of architectural, engineering and related professional services, as defined by the U.S. Federal Public Law 92-582 (The Brooks Act) and the Colorado Bill CRS 24-30-1401 (Mini-Brooks).

QBS Colorado believes that the health, safety and welfare of the built environment is best preserved when the selection of these professional services are based on demonstrated competence and qualifications.

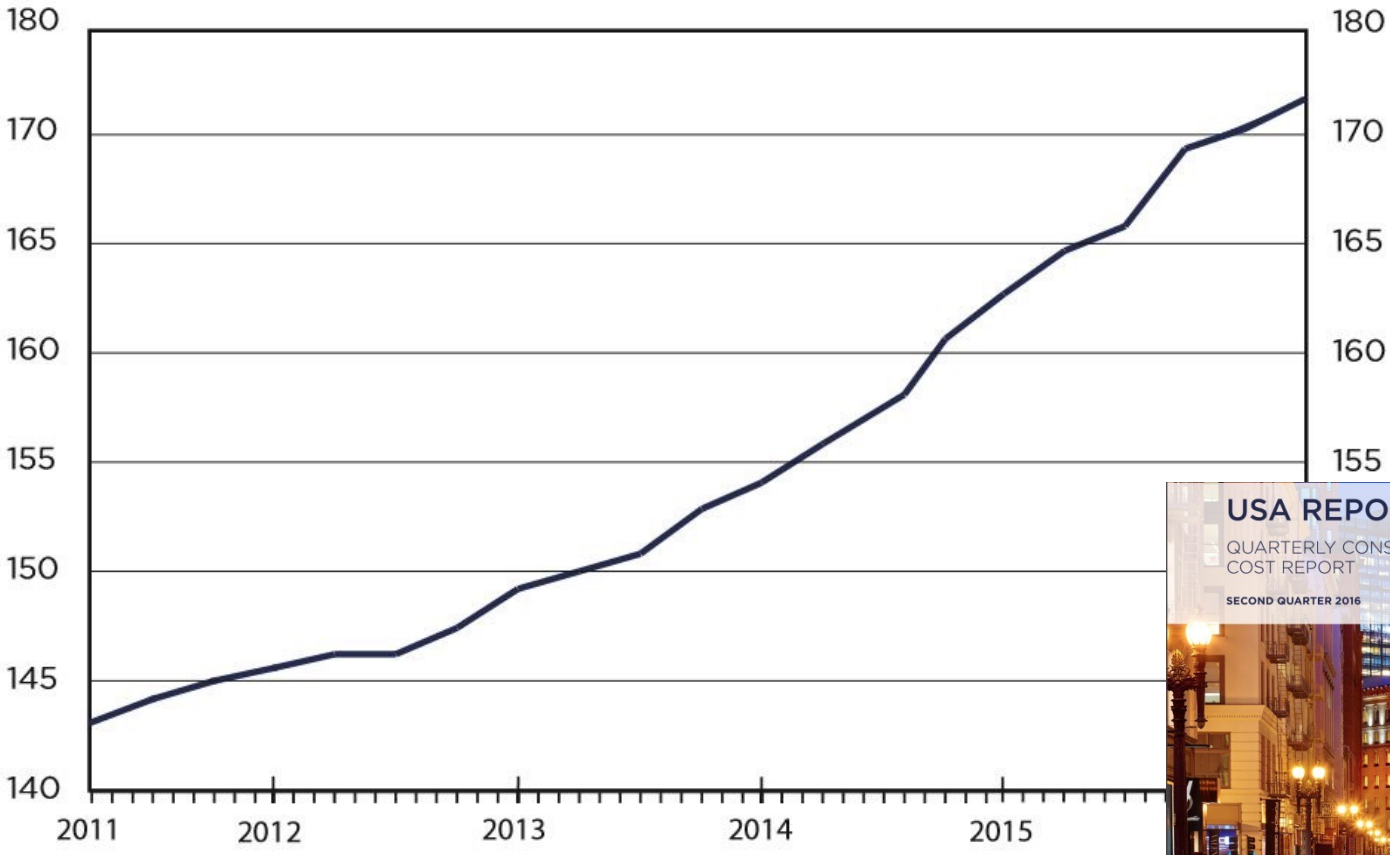
Who Comprises QBS Colorado?

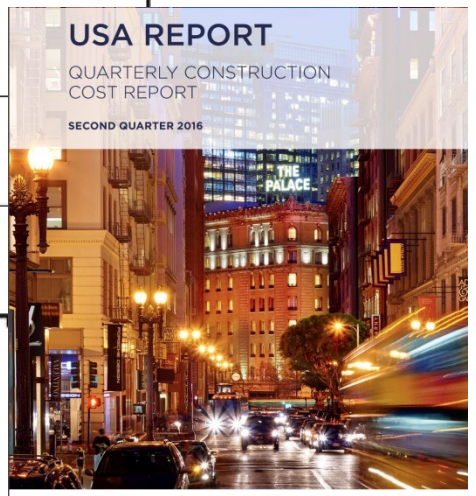
The Colorado Chapters of:

- American Council of Engineering Companies
- The American Institute of Architects
- National Society of Professional Engineers
- American Society of Civil Engineers

Market Conditions

NATIONAL CONSTRUCTION COST INDEX





RLB Rider Levett Bucknall

Market Conditions

What Does This Mean for My Project?

- Construction Industry Unemployment at 10-Year Low
  - Shortage of Skilled Tradesmen and Professionals
  - “A-Team” is already committed
  - Tough to procure Quick-Hitter projects
- Bid Day still stressful
- Contractors less likely to travel
- Firms looking for “good projects” in lieu of all projects
- Consider Extending Planning Phase
- Consider All Procurement Methods

Project Delivery Methods

Overview

- Design – Bid - Build
- CMAR (Construction Manager At-Risk) or CM/GC (General Contractor)
- Design - Build
- IPD (Integrated Project Delivery)

Delivery Method Considerations

Procure With a Purpose!

1. Cost Control
    1. First Cost vs. Life-Cycle Cost
2. Scope Control
3. Schedule Control

REMEMBER!

Bid Price ≠ Guaranteed Maximum Price ≠ Project Cost

QBS for Design Professionals

Background

- ACEC/AIA with Participation from DBIA and AGC formed a Design/Build Best Practice Committee
- Goal to encourage QBS in alternate delivery methods
- Worked with State Architects Office

Professional Services

- Are services; not commodities
- Engineers provide:
  - Technical Expertise
  - Innovation
  - Latest Technology
  - High Degree of Professional Competence

The Most Qualified Designer Leads to the Best Final Project Based on Need and Budget

Everyday Decisions are Based on this Principle.

$500

vs.

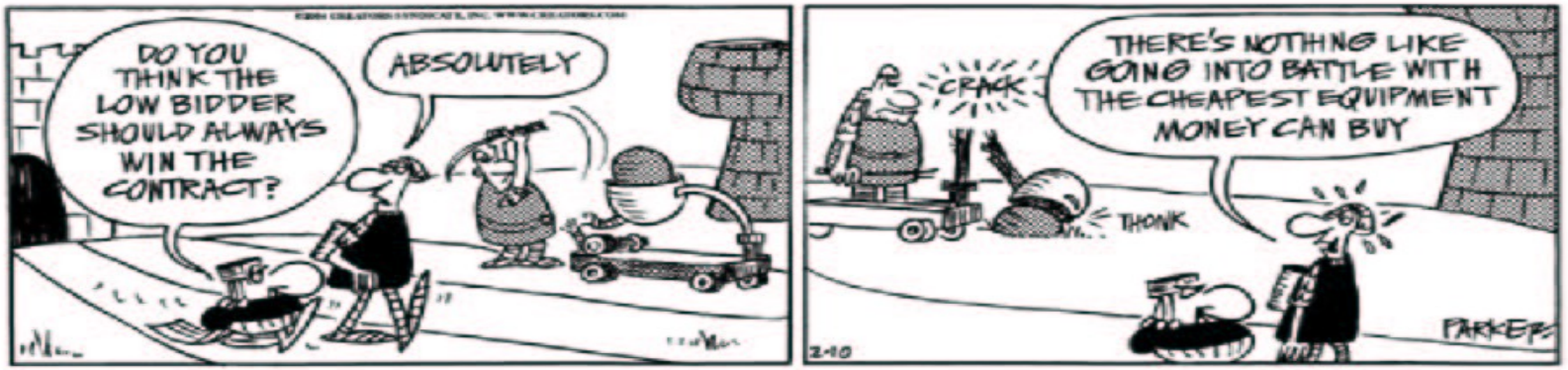
Or?

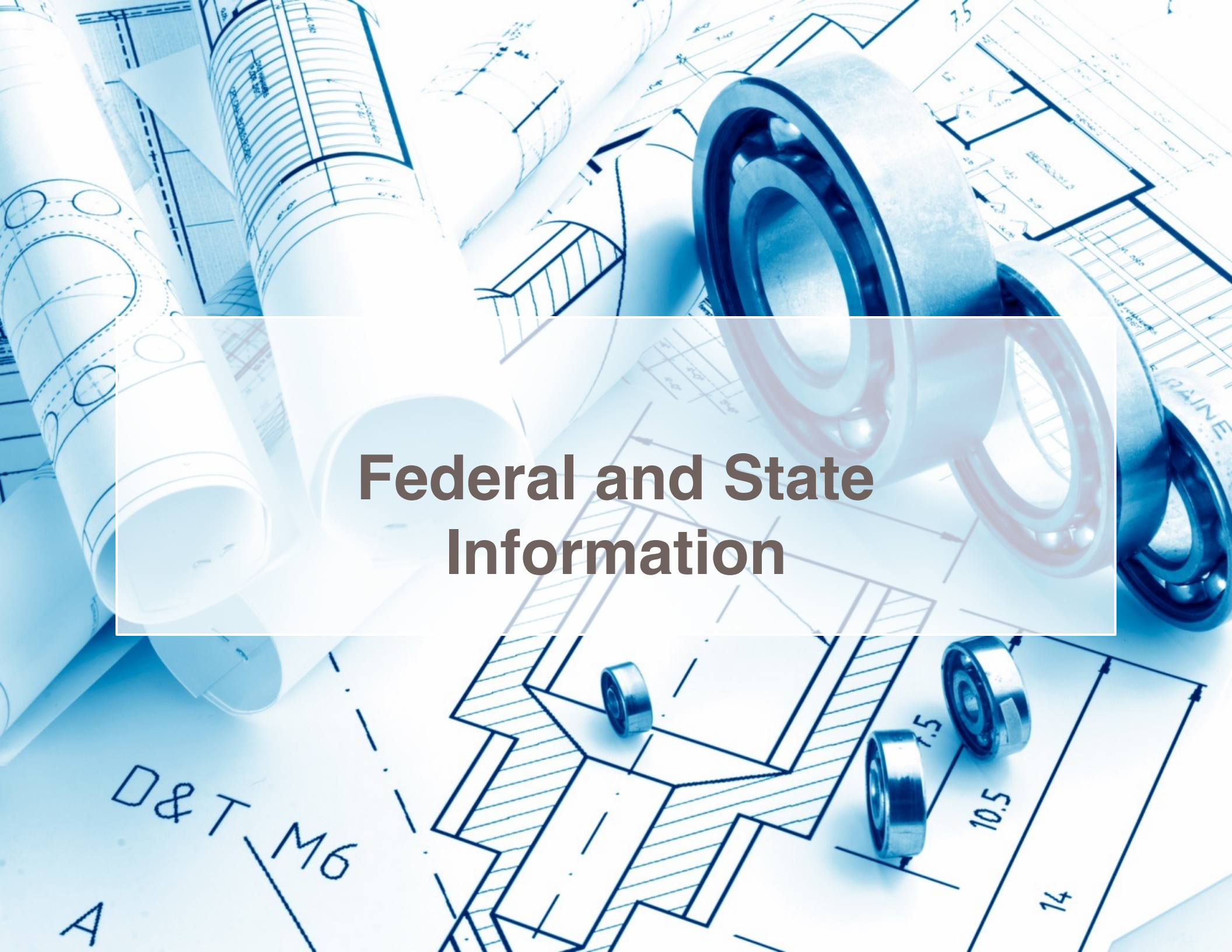
$250,000

$35,000

What Does the Owner Really Want?

- ❑ Lowest Construction Cost
- ❑ Lowest A/E Cost
- ❑ Lowest Life-Cycle Cost
- ☑ Performance and Long-Term Value





Federal and State Information

The Brooks Act

Federal Government Selection of Architects and Engineers

Public Law 92-582 | 92nd Congress, H.R. 12807 | Oct. 27, 1972

"To amend the Federal Property and Administrative Services Act of 1949 in order to establish Federal policy concerning the selection of firms and individuals to perform architectural, engineering, and related services for the Federal Government."

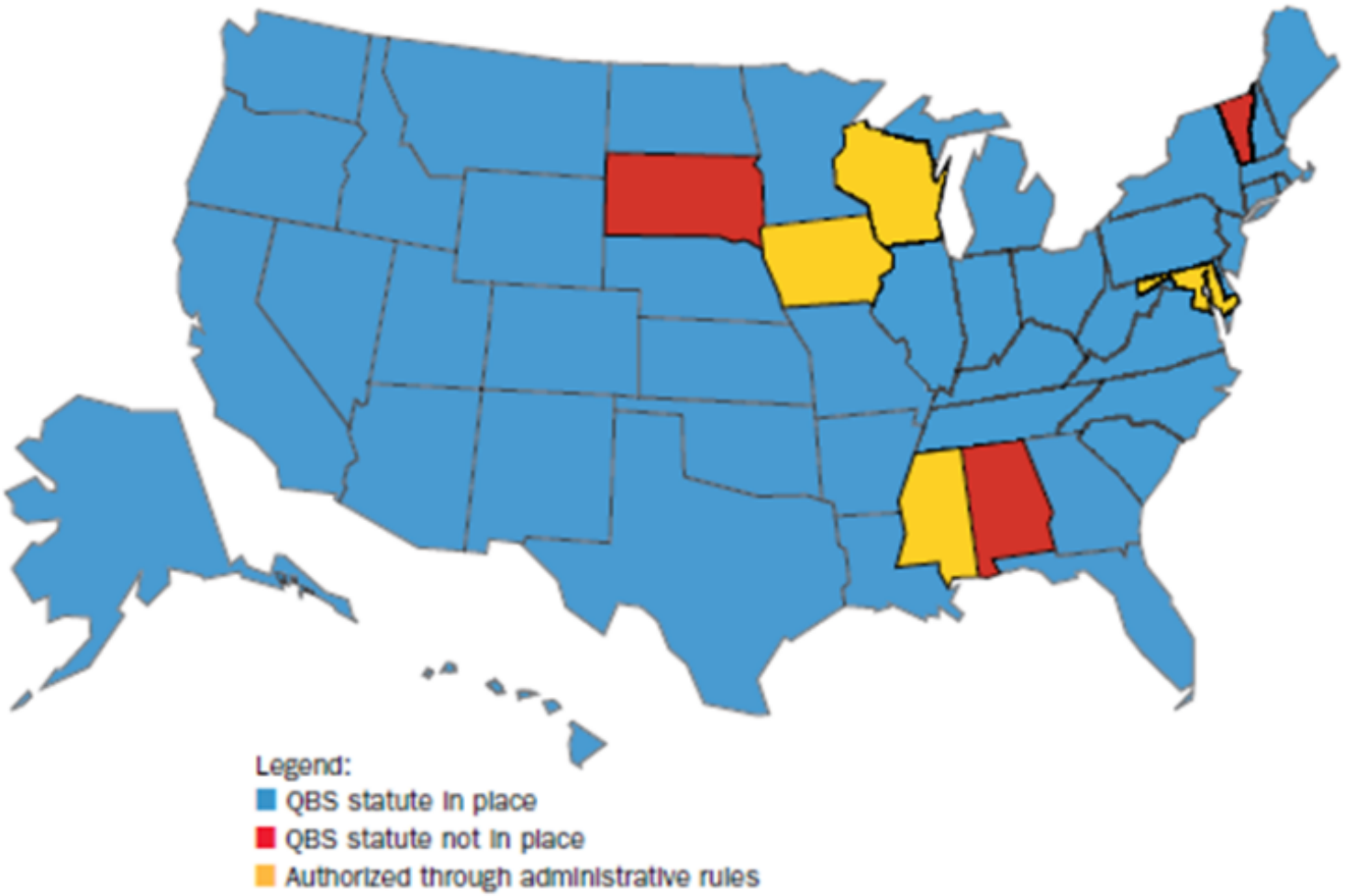
The Brooks Act

Section 902

"The Congress hereby declares it to be the policy of the Federal Government to:

- "**publicly** announce all requirements for architectural and engineering services,
- "**negotiate** contracts for architectural and engineering services on the basis of demonstrated **competence** and **qualification** for the type of professional services required, and
- "be **done** at **fair and reasonable** prices."

QBS Across the United States



Colorado "Mini-Brooks"

~~Revised State Statues (CRS): 24-30-1401 thru 1408~~ (1988)

"The purpose of this part 14 is to **provide managerial control by the state over competitive negotiations for the acquisition of the professional services provided by architects, industrial hygienists, engineers, landscape architects, and land surveyors.** It is hereby declared to be the policy of this state to **publicly announce requirements** for such professional services, to encourage all qualified persons to put themselves in a position to be considered for a contract, and to **negotiate** contracts for such professional services **on the basis of demonstrated competence and qualification** for the types of professional services required and on the basis of the furnishing of such professional services **at fair and reasonable fees.**"

Colorado "Mini-Brooks"

~~Revised State Statues (CRS): 24-30-1401 thru 1408~~ (1988)

- **HB14-1387 Section 38, CR.S. 24-30-1403(2)(a)**
  Removes the requirement to hold discussions with three or more firms/persons for fees estimated to be equal to or less than $25,000. For specific work within $25,000, interviews are not required and agencies can call A/Es directly for specific work, and still follow the Qualification Based Selection (QBS) laws.

Applications for Use

Who Uses QBS

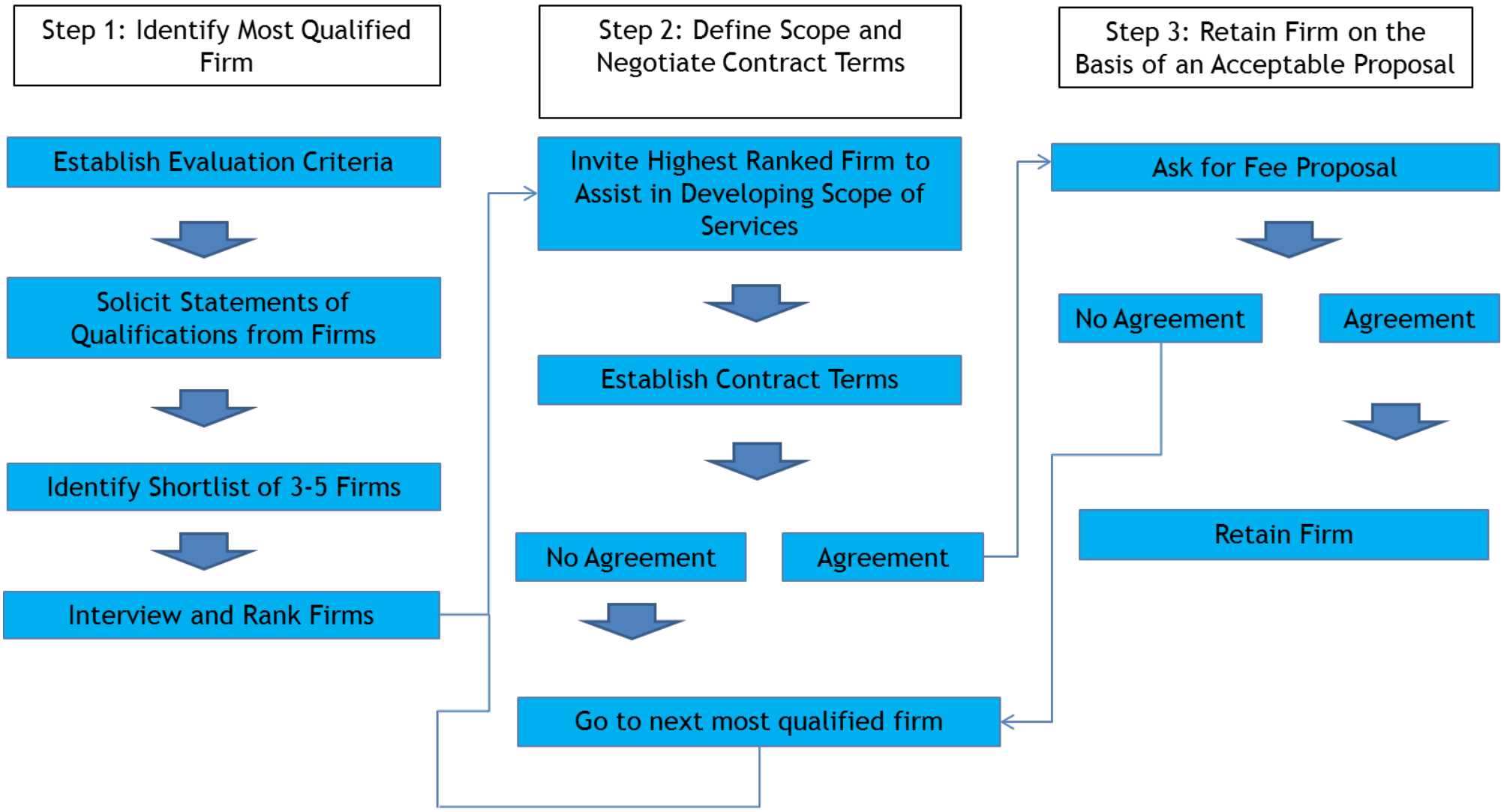
QBS is mandatory (It's the Law):

- Federally funded projects
- Colorado State Funded projects

QBS is recommended for:

- City funded projects
- County funded projects
- Special Districts projects
- Privately funded projects

How to Use QBS



How to Determine Criteria

Criteria are selected based on the needs of your project, owner, community, agency, etc.:

- **Specialized experience** and technical competence in the type or work required.
- **Professional qualifications** necessary for satisfactory performance of required services.
- **Capacity** to accomplish the work in the required time.
- **Approach to quality** management and quality assurance/quality control.
- **Past performance** on contracts with similar requirements.
- **Approach to cost control** and budget management.
- **Proximity** of the firm's facilities to the project site and owner.
- **Value-engineering** approaches.

How to Rank the Criteria

- The respondent is given a score for each criteria.
- Criteria is ranked and weighted.
- Criteria may have several sub-categories.
- Total score is tallied to determine **most-qualified** respondent.

RFQ Score Sheet

~~(State of Colorado: Request for Qualifications for A/E Services)~~

SCORE (PROJECT SPECIFIC QUALIFICATIONS): Weight[1] x Rating[2] = Score

PROJECT TEAM

- Qualifications and relevant individual experience. _____ x _____ = _____
- Unique knowledge of key team members relating to the project. _____ x _____ = _____
- Experience on projects <u>as a team</u>. _____ x _____ = _____
- Key staff involvement in project management and on- site presence. _____ x _____ = _____
- Time commitment of key staff. _____ x _____ = _____
- Qualifications and relevant subconsultant experience. _____ x _____ = _____
- TOTAL SCORE: _____

<u>NOTES:</u>

Weights are to be assigned prior to evaluation and are to be consistent on all evaluation forms.

Rating: 1 = Unacceptable 2 = Poor 3 = Fair 4 = Good 5 = Excellent

Total score includes the sum total of all criteria. A passing score (as a percentage of the total points available) is to be established prior to selection (if applicable).

Interview Score Sheet

~~(State of Colorado: Request for Qualifications for A/E Services)~~

SCORE (OVERALL QUALIFICATIONS)[3]: Weight[1] x Rating[2] = Score

1. PROJECT TEAM _____ x _____ = _____
2. PROJECT MANAGEMENT _____ x _____ = _____
3. PROJECT APPROACH _____ x _____ = _____
4. PRIOR EXPERIENCE _____ x _____ = _____
5. WORK LOCATION _____ x _____ = _____

TOTAL SCORE: _____

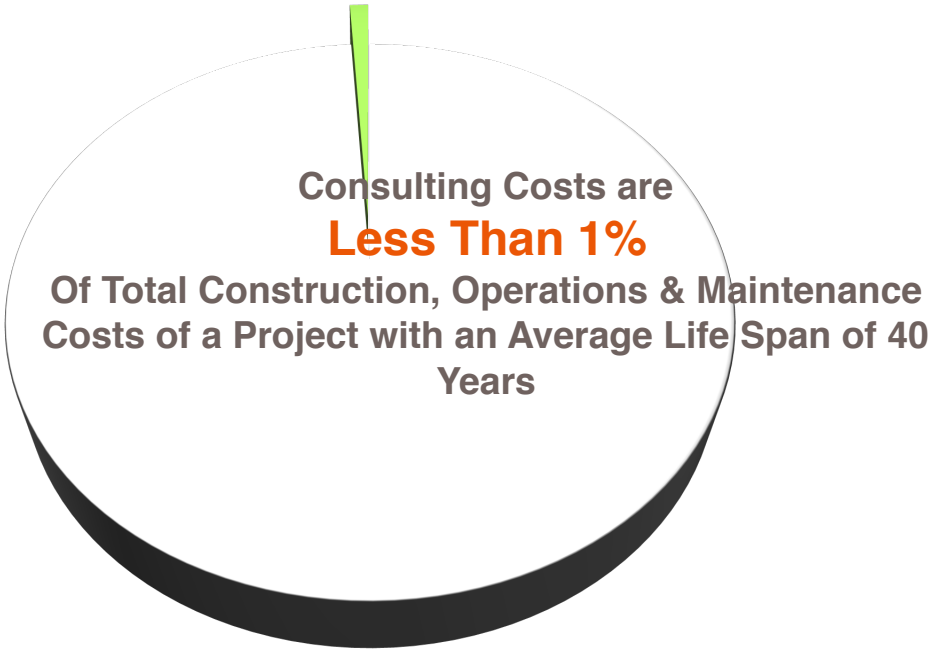
NOTES:

1. Weights are to be assigned prior to evaluation and are to be consistent on all evaluation forms.
2. Rating: 1 = Unacceptable 2 = Poor 3 = Fair 4 = Good 5 = Excellent
3. Total score includes the sum total of all criteria. A passing score (as a percentage of the total points available) is to be established prior to selection (if applicable).

Why Use QBS?

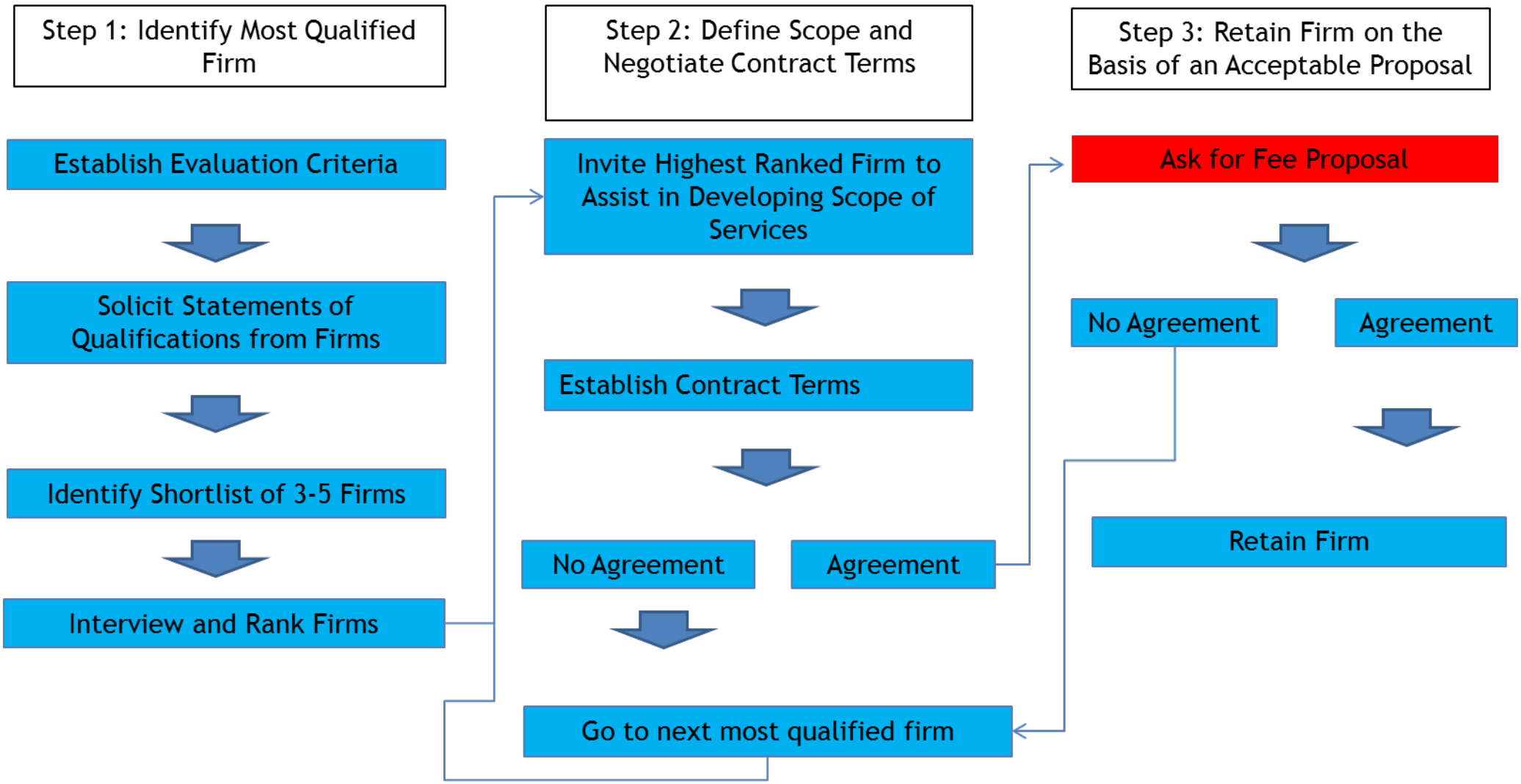
Remember…What we're after is GOOD design that leads to GOOD construction!

- Design is only about **1%** of total lifecycle cost.
- The other 99% of a project's lifecycle cost is dependent on the quality of the 1% spent on design.



QBS Works

QBS Considers Price at the Right Time



Why Use QBS?

It's Not Just About Money…

- Results in **productive, team relationships.**
- Creates partners with **common goals** and expectations through **communication.**
- Promotes a **thorough understanding.**
- Allows **fair and reasonable** fees.
- **Flexible** to project size.
- **Increases** innovation.

You Get What You Pay For…

- Lowest Bidder Has to "Win."
- Execution by Economics (Shortcutting).
- Opposition of Interests.
- Easiest Design vs. Best Design.
- Oversizing vs. Optimal Selection.
- Minimization of Critical Detail/Review.
- Inflexible.

Low Bid Inhibits Innovation…

- Select the easiest design solution, not the best.
- Use least experienced staff.
- Decline to explore alternative technologies, materials and design ideas.
- Minimize details and let the contractor fix it.
- Minimize review of construction documents.

Why Use QBS?

- Construction and Life Cycle Cost Considerations
- Team Building
- Technology/Innovation/Project Performance
- Reduced Changes
- Flexible Contract Approaches
- Competition Among Best Performers; Not Low Bidders

Professional A/E Services

- **Creative** by nature.
- **Not a tangible commodity.**
- Require **critical thinking** skills, **intellectual** effort.
- Involve **investigation, analysis and research.**
- **Problem-solving.**

How Can You Bid This?

Case Studies

Independent Study ACEC, CU, Georgia Tech

- Lower Overall Construction Costs
- Reduced Change Orders (Down to 3% from 10%)
- Fewer Schedule Delays (Down to 3% from 9%)
- Better Project Results
- More Highly Satisfied Owners

93% OF OWNERS RATED QBS PROJECTS AS HAVING A HIGH TO VERY HIGH SUCCESS RATE

QBS Case Study #1

- You have a project where you need an engineer to replace some HVAC cooling equipment that conditions the server room in your facility.

- While you were testing the feasibility of this project and scheduling the project you had conversations with the mechanical engineer who has done work on your site and knows your construction standards, age of equipment, and goals for your facility. While generally discussing the project you and the mechanical engineer realize that the HVAC replacement equipment would be a good candidate for adding Heat Recovery to the system.

- You ask this mechanical engineer to provide you a proposal and let him know you will be soliciting proposals from 2 other firms

QBS Case Study #1

As the Mechanical Engineer responds to your request here are your choices of action:

1. Call the owner and ask to explain the opportunities of innovative design in the hope that he will accept your higher price – since the other 2 firms will be proposing on the like-for-like replacement
2. Ask the owner to tell the other engineers to base their fee on the heat recovery design so that everyone's fees are comparable.
3. Give the owner two fees, one for the conventional design and one for the innovative design and let him decide.
4. Base your fee on the like-for-like replacement design so your fee is low and hope you get the job.

QBS Case Study #1

Who Chose Option #1?

(Call the owner to explain the opportunities of innovative design… hope he accepts your higher price.)

- The owner says that it is a great idea. So you give him your higher fee based on the innovative approach.
- But the owner calls a week later to thank you for your effort but he just had to take the engineer whose fees were 65% less than yours. But he will invite you to bid next time.

QBS Case Study #1

Who Chose Option #2

(Owner tells other engineers to base their fee on the innovative design.)

- The owner says, fine. Just write a scope so he can hand it to the other engineers.
- One of the other engineers calls you to ask what heat recovery is and how it would work in this facility.
- The owner calls a week later and says that he chose the engineer whose price was 65% lower than yours. Without telling you, he thinks that you price gouge and will not call you again.
- The selected engineer later talks the owner out of the risky heat-something design and goes ahead and draws a simple like-for-like replacement. Yes, he was the one with the low fee.
- And yes, your opperating costs increase instead of decrease

QBS Case Study #1

Who Chose Option #3

(Give the owner two fees, one for the conventional design and one for the innovative design.)

- The owner calls and says that he really likes the innovative option but the low conventional design fee looks really tempting. Even though you were not the lowest fee among the three engineers, he would be happy to give you the job if you would go with the innovative option for the conventional option fee. If you can't, he will have to go with the lowest fee of one of the other engineers.

QBS Case Study #1

Who Chose Option #4

(Base your fee on the conventional design so your fee is low)

- Congratulations, you got the job. Your price was 65% lower than the next engineer. This client thinks you're a great guy.
- Three months later your multiplier is 1.4 and the project is behind schedule. You and the owner are barely speaking since you have submitted seven change orders for out-of-scope work. The owner says, "How can this be? You said that this is a conventional design! Don't you know your own business!"

QBS Case Study #1

Moral of the Story

- When price is on the table it trumps other considerations, even quality and innovation. However, in many cases, the difference in quality outweighs the apparent savings in fees when considering the life cycle costs.

- Had the owner used QBS he would have worked with the innovative engineer that knows about his site and standards to develop a layout that would have utilized less energy, reduced operating costs and a yielded higher rate of return on his investment.

Myth #1 of QBS

Myth: **QBS is harmful to small business.**

Fact: QBS **helps small firms compete** by allowing them to **showcase the advantages** that they often have over large firms, including a greater degree of **niche market expertise**, more **knowledge of local regulations** and business practices, and greater involvement of **senior-level management** in the execution of the project.

Myth #2 of QBS

Myth: **QBS is Cronyism**

Fact: The QBS procedure recommends that there be **public announcement** of project requirements so that all firms may submit qualifications and be considered on their merits. The **record remains open** for public scrutiny at all times during the selection process. In addition, attempts to introduce political favoritism into the process are opposed by the **professional societies** representing engineers and other design professionals.

Myth #3 of QBS

Myth: **QBS is a burden for small communities.**

Fact: Small communities benefit from QBS because they can **select local talent that understands the community,** has intimate knowledge of local infrastructure, and is known by local officials. A community can select qualified professionals on an annual or other regular basis using a **simplified process for traditional services,** while using a more detailed process for projects requiring specialized expertise. QBS allows for the best of all circumstances in that it **promotes creativity,** provides the client a flexible selection process, and **ensures maximum quality** and **enhanced relationships.**

Conclusion: Benefits of QBS

- Increased competition among most-qualified consultants.
- Allows for consideration of non-conventional, long-term, sustainable and efficient designs.
- Promotes significant lifecycle cost-savings solutions.
- Allows for more comprehensive plans and specifications.
  - Reduce construction change orders.
  - Reduce time delays.
  - Reduce potential for disputes and unfortunate legal expenses.
- Promotes a cooperative relationship between client and consultant.
- Improves the defined scope-of-work.

Questions?

QBS raises the bar.

It's good for the client and good for the profession!

www.qbscolorado.org