Performance Based Construction Contractor Prequalification

NCHRP SYNTHESIS 39-04
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Objective

Develop a performance based prequalification program that furnishes an incentive for good contractor performance while influencing marginal contractors to improve their performance to remain competitive in the industry and adds value to the completed construction project.
Methodology

- Literature review
- Survey of US DOTs and Canadian MOTs
- Content analysis of US administrative prequalification forms
- Content analysis of US & Canadian RFQs
- Structured interviews with US & Canadian contractors
Survey Responses
## Contractor Interviews

<table>
<thead>
<tr>
<th>Location</th>
<th>Type Work</th>
<th>Annual Volume</th>
<th>Experience with Performance Based Prequalification</th>
<th>Support Performance Based Prequalification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta</td>
<td>Regional General Contractor</td>
<td>&lt;$250 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>California</td>
<td>National General Contractor</td>
<td>&gt;$500 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Colorado</td>
<td>National General Contractor</td>
<td>&gt;$500 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Florida</td>
<td>National General Contractor</td>
<td>&gt;$500 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Idaho</td>
<td>National General Contractor</td>
<td>&gt;$500 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Michigan</td>
<td>Local Microsurfacing Contractor</td>
<td>&lt;$20 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Missouri</td>
<td>Regional Chip Seal Contractor</td>
<td>&lt;$100 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Nebraska</td>
<td>National General Contractor</td>
<td>&gt;$500 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Local Paving Contractor</td>
<td>&lt;$100 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Texas</td>
<td>Regional General Contractor</td>
<td>&lt;$100 million</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Prequalification Universe

Prequalification factors apply to all projects

Some factors apply to all projects – Others are project-specific

Prequalification factors apply to one project

General Performance Based Prequalification
- Financial factors
- Insurance factors
- Bond factors
- Past timely completion factors
- Safety record factors
- Others as appropriate

Hybrid Prequalification
- Two Envelope Method
- A+C Bidding

Project-Specific Performance Based Prequalification
- Technical factors
- Past project factors
- Key personnel factors
- Plant/equipment factors
- Others as appropriate
Prequalification Types

- Administrative
  - Financials
  - Insurances
  - Admin Information

- Performance based
  - Post Project evaluations
  - Experience

- Project-specific
  - Critical qualifications for particular project
3-Tiered Prequal Process

Tier 1: Administrative Prequalification

- Determine Financial Capacity
  - Financial Data
  - Bank Statements
  - Financial Analysis
  - Financial Capacity Factor Meets Minimum Req'ts?
    - Yes: Administrative Prequalification
    - No: Disqualified

Tier 2: Performance Based Prequalification

- Determine Bonding, Surety, & Insurance Capacity
  - Bonds
  - Surety Statements
  - Insurance Statements
Tier 1: Administrative Prequalification

- Determine Managerial Ability
- Key Personnel Data
- Technical Ability Data
- Past Illegal Behavior Data
- Management Plans Data

Performance Analysis

- Meets Minimum Req'ts?
  - Yes: Performance Based Prequalification
  - No: Adjust Financial Qualification

- Exceeds Minimum Req'ts: Adjust Bonding Req'ts

Tier 3: Project Specific Prequalification (if req'd)

Determine Performance Record

Past Project Evaluation Data

Contractor Performance Evaluation System
Tier 3 Details

Tier 2: Performance Based Prequalification

- Determine Project-Specific Qualifications
- Key Personnel Data
- Technical Ability Data
- Past Project Experience Data
- Management Plans Data
- Other Req’d Data

Project-Specific Qualification Analysis

- Meets Minimum Req’ts?
  - No → Disqualified
  - Yes → Furnish Req’d Bonds, etc?
  - No
    - Yes → Project-Specific Performance Based Prequalification
  - Yes → Project-Specific Performance Based Prequalification
<table>
<thead>
<tr>
<th>Project Aspects</th>
<th>Better</th>
<th>No Change</th>
<th>Worse</th>
<th>No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of bidders</td>
<td>5%</td>
<td>37%</td>
<td>37%</td>
<td>21%</td>
</tr>
<tr>
<td>Material quality</td>
<td>37%</td>
<td>41%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td>Workmanship quality</td>
<td>59%</td>
<td>15%</td>
<td>0%</td>
<td>26%</td>
</tr>
<tr>
<td>Safety</td>
<td>46%</td>
<td>22%</td>
<td>0%</td>
<td>32%</td>
</tr>
<tr>
<td>Maintenance of traffic</td>
<td>34%</td>
<td>37%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Level/amount of agency inspection required</td>
<td>20%</td>
<td>54%</td>
<td>2%</td>
<td>24%</td>
</tr>
<tr>
<td>Timely project completion</td>
<td>44%</td>
<td>29%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>Timely construction submittal completion</td>
<td>39%</td>
<td>37%</td>
<td>0%</td>
<td>24%</td>
</tr>
<tr>
<td>Timely punchlist completion</td>
<td>41%</td>
<td>34%</td>
<td>0%</td>
<td>25%</td>
</tr>
<tr>
<td>Personnel experience</td>
<td>29%</td>
<td>42%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Personnel competence</td>
<td>37%</td>
<td>37%</td>
<td>2%</td>
<td>24%</td>
</tr>
<tr>
<td>Number of contractor initiated change order requests</td>
<td>17%</td>
<td>54%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Number of claims/disputes</td>
<td>24%</td>
<td>47%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Responsiveness on warranty call-backs</td>
<td>24%</td>
<td>35%</td>
<td>0%</td>
<td>41%</td>
</tr>
<tr>
<td>Achievement of DBE goals</td>
<td>32%</td>
<td>42%</td>
<td>2%</td>
<td>24%</td>
</tr>
<tr>
<td>Environmental compliance</td>
<td>27%</td>
<td>44%</td>
<td>0%</td>
<td>29%</td>
</tr>
<tr>
<td>Contractor cooperation with agency</td>
<td>44%</td>
<td>32%</td>
<td>0%</td>
<td>24%</td>
</tr>
<tr>
<td>Contractor cooperation with property owners</td>
<td>24%</td>
<td>49%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>Contractor cooperation with third party stakeholders</td>
<td>24%</td>
<td>49%</td>
<td>0%</td>
<td>27%</td>
</tr>
<tr>
<td>Contractor cooperation with public concerns</td>
<td>29%</td>
<td>44%</td>
<td>0%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Grey Shading Indicates Predominate Opinion
Conclusions

- Existing Admin Prequal systems contain many performance based components; transition should be smooth.
- “Soft” factors (managerial competence and past performance) are more important than the “Hard” aspects (bonding and financial status).
- Simplify process by including minor prequal factors in contractor eval system.
Conclusions

- Adjust (reduce) marginal contractors’ financial capacity – Adjust (reduce) good contractor’s bonding requirements

- Barriers to implementation are relatively few and primarily perceptional
  - Only negative seems to be reduced number of bidders as marginal contractors are eliminated