NCHRP Project 20-05/Topic 45-02

Practices for Developing Transparent Best Value Selection Procedures

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Presentation Overview

- Overview of best-value procurement in highways
- Effective best-value selection practices
- Lessons learned from best-value case studies
- Conclusion and discussion
Learning Objectives

- Understand the use of best value procurement in highway design and construction
- Identify practices that may enhance objectivity, fairness, and transparency of the selection process
- Learn about case studies from state DOTs
Key Findings

1. Best-Value Methods to Promote Transparency
2. Evaluation Criteria Clarity and Transparency
3. Evaluation Committee Composition and Conduct
4. Completeness of Evaluation Comments and Debriefings
5. Communications to Promote Transparency
6. Collaboration with Industry in Best-Value Programs
7. Best-Value Procurement and Project Delivery
8. Importance of Best-Value Evaluations Plans
9. Training in Best-Value Procurement Processes
10. Lessons Learned from Best-Value Protests
Key Findings

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10. Lessons Learned from Best-Value Protests
Overview of Best-Value Procurement in Highways
Best-Value Concepts

Best-Value Definition

A procurement process where price and other key factors are considered in the evaluation and selection process to enhance long-term performance and value of construction.
Best-Value Concepts

Historically Public Sector
Typically Fixed
Price
Considerations
Open Bidding

Fixed - Price
Sealed Bidding

Best-Value
Price and Other Key
Considerations

Historically Private Sector
Typically Negotiated
Qualifications-Based

Sole Source
Selection
Qualitative
Considerations
Best-Value Concepts

- Project Goal
  - Best-Value Parameters
- Evaluation Plan
  - Best-Value Evaluation Criteria
  - Best-Value Evaluation Systems
  - Best-Value Award Algorithms

Evaluation Criteria
- Cost
- Time
- Qualifications
- Quality
- Design Alternates

Evaluation Rating Systems
- Satisficing (Go/No-Go)
- Modified Satisficing
- Adjectival Rating
- Direct Point Scoring

Award Algorithms
- Meets Technical-Low Bid
- Quantitative Cost-Technical Tradeoff
- Qualitative Cost-Technical Tradeoff
- Fixed Price-Best Prop.
Best-Value Evaluation Criteria

- Cost
  - Cost
  - Life-Cycle Costs
- Time
  - Project Schedule
  - Lane Rental
  - Management of Traffic
- Qualifications
  - Prequalification
  - Past Project Performance
  - Personnel Experience
  - Subcontractor Information
  - Project Management Plans
- Quality
  - Warranty
  - Quality with % in Limits
  - Quality Performance Indicator
  - Quality Management Plans
- Design Alternates
  - Design with Bid Alternate
  - Design with Performance Criteria

NCHRP REPORT 561
Best-Value Procurement Methods for Highway Construction Projects
Best Value Evaluation Rating Systems

- Satisficing (Go/No-Go)
- Modified Satisficing
- Adjectival Rating
- Direct Point Scoring
Best Value Award Algorithms

- Meets Technical Criteria-Low Bid (satisficing and price)
- Quantitative Cost-Technical Trade-off (point scoring systems)
- Qualitative Cost-Technical Trade-off (adjectival or mod. satisficing)
- Fixed Price-Best Proposal (points or adjectival)
Effective Best-Value Selection Practices
Research Methodology

- Literature review
- Survey of state departments of transportation (DOTs)
- Content analysis of RFQ/RFPs for best-value transportation projects
- Case studies of best-value procurement
46 state DOTs responded to the survey (response rate: 88%)
Data Collection

46 state agencies (88% response)
Implementing/Considering Best-Value Procurement

30 Agencies Implementing
5 Agencies Considering

Agencies Implementing Best-Value Procurement
Agencies Considering Best-Value Procurement
Not Using Best-Value Procurement

11 Agencies Not Using
Best-Value vs. Project Delivery

- Best value application with D-B: 35 (100%)
- Best value application with D-B-B: 19 (54%)
- Best value application with CM/GC: 9 (26%)
- Best value application with Job Order Contracting: 12 (34%)
Transparency in Best-Value Process

- Low-Bid only requires the evaluation of price factors
- Best-Value requires the evaluation of both price and non-price factors
- The scoring of non-price factors and the process of trading them off with price can create issues with transparency
Evaluation Criteria and Transparency

Evaluation criteria should

- Be the minimum number required
- Be clear, defensible and easy to understand
- Be tailored to the individual project
- Minimize recycling criteria from project to project
- Focus on items that bring measurable value to the project
## Example of Evaluation Criteria

<table>
<thead>
<tr>
<th>Type of Factor</th>
<th>Evaluation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass/Fail</td>
<td>Legal</td>
</tr>
<tr>
<td></td>
<td>Financial</td>
</tr>
<tr>
<td>Technical/Quality</td>
<td>Management / Administration Evaluation Criteria</td>
</tr>
<tr>
<td></td>
<td>Environmental Compliance and Public Outreach Plans</td>
</tr>
<tr>
<td></td>
<td>Responsiveness to RFP and Design Concept</td>
</tr>
<tr>
<td></td>
<td>Transportation Management Plan and Safety</td>
</tr>
</tbody>
</table>

Source: Caltrans (2012)
Solicitations convey point range for evaluation criteria

29 (83%)

Solicitations convey evaluation criteria in order of importance

6 (17%)
Selection Methods and Transparency

- Adjusted bid, adjusted score, and weighted criteria to promote transparency
- Direct point evaluation rating system
- Create clear communication between parties involved in the evaluation process
- Establish balanced-technical member evaluation committees
- Conduct procurement meetings and debriefings

Source: Caltrans (2012)
Debriefings and Transparency

- Proposers receive an oral debriefing: 26 (74%)
- Proposers are allowed to review the winning proposals: 16 (46%)
- Proposers receive a written debriefing: 11 (31%)
- Proposers do not receive a debriefing: 2 (6%)
- Others: 5 (14%)

Frequency mentioned
Debriefings and Transparency

- Thorough documentation of evaluation comments
- Comments are specific, concise, and tied to scoring
- Timely and detailed debriefings help to
  - Clarify the basis for award
  - Clarify the selection process
  - Document strengths and weaknesses of proposals
  - Demonstrate the rationale behind the decision
- Almost half (46%) allow unsuccessful proposers to view successful proposal
Lessons Learned from Best-Value Case Studies
Selection of Case Studies

- Years of experience using best value procurement
- Use of best-value procurement with different project delivery methods including D-B-B, D-B, and CM/GC
- The number of best-value projects
- Comprehensiveness and availability of best-value process documentation
- Willingness of agency personnel to participate
Case Study Protocol

- Proposal evaluation criteria
- Selection methodology/award algorithm
- Structure of evaluation committee
- Debriefing procedures
- Industry outreach efforts
- Lessons learned
Seven state DOT Case Studies

- Caltrans
- Florida
- Michigan
- Minnesota
- New York State
- Oregon
- Utah
Seven state DOT Case Studies

- Caltrans
- Florida
- Michigan
- Minnesota
- New York State
- Oregon
- Utah
Michigan DOT Best-Value Case Study

- MDOT only uses best-value procurement on select projects
- MDOT does not have a standard template for best-value projects
- MDOT issues Instruction to proposer for a given project
- MDOT highlighted that
  - Evaluation criteria should focus on *project specific needs*
  - Selection methods/Award Algorithms need to be *objectively defined, evaluated, and scored.*
M-21 Bridge Replacement Project

- Replace and widen bridge
- Maintain mobility
- Minimize ROW, Environmental and Utility impact
- Estimated Cost: $6.4 M
- Construction Duration: 1 year
<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Maximum points</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>50</td>
<td>MDOT’s goal is to minimize impact to the traveling public while getting the work completed as quickly and safely as possible. Scoring will be greatest to those Proposers who provide a mobility plan that minimizes impact to the traveling public while assuring a fast, efficient and high quality construction. MDOT will review and score Mobility base on two parts: Part 1 (30 points) for user delay costs and Part 2 (20 points) for Traffic Management Plan.</td>
</tr>
<tr>
<td>Progress Schedule</td>
<td>20</td>
<td>The scoring represents MDOT’s goal to provide a project that is substantially completed with the shortest construction schedule.</td>
</tr>
<tr>
<td>Quality Assurance/Quality Control</td>
<td>15</td>
<td>Provide a Quality Assurance/Quality Control plan that addresses both design and construction activities. This document should address how errors are minimized, what process is used to oversee work, and show authority for Quality Assurance/Quality Control reviewers to change or stop work.</td>
</tr>
<tr>
<td>Project Communications</td>
<td>10</td>
<td>Provide a communication plan that outlines both internal communication of the design/build team and your proposal for communication with MDOT, the firm performing design assistance and the firm performing the construction engineering.</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>5</td>
<td>Provide a proposal of how the proposal addresses a structure that has positive aesthetics and why</td>
</tr>
</tbody>
</table>
**M-21 Bridge Replacement Project**

Final Best Value Score = [(30%) * Proposal Price] + [(70%) * (Proposal Price/ (Technical evaluation score * 0.01))]

<table>
<thead>
<tr>
<th>Proposal Price</th>
<th>Technical Evaluation Score</th>
<th>Computation</th>
<th>Final Best Value Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6,000,000</td>
<td>85</td>
<td>(.3)(6,000,000)+(0.7)(6,000,000)/((85)(0.01))</td>
<td>6,741,176</td>
</tr>
<tr>
<td>$6,250,000</td>
<td>90</td>
<td>(.3)(6,250,000)+(0.7)(6,250,000)/((90)(0.01))</td>
<td>6,736,111**</td>
</tr>
<tr>
<td>$6,500,000</td>
<td>95</td>
<td>(.3)(6,500,000)+(0.7)(6,500,000)/((95)(0.01))</td>
<td>6,739,474</td>
</tr>
</tbody>
</table>

**Best Value Selected**
MDOT Best-Value: Lessons Learned

- Evaluation criteria must be well-defined based on project specific needs
- Award algorithms should be developed on a project-by-project basis
- Procurement meetings and debriefings enhance the fairness and transparency
- The Freedom of Information Act in Michigan fosters transparency
NYSDOT Best-Value Case Study

- NYSDOT uses best-value procurement D-B-B and D-B
- A two-step best value selection for D-B projects
  - Step 1: RFQ/SOQ Evaluation – Prequalification of proposers
  - Step 2: RFP/Proposals – Selection of the final proposer
- NYSDOT prepares a procurement management plan that clearly describes
  - Evaluation criteria/Award Algorithms
  - Evaluation teams
  - A selection process
## Generic Evaluation Criteria

<table>
<thead>
<tr>
<th>Type of Factor</th>
<th>RFQ Evaluation Factors</th>
<th>RFP Evaluation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass/Fail</td>
<td>Legal</td>
<td>Legal</td>
</tr>
<tr>
<td></td>
<td>Financial</td>
<td>Financial</td>
</tr>
<tr>
<td></td>
<td>SOQ Responsiveness</td>
<td>Proposal Responsiveness</td>
</tr>
<tr>
<td>Technical/Quality</td>
<td>Experience</td>
<td>Experience and Qualifications</td>
</tr>
<tr>
<td></td>
<td>Past Performance</td>
<td>Management Approach</td>
</tr>
<tr>
<td></td>
<td>Capacity</td>
<td>Technical Solutions</td>
</tr>
<tr>
<td></td>
<td>Project Understanding</td>
<td>Project Support</td>
</tr>
</tbody>
</table>

Source: NYSDOT (2011)
# Generic Evaluation Guidelines

<table>
<thead>
<tr>
<th>Rating</th>
<th>SOQ Rating Guidelines</th>
<th>Proposal Rating Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceptional</td>
<td>The Proposer has provided information relative to its qualifications which is considered to significantly exceed stated objectives/requirements in a beneficial way and indicates a consistently outstanding level of quality. There are essentially no Weaknesses.</td>
<td>The Proposer has demonstrated an approach that is considered to significantly exceed stated criteria in a way that is beneficial to the Department. This rating indicates a consistently outstanding level of quality, with very little or no risk that this Proposer would fail to meet the requirements of the solicitation. There are essentially no Weaknesses.</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>The SOQ fails to meet the stated objectives and/or requirements and/or lacks essential information and is conflicting and/or unproductive. Weaknesses/Deficiencies are so major and/or extensive that a major revision to the SOQ would be necessary and/or are not correctable.</td>
<td>The Proposer has demonstrated an approach that indicates significant Weaknesses/Deficiencies and/or unacceptable quality. The Proposal fails to meet the stated criteria and/or lacks essential information and is conflicting and/or unproductive. There is reasonable likelihood of success; Weaknesses/Deficiencies are so major and/or extensive that a major revision to the Proposal would be necessary.</td>
</tr>
</tbody>
</table>

Source: NYSDOT (2011)
NYSDOT Best-Value Case Study

To enhance transparency, NYSDOT uses the following strategies:

- Provide a detailed description of the quality evaluation factors
- Not carry over SOQ ratings to the RFP/proposals evaluation process
- Require a consensus of rating results for individual factors
- Price is only evaluated in the RFP/Proposals evaluation process
- Conduct clarification or communication process to resolve any ambiguities or errors
- Document the rating process for each evaluation factor in the worksheet
- Clearly document strengths, weaknesses, deficiencies, and risks associated with each factor
- Use nicknames (Catskills, Oneida, or Niagara) to code the Proposers
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Tappan Zee Hudson Project

- Replace bridge crossing of the Hudson River
- Deliver the Project safely, on schedule and within budget
- Improve transportation operations
- Ensure the long-term vitality
- Provide best value to the Authority
- Estimated Cost: $4.0 Billion
- Est. Construction Duration: 5.5 years
## Tappan Zee Hudson Evaluation Criteria

<table>
<thead>
<tr>
<th>Factors</th>
<th>Sub-factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and construction solution</td>
<td>Construction approach</td>
</tr>
<tr>
<td></td>
<td>Service life of the crossing</td>
</tr>
<tr>
<td></td>
<td>Maximum the public investment</td>
</tr>
<tr>
<td></td>
<td>Bridge, structures an aesthetic design concepts</td>
</tr>
<tr>
<td></td>
<td>Geotechnical</td>
</tr>
<tr>
<td></td>
<td>Roadway design concept</td>
</tr>
<tr>
<td></td>
<td>NYSTA operations and security</td>
</tr>
<tr>
<td>Management approach</td>
<td>Schedule</td>
</tr>
<tr>
<td></td>
<td>Organization and general management</td>
</tr>
<tr>
<td></td>
<td>Design management</td>
</tr>
<tr>
<td></td>
<td>Construction management</td>
</tr>
<tr>
<td>Key Personnel and Experience</td>
<td>Key personnel</td>
</tr>
<tr>
<td></td>
<td>Experience of the firms</td>
</tr>
<tr>
<td></td>
<td>Past performance</td>
</tr>
<tr>
<td>Environmental compliance</td>
<td></td>
</tr>
<tr>
<td>Public outreach and coordination with stakeholders</td>
<td></td>
</tr>
</tbody>
</table>

*Source: New York State Thruway Authority (2012)*
# Tappan Zee Hudson Selection Method

<table>
<thead>
<tr>
<th>Exceptional -</th>
<th>Good -</th>
<th>Acceptable -</th>
<th>Unacceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exceptional</td>
<td>Good</td>
<td>Acceptable</td>
<td></td>
</tr>
<tr>
<td>Exceptional +</td>
<td>Good +</td>
<td>Acceptable +</td>
<td></td>
</tr>
</tbody>
</table>

*Source: New York State Thruway Authority (2012)*
# Tappan Zee Hudson Selection Method

<table>
<thead>
<tr>
<th>Technical Ranking *</th>
<th>Catskills</th>
<th>Oneida</th>
<th>Niagara</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal Prices (Billion)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Amount</td>
<td>$4,059</td>
<td>$3,990</td>
<td>$3,142</td>
</tr>
<tr>
<td>Difference above Low Bid</td>
<td>$917</td>
<td>$848</td>
<td>-</td>
</tr>
<tr>
<td>Net Present Value **</td>
<td>$3,837</td>
<td>$3,705</td>
<td>$2,959</td>
</tr>
<tr>
<td>Difference above Low NPV</td>
<td>$878</td>
<td>$746</td>
<td>-</td>
</tr>
<tr>
<td>Best-Value Proposal</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: New York State Thruway Authority (2012)
## Best-value Tradeoff Comparison

<table>
<thead>
<tr>
<th>Element</th>
<th>Aspects of Superior Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTRUCTION APPROACH</td>
<td>Construction schedule is more favorable</td>
</tr>
<tr>
<td>MAXIMIZING PUBLIC INVESTMENT</td>
<td>Extra piles for Potential Future Loading in approach spans are better positioned</td>
</tr>
</tbody>
</table>
| BRIDGE DESIGN             | - Main span deck has a redundant load path (longitudinal trusses) for resiliency under extreme events  
                           | - Approach span decks are more readily replaceable |
| BRIDGE AESTHETICS         | The aesthetic approach has potential for greater flexibility to respond to stakeholder input on visual-quality issues. This approach is a good solution that can be improved upon as the design is further developed, within the firm fixed price. Additional improvements would be possible at additional cost as an enhancement option.  
                           | - The designer has treated the whole crossing as a continuous element, with a consistent aesthetic concept throughout the approach and main spans  
                           | - The structure is all steel end to end, has a 10’’ full deck, open and airy aesthetics, and a lower approach on the Rockland side |
| OPERATIONS                | - Bridge inspection and maintenance access plan is better  
                           | - Plan for temporary facilities is superior |
| ENVIRONMENTAL             | Dredging plan significantly reduces size of dredge prism, amount of spoils for disposal, and impact on riverbed habitats |
| EXPERIENCE OF THE FIRM    | Past project experience is more directly relevant to this type of construction |

**Niagara’s Advantages over Oneida**

*Source: New York State Thruway Authority (2012)*
## Best-value Tradeoff Comparison

<table>
<thead>
<tr>
<th>Element</th>
<th>Aspects of Superior Solution</th>
</tr>
</thead>
</table>
| SERVICE LIFE             | Overall service life is potentially superior:  
|                          | • Integral deck design for the approach spans gives more confidence in achieving service-life target  
|                          | • Higher quality protective coating for structural steel at main span  
|                          | • Extensive use of pre-cast concrete elements  
|                          | • Stiffer structure provides better deflection performance  
|                          | • Additional deck thickness/increase in concrete cover at approach and main span  |
| MAXIMIZING PUBLIC INVESTMENT | Features of Potential Future Loading options on the main span:  
|                          | • Relatively simple addition of cable strands  
|                          | • Continuation of gap between structures into Rockland  
|                          | • Lower future main-span costs  
|                          | • Highway deck supports LRT; provides more flexibility  |
| BRIDGE AESTHETICS        | Oneida has proposed larger belvederes  |
| GEOTECHNICAL            | • More robust foundations and towers for initial construction  
|                          | • Foundation solution is preferable and more conservative  |

Source: New York State Thruway Authority (2012)
Debriefing is a key component in keeping the process transparent
NYSDOT uses one-on-one meetings for debriefings with all proposers
Debriefings are conducted after awarding the contract
Debriefings are conducted by a procurement official familiar with the rationale for the selection decision and contract award
Debriefings should provide information on areas in which the unsuccessful proposer’s technical proposal had weaknesses or deficiencies
Too many factors or sub-factors dilute the selection criteria

The agency needs to develop a well-defined and comprehensive RFP

Formally publishing all questions submitted by proposers along with responses improves transparency

One-on-one meetings are very beneficial for improving transparency

Sharing all technical scores and prices will significantly support transparency and fairness of best value selection
Conclusions and Discussion
Conclusions

- Evaluation criteria that support transparency
  - Use the minimum number of criteria
  - Are clear, easy to understand, project-specific and quantitative
  - Convey the weights of evaluation criteria directly in the RFP

- Selection methods that support transparency
  - *Direct point* evaluation rating system
  - *Quantitative cost-technical tradeoff* award algorithms

- Establish a balance of technical members in evaluation committees
Conclusions

- Enhance communication to promote transparency
- Provide evaluation comments that are specific, concise, and tied to scoring
- Conduct timely and detailed debriefings
- Collaborate with industry in program development and maintenance
- Clear and comprehensive evaluation plans are a key
- Conduct training to promote transparency, consistency and fairness
Questions
Practices for Developing Transparent Best Value Selection Procedures

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April 27, 2016