## Procurement Procedure Selection Workshop Summary

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| Workshop Summary | |
| Project Name: |  |
| Workshop Date: |  |
| Workshop Location: |  |
| Facilitator: |  |
| Procurement Procedure Selected: |  |

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| Workshop Participants | |
| Name | Email |
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## Procurement Procedure Selection Matrix

### Overview

This document provides a project procurement procedure selection approach for highway projects. The information below lists the procurement procedures followed by an outline of the process, instructions, and general forms for use by transportation agency (Agency) staff and project team members. By using these forms, a brief Procurement Selection Report can be generated for each individual project. The primary objectives of this tool are:

* Present a structured approach to assist Agencies in making procurement procedure decisions;
* Assist Agencies in determining if there is a dominant or optimal choice of a procurement procedure; and
* Provide documentation of the selection decision.

### Background

The procurement procedure is the process of selecting firms to purchase goods and services necessary to complete the various stages of design and construction of a project. The difference in the procurement procedures depends on whether quantitative factors, qualitative factors or a combination of the two are used to select a firm. Currently, there are many types and variations of procurement procedures available for publicly funded transportation projects. The most common systems are Low bid, Best Value, and QBS. No single procurement procedure method is appropriate for every project. Each project must be examined individually to determine how it aligns with the attributes of each available procurement procedure. The definitions below contain the three primary procurement procedures and a list of supplementary procurement procedures that are used in conjunction with one of the three primary procedures.

### Primary Procurement Procedures

*Low Bid* is the most traditional selection methodology for construction services where contractors submit bids on a project and the lowest “responsible and responsive” bidder is then awarded the contract.

*Best Value* is a selection strategy used to choose contractors where price and other factors are used to determine which proposal or bid would bring the highest or best value to the Agency. Relative weights for the different factors vary from project to project as does the relationship between price and the other factors.

*Qualifications-Based* selection is a process whereby an Agency selects a design professional based on experience, expertise and overall credentials to procure the most qualified firm or individuals for a given project. There is no cost proposal associated with choosing a firm. Costs are negotiated with the selected firm after procurement is complete, but before the contract is signed.

### Facilitation of the tool

When embarking on using the procurement procedure selection tool for the first time, it is recommended that a facilitator is brought in for the workshop. The facilitator will assist with working through the tool and provide guidance for discussing the project and selection of a procurement procedure. This individual should be knowledgeable about the process and should be consistently used. The facilitator also helps to answer questions and make sure the process stays on track and the team moves towards a formal selection.

### Participation

Using the procurement procedure selection matrix is only as good as the people who are involved in the selection workshop. Therefore, it is necessary to have a collection of different individuals to participate in the selection. The selection team needs to include the project manager, the project engineer, a representative of the procurement/contracting office, and any other STA staff that is crucial to the project. In addition, the selection team might want to consider including representatives from specialty units and from the local jurisdictions where the project is located. However, it is important to keep the selection team to a minimum amount of participants. Otherwise, the selection process can take a long time to complete. Normally, 3-7 people represent a selection team, but this number should be based on the specific project being analyzed.

### Potential bias

The best approach for the participants of the workshop is to keep an open mind about procurement procedure to choose. However, there might be participants that have a preconceived notion about the procurement procedure to use on a project. When this occurs, it is best to discuss that person’s ideas with the entire selection team at the beginning of the workshop. Putting that person’s ideas on the table helps others to understand the choice that person has in mind. Then, it is important to acknowledge this person’s ideas, but to remind that person to keep an open mind as the team works through the selection process.

### Pre-workshop Tasks

Before conducting the selection workshop, a few tasks can be completed by the workshop participants. Preparing for the workshop prior to conducting it will result in a much more concise and informative session. It is advised that participants review all known project information, goals, risks, and constraints prior to the workshop. The best approach is to complete the *Procurement Procedure Description*, the *Procurement Procedure Goals*, and the *Procurement Procedure Constraints* worksheets before conducting the workshop. Completing the three worksheets will shorten the time needed to review the project and allows the workshop team to move right into the selection process.

## Procurement Procedure Selection Process

The process is shown as an outline below and as a flowchart on the following page for reference. It consists of individual steps to complete the entire process. The steps should be followed in sequential order.

STAGE I – Project Attributes, Goals, and Constraints

1. Procurement procedures to consider
2. Low Bid
3. Best Value
4. Qualifications-Based
5. Project Description/Goals/Constraints
6. Describe the project
7. State the project delivery method selected
8. Set the project goals
9. Determine and review project dependent constraints

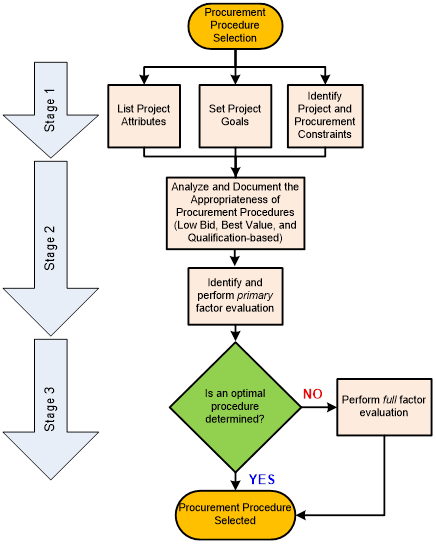
STAGE II – Determine Procurement Procedures and Selection Factors to Evaluate

1. Determine which of the eight factors need to be evaluated
2. Delivery Schedule
3. Complexity & Innovation
4. Level of Design
5. Cost
6. Assessment of Risk
7. Staff Experience and Availability
8. Level of Oversight and Control
9. Competition and Contractor Experience

STAGE III – Evaluate Factors

1. Assess each potential procurement procedure in regards to the factors determined to need evaluation
2. Review checklists for each factor being evaluated
3. If the above steps do not reveal an optimal procedure, proceed with evaluating remaining factors against all three potential procurement procedures

NOTE: Typically, the entire selection process can be completed by the project team in a 2 hour workshop session, as long as each team member has individually reviewed and performed the assessment prior to the workshop.



Flowchart of the Procurement Procedure Selection Process

## Procurement Procedure Selection Matrix Worksheets and Forms

The following forms and appendices are included to facilitate this process.

### Project procurement description worksheet

Provide information on the project. This includes size, type, funding, risks, complexities, etc. All information should be developed for the specific project.

### Project procurement goals worksheet – including example project goals

A careful determination of the project goals is an instrumental first step of the process that will guide both the selection of the appropriate procurement procedure for the project.

### Project procurement constraints worksheet – including example project constraints

Carefully review all possible constraints to the project. These constraints can potentially eliminate a procurement procedure before the evaluation process begins.

### Procurement procedure selection summary form

The procurement procedure selection summary form outlines the assessment of the eight selection factors for the three procurement procedures. The form is qualitatively scored using the rating provided in the table below. The form also includes a section for comments and conclusions.Thecompleted procurement procedures selection summary should provide an executive summary of the key reasons for the selection of the chosen procedure.

|  |  |
| --- | --- |
| Rating Key | |
| **++** | Most appropriate procurement procedure |
| **+** | Appropriate procurement procedure |
| **–** | Least appropriate procurement procedure |
| **X** | Fatal Flaw (discontinue evaluation of this procedure) |
| **NA** | Factor not applicable or not relevant to the selection |

### Workshop blank form

This form can be used by the project team for additional documentation of the process. In particular, it can be used to elaborate the evaluation of the *Assessment of Risk* factor.

### Procurement procedure selection factor opportunities / obstacles form

These forms are used to summarize the assessments by the project team of the opportunities and obstacles associated with each procurement procedure relative to each of the eight Selection Factors. The bottom of each form allows for a qualitative conclusion using the same notation as described above. Those conclusions then are transferred to the **Procurement Procedure Selection Summary.**

### Procurement procedure opportunities / obstacles checklists

These forms provide the project team with direction concerning typical procurement procedure opportunities and obstacles associated with each of the eight Selection Factors. However, these checklists include general information and are not an all-inclusive checklist. Use the checklists as a supplement to developing project specific opportunities and obstacles.

### Risk assessment guidance form

Because of the unique nature of the *Assessment of Risk factor*, this guidance section provides the project team with additional assistance for evaluation of the risk factor including: Typical Transportation Project Risks; a General Project Risks Checklist; and a Risk Opportunities / Obstacles Checklist.

## Project Procurement Description

The following items should be considered in describing the specific project. Other items can be added to the bottom of the form if they influence the procurement procedure decision. Relevant documents can be added as appendices to the final summary report.

|  |
| --- |
| Project Attributes |
| Project Name: |
|  |
| Location: |
|  |
| Estimated Budget: |
|  |
| Estimated Project Delivery Period: |
|  |
| Required Delivery Date (if applicable): |
|  |
| Source(s) of Project Funding: |
|  |
| Project Corridor: |
|  |
| Major Features of Work – pavement, bridge, sound barriers, etc.: |
|  |
| Major Schedule Milestones: |
|  |
| Major Project Stakeholders: |
|  |
| Major Obstacles (as applicable) |
|  |
| With Right of Way, Utilities, and/or Environmental Approvals: |
|  |
| During Construction Phase: |
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| Main Identified Sources of Risk: |
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| Safety Issues: |
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| Sustainable Design and Construction Requirements: |
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## Project Procurement Goals

An understanding of project goals is essential to selecting an appropriate procurement procedure. Typically, the project goals can be defined in three to five items. Example goals are provided below, but the report should include project-specific goals. These goals should remain consistent over the life of the project.

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| --- |
| Project-Specific Goals |
| Goal #1: |
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| Goal #2: |
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| Goal #3: |
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| Goal #4: |
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| Goal #5: |
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### General Project Goals (For reference)

Schedule

* Minimize project delivery time
* Complete the project on schedule
* Accelerate start of project revenue

Cost

* Minimize project cost
* Maximize project budget
* Complete the project on budget
* Maximize the project scope and improvements within the project budget

Quality

* Meet or exceed project requirements
* Select the best team
* Provide a high quality design and construction constraints
* Provide an aesthetically pleasing project

Functional

* Maximize the life cycle performance of the project
* Maximize capacity and mobility improvements
* Minimize inconvenience to the traveling public during construction
* Maximize safety of workers and traveling public during construction

## Project Procurement Constraints

There are potential aspects of a project that can eliminate the need to evaluate one or more of the possible procurement procedures. A list of general constraints can be found below the table and should be referred to after completing this worksheet. The first section below is for general constraints and the second section is for constraints specifically tied to procurement selection.

|  |
| --- |
| General Constraints |
| Source of Funding: |
|  |
| Schedule constraints: |
|  |
| Federal, state, and local laws: |
|  |
| Third party agreements with railroads, ROW, etc: |
|  |
| Procurement Specific Constraints |
| Procurement constraint #1: |
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| Procurement constraint #2: |
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| Procurement constraint #3: |
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| Procurement constraint #4: |
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| Procurement constraint #5: |
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### General Project Constraints

Schedule

* Utilize federal funding by a certain date
* Complete the project on schedule
* Weather and/or environmental impact

Cost

* Project must not exceed a specific amount
* Minimal changes will be accepted
* Some funding may be utilized for specific type of work (bridges, drainage, etc)

Quality

* Must adhere to standards proposed by the Agency
* High quality design and construction constraints
* Adhere to local and federal codes

Functional

* Traveling public must not be disrupted during construction
* Hazardous site where safety is a concern
* Return area surrounding project to existing conditions

## Procurement Procedure Selection Summary

Determine the factors that need to be evaluated in the procurement procedure selection, taking into account the project delivery method that will be used. Then, discuss the opportunities and obstacles related to each selection factor, and document the discussion on the following pages. At the conclusion of the evaluation, complete the summary table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PROCUREMENT PROCEDURES OPPORTUNITY/OBSTACLE SUMMARY | | | | |
|  | Evaluate Factor?  (Circle One) | Low Bid | Best Value | Qualifications-Based |
| **Selection Factors** |  |  |  |  |
| 1. Delivery Schedule | Yes No |  |  |  |
| 2. Project Complexity & Innovation | Yes No |  |  |  |
| 3. Level of Design | Yes No |  |  |  |
| 4. Cost | Yes No |  |  |  |
| 5. Assessment of Risk | Yes No |  |  |  |
| 6. Staff Experience and Availability | Yes No |  |  |  |
| 7. Level of Oversight and Control | Yes No |  |  |  |
| 8. Competition and Contractor Experience | Yes No |  |  |  |

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| --- | --- |
| Rating Key | |
| **++** | Most appropriate procurement procedure |
| **+** | Appropriate procurement procedure |
| **–** | Least appropriate procurement procedure |
| **X** | Fatal Flaw (discontinue evaluation of this procedure) |
| **NA** | Factor not applicable or not relevant to the selection |

## Procurement Procedure Selection Summary Conclusions and Comments

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## Procurement Procedure Selection Matrix Factors

### 1) Delivery Schedule

Delivery schedule is the overall project schedule from scoping through design, construction and opening to the public. For procurement, consider the length of time needed to develop the RFP, proposal development, and evaluation. Assess time considerations for starting the project or receiving dedicated funding and assess project completion importance.

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| **LOW BID** – The shortest duration of competitive procurement methods. One factor to consider, cost, and this is the most traditional method that many understand. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** Procurement period is the longest for this method. Additional time needed for bids to be prepared as well as evaluating and Rating proposals. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Requires time to evaluate qualitative factors. Clarifications for some of the bids may be needed, which can extend the letting period. | | |
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### 2) Project Complexity and Innovation

Project complexity and innovation is the potential applicability of new designs or processes to resolve complex technical issues.

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| **LOW BID** – The traditional letting approach. Does not allow for additional factors to be considered such as innovative designs and alternative technical concepts. Useful for low complexity projects that do not need additional innovations to complete. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** A quantitative and qualitative procurement method that allows for additional factors such as innovative designs and techniques to be provided in the proposals. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Useful for projects that do not have a complete bid package or where a complete bid package cannot be feasibly developed due to complexities and necessary innovations. | | |
| Opportunities | Obstacles | Rating |
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### 3) Level of Design

Level of design is the percentage of design completion at the time of the project delivery procurement.

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| **LOW BID** – Design needs to be complete, or near complete, and accurate so that firms can responsibly prepare cost bids. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** Very little design needs to be complete before advertising the RFP. Plans do not need to be fully detailed as the RFP requirements can include design alternatives. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Very little or no design needs to be complete as firms are selected based on other factors besides cost and schedule. | | |
| Opportunities | Obstacles | Rating |
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### 4) Cost

Project cost is the financial process related to meeting budget restrictions, early and precise cost estimation, and control of project costs.

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| **LOW BID** – Competitive bidding on costs can provide for low construction costs based on a fully defined design and scope. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** Development of the RFP needs to be complete and accurate so that cost changes are minimized. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Procurement only evaluates factors such as past experience, reputation, financial stability, and does not include cost. | | |
| Opportunities | Obstacles | Rating |
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### 5) Initial Risk Assessment

Risk is an uncertain event or condition that, if it occurs, has an effect on a project’s objectives. Risk allocation is the assignment of unknown events or conditions to the party that can best manage them. An assessment of project risks is important to ensure the selection of a procurement procedure that can properly address them.

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| **LOW BID** – Evaluation of proposals only considers cost and does not include any information on how a bidding firm will address any risks. Agencies can allocate more risks to the contract, but that will be reflected in the bids. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** The RFP can request risk management plan, which provides the agency with an understanding of how the project team will allocate and manage risks. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Selection can consider past performances with project risks and can request information on how the qualifying firm plans to manage risks on the project. | | |
| Opportunities | Obstacles | Rating |
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### 6) Staff Experience and Availability

Agency staff experience and availability as it relates to the procurement procedure in question.

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| **LOW BID** – This is the traditional method that most Agencies have a plethora of experience and knowledge. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** This is a more extensive process that Agencies may not have the experience or knowledge to use. Additional resources will be needed to develop the RFP and evaluate received proposals. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – This can be an unknown procedure in how to evaluate subjective factors. Experience by Agencies in this procedure is low. | | |
| Opportunities | Obstacles | Rating |
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### 7) Level of Oversight and Control

Level of oversight involves the amount of agency staff required to develop the procurement documents, and the amount of agency staff required to evaluate received proposals/bids.

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| **LOW BID** – Minimal amount of staff and time required to develop procurement documents and evaluation typically only requires reviewing the cost amount submitted by bidding firms. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** Additional staff and time is required to develop the criteria for the RFP. Evaluation of proposals is extensive and requires additional resources that when evaluating cost alone. Agency does have more control over what to require of proposing firms. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Minimal amount of staff and time required to create the RFQ. Additional staff and time is needed to evaluate the qualifications. Agency has control over what to require of qualifying firms. | | |
| Opportunities | Obstacles | Rating |
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### 8) Competition and Contractor Experience

Competition and availability refers to the level of competition, experience and availability in the market place and its capacity for the project and associated procurement procedure.

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| **LOW BID** – Firms are most familiar with this procedure and it promotes a high level of competition. | | |
| Opportunities | Obstacles | Rating |
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| **BEST VALUE –** Provides a balance of qualifications and costs. Promotes fair competition among firms. However, many firms may not be familiar with this procedure and are unable to responsibly provide a proposal. | | |
| Opportunities | Obstacles | Rating |
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| **QUALIFICATIONS-BASED** – Provides for qualifying firms in selection. This can lead to limited competition and unfamiliarity by firms. | | |
| Opportunities | Obstacles | Rating |
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## Procurement Procedure Selection Factors Opportunities and Obstacles Checklists

**(With project risk assessment and checklists)**

### 1) Delivery Schedule Procurement Procedure Selection Checklist

|  |  |
| --- | --- |
| Low Bid | |
| Opportunities | Obstacles/Risks |
| Traditional method that requires the shortest procurement time  Allows for projects to be more easily “shelved”  Reduced time required to deliver project to advertisement | May lead to potential delays and other adverse outcomes  Unreported design errors or omissions may lead to change orders and schedule delays  Rebidding a project increases the procurement time and overall schedule may be delayed |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Well developed and planned schedules are available if schedule is one of the parameters requested in the RFP  Overall project schedule can be compressed  Positive impact on cost, quality, schedule, and flexibility  Shifts risks to awarded firm  Helps to promote innovation, especially in project schedule | Request for proposal development and procurement can be intensive  Undefined events or conditions found after procurement can impact schedule and cost  Requires agency and stakeholder commitments to an extensive review of proposals in a timely manner  Time required to define technical requirements and expectations through RFP development can be intensive  Bidding firms may utilize more resources to develop a complete project schedule, which could increase bid costs |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Overall project schedule can be compressed  Less time required for procurement if firms are pre-qualified | Award process can be lengthy if negotiating with multiple firms  Iterative process until an agreement is reached |

### 2) Project Complexity and Innovation Procurement Procedure Selection Checklist

|  |  |
| --- | --- |
| Low Bid | |
| Opportunities | Obstacles/Risks |
| Useful for projects that require little or no innovation  Complex design can be resolved and competitively bid on cost  Innovations can add cost or time | Diminishes innovation in design and construction |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Greater opportunity for innovation and improvements in quality  Can request solutions to project complexities in RFP  Innovative opportunities to allocate risks to different parties in RFP requirements (e.g., schedule, means and methods, phasing) | Qualitative factors can be difficult to define and evaluate  Some potential design solutions might be too innovative or difficult to evaluate properly  Requires desired solutions to complex designs to be well defined through technical requirements (difficult to do)  Innovations can add cost or time  Over utilizing performance specifications to enhance innovation can risk quality through reduced technical requirements  Complexity and subjectivity may increase opposition from unsuccessful bidders |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Works well will projects where complexity, technical risks and/or evolving scope make it difficult to prepare a clear and accurate bid package to procure using competitive pricing  Risk of innovation can be better defined, minimized, and allocated during negotiations |  |

### 3) Level of Design Procurement Procedure Selection Checklist

|  |  |
| --- | --- |
| Low Bid | |
| Opportunities | Obstacles/Risks |
| Traditional method requiring the design to be complete or near complete by the agency for accurate bidding  Scope of the project is well defined with complete plans and specifications | Design must be complete and accurate as design errors or omissions may lead to change orders and schedule delays |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Very little design needs to be complete  Plans do not have to be as detailed because the RFP can request further design alternatives | Must have very clear definitions and requirements in the RFP because it is the basis for the contract  Potential for lacking or missing scope definition if RFP not carefully developed  Can create less standardized project designs across agency as a whole due to different design requirements  The majority of the design to be completed by design-builder |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Can utilize a lower level of design prior to selecting a firm then collaboratively advance design with the agency and project team | Trust that the contractor will provide useful input during design |

### 4) Cost Project Procurement Procedure Checklist

|  |  |
| --- | --- |
| Low Bid | |
| Opportunities | Obstacles/Risks |
| Competitive bidding provides low cost construction to a fully defined scope of work  Low bid amount received is used as contract amount  Can reduce overall engineering costs | Unreported design errors or omissions may lead to change orders and schedule delays  Accuracy of bids is limited unless design is complete and accurate  Increased risk to Agency that all received bids will exceed budget |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Complete and accurate requirements in the RFP can help to reduce change orders in number and magnitude during construction  Agency runs the risk of higher initial costs, but risk of poor quality is reduced  Cost is not the only primary factor to consider in evaluating received proposals  Can reduce engineering costs | Undefined events or conditions found after procurement can impact schedule and cost  Increased cost to prepare proposal can limit responsive firms  Cost to prepare proposal can be substantial, resulting in increased bid amounts |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Agency does not have to award to lowest, responsive bidder  Only evaluating qualitative factors, no cost to consider | Procurement does not include cost portion in proposals  Subjective selection based on qualitative factors only |

### 5a) Risk Assessment Guidance

Three sets of risk assessment checklists are provided to assist in an initial risk assessment relative to the selection of the procurement procedure:

* Typical Transportation Project Risks
* General Project Risks Checklist
* Opportunities/Obstacles Checklist (relative to each procurement procedure)

It is important to recognize that the initial risk assessment is to only ensure the selected procurement procedure can properly address the project risks. A more detailed level of risk assessment should be performed concurrently with the development of the procurement documents to ensure that project risks are properly allocated, managed, and minimized through the procurement and implementation of the project.

#### Typical Transportation Project Risks

Following is a list of project risks that are frequently encountered on transportation projects and a discussion on how the risks are resolved.

##### 1) Site Conditions and Investigations

How unknown site conditions are resolved. For additional information on site conditions, refer to 23 CFR 635.109(a) at the following link:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=91468e48c87a547c3497a5c19d640172&rgn=div5&view=text&node=23:1.0.1.7.23&idno=23#23:1.0.1.7.23.1.1.9>

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| DBB with LOW BID  Site condition risks are generally best identified and mitigated during the design process prior to procurement to minimize the potential for change orders and claims when the schedule allows. |

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| DB with BEST VALUE  Certain site condition responsibilities can be allocated to the contractor provided they are well defined and associated third party approval processes are well defined. Caution should be used as unreasonable allocation of site condition risk will result in high contingencies during bidding. The Agency should perform site investigations in advance of procurement to define conditions and avoid duplication of effort by proposers. At a minimum, the Agency should perform the following investigations:   1. Basic design surveys 2. Hazardous materials investigations to characterize the nature of soil and groundwater contamination 3. Geotechnical baseline report to allow the contractors to perform proposal design without extensive additional geotechnical investigations |

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| CMGC with QUALIFICATIONS-BASED  The agency, the designer, and the contractor can collectively assess site condition risks, identify the need to perform site investigations in order to reduce risks, and properly allocate risk. |

##### 2) Utilities

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| DBB with LOW BID  Utility risks are best allocated to the Agency, and mostly addressed prior to procurement to minimize potential for claims when the schedule allows. |

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| DB with BEST VALUE  Utilities responsibilities need to be clearly defined in contract requirements, and appropriately allocated to both the contractor and the Agency:  *Private utilities (major electrical, gas, communication transmission facilities*): Need to define coordination and schedule risks, as they are difficult for design-builder to price. Best to have utilities agreements before procurement. Note – by state regulation, private utilities have schedule liability in design-build projects, but they need to be made aware of their responsibilities.  *Public Utilities*: Design and construction risks can be allocated to the design-builder, if properly incorporated into the contract requirements. |

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| CMGC with QUALIFICATIONS-BASED  Can utilize a lower level of design prior to contracting and joint collaboration of Agency, designer, and contractor in the further development of the design. |

##### 3) Railroads (if applicable)

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| DBB with LOW BID  Railroad risks are best resolved prior to procurement and relocation designs included in the project requirements when the schedule allows. |

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| DB with BEST VALUE  Railroad coordination and schedule risks should be well understood to be properly allocated and are often best assumed by the Agency. Railroad design risks can be allocated to the designer if well defined. Best to obtain an agreement with railroad defining responsibilities prior to procurement |

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| CMGC with QUALIFICATIONS-BASED  Railroad impacts and processes can be resolved collaboratively by Agency, designer, and contractor. A lengthy resolution process can delay the GMP negotiations. |

##### 4) Drainage/Water Quality Best Management Practices (construction and permanent)

Both drainage and water quality often involve third party coordination that needs to be carefully assessed with regard to risk allocation. Water quality in particular is not currently well defined, complicating the development of technical requirements for projects.

Important questions to assess:

1. Do criteria exist for compatibility with third party offsite system (such as an OSP (Outfall System Plan))?
2. Is there an existing cross-drainage undersized by design Criteria?
3. Can water quality requirements be precisely defined? Is right-of-way adequate?

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| DBB with LOW BID  Drainage and water quality risks are best designed prior to procurement to minimize potential for claims when the schedule allows. |

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| DB with BEST VALUE  Generally, the Agency is in the best position to manage the risks associated with third party approvals regarding compatibility with offsite systems, and should pursue agreements to define requirements for the design-builder. |

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| CMGC with QUALIFICATIONS-BASED  The Agency, the designer, and the contractor can collectively assess drainage risks and coordination and approval requirements, and minimize and define requirements and allocate risks prior to GMP. |

##### 5) Environmental

Meeting environmental document commitments and requirements, noise, 4(f) and historic, wetlands, endangered species, etc.

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| DBB with LOW BID  Risk is best mitigated through design prior to procurement when the schedule allows. |

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| DB with BEST VALUE  Certain environmental approvals and processes that can be fully defined can be allocated to the design-builder. Agreements or MOUs with approval agencies prior to procurement is best to minimize risks. |

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| CMGC with QUALIFICATIONS-BASED  Environmental risks and responsibilities can be collectively identified, minimized, and allocated by the Agency, the designer, and the contractor prior to GMP |

##### 6) Third Party Involvement

Timeliness and impact of third party involvement (funding partners, adjacent municipalities, adjacent property owners, project stakeholders, FHWA, PUC).

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| DBB with LOW BID  Third party risk is best mitigated through design process prior to procurement to minimize potential for change orders and claims when the schedule allows. |

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| DB with BEST VALUE  Third party approvals and processes that can be fully defined can be allocated to the design-builder. Agreements or MOUs with approval agencies prior to procurement is best to minimize risks. |

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| CMGC with QUALIFICATIONS-BASED  Third party approvals can be resolved collaboratively by the Agency, designer, and contractor. |

### 5b) General Project Risk Checklist (Items to consider when assessing risk)

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| Environmental Risks | External Risks |
| Delay in review of environmental documentation  Challenge in appropriate environmental documentation  Defined and non-defined hazardous waste  Environmental regulation changes  Environmental impact statement (EIS) required  NEPA/ 404 Merger Process required  Environmental analysis on new alignments required | Stakeholders request late changes  Influential stakeholders request additional needs to serve their own commercial purposes  Local communities pose objections  Community relations  Conformance with regulations/guidelines/ design criteria  Intergovernmental agreements and jurisdiction |
| Third-Party Risks | Geotechnical and Hazmat Risks |
| Unforeseen delays due to utility owner and third-party  Encounter unexpected utilities during construction  Cost sharing with utilities not as planned  Utility integration with project not as planned  Third-party delays during construction  Coordination with other projects  Coordination with other government agencies | Unexpected geotechnical issues  Surveys late and/or in error  Hazardous waste site analysis incomplete or in error  Inadequate geotechnical investigations  Adverse groundwater conditions  Other general geotechnical risks |
| Right-of-Way/ Real Estate Risks | Design Risks |
| Railroad involvement  Objections to ROW appraisal take more time and/or money  Excessive relocation or demolition  Acquisition ROW problems  Difficult or additional condemnation  Accelerating pace of development in project corridor  Additional ROW purchase due to alignment change | Design is incomplete/ Design exceptions  Scope definition is poor or incomplete  Project purpose and need are poorly defined  Communication breakdown with project team  Pressure to delivery project on an accelerated schedule  Constructability of design issues  Project complexity – scope, schedule, objectives, cost, and deliverables – are not clearly understood |
| Organizational Risks | Construction Risks |
| Inexperienced staff assigned  Losing critical staff at crucial point of the project  Functional units not available or overloaded  No control over staff priorities  Lack of coordination/ communication  Local agency issues  Internal red tape causes delay getting approvals, decisions  Too many projects/ new priority project inserted into program | Pressure to delivery project on an accelerated schedule.  Inaccurate contract time estimates  Construction QC/QA issues  Unclear contract documents  Problem with construction sequencing/ staging/ phasing  Maintenance of Traffic/ Work Zone Traffic Control |

### 5c) Assessment of Risk Procurement Procedure Selection Opportunities/Obstacles Checklist

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| Low Bid | |
| Opportunities | Obstacles/Risks |
| Risk allocation is most widely used and understood  When design is complete, opportunity to avoid or mitigate risks | Low bid related risks  Agency needs to resolve risks related to environmental, railroads and third party involvement before procurement begins  Agency responsible for addressing ROW and utilities risks before beginning procurement  Contractor has the ability to avoid risks |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Innovative opportunities to allocate risks to bidding firms  Eliminates low bid risks  Can define risk/reward structure in RFQ/RFP  Contractor can identify risks related to environmental, railroads, ROW, and utilities  Contractors can propose innovative solutions to eliminate or mitigate risks | Need a detailed project scope, description and any other necessary information for the RFP so that accurate, complete, and comprehensive responses are received  Introduces risks associated with the agreement when design is not complete or alternate solutions are to be used |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Eliminates low bid risks  Bidders can help to identify project risks | High cost risks, as no quantitative factors to base a selection on  If an agreement cannot be negotiated, then low bid risks appear |

### 6) Staff Experience and Availability Procurement Procedure Selection Checklist

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| Low Bid | |
| Opportunities | Obstacles/Risks |
| Traditional method that Agency staff knows and understands  Less Agency resources needed for developing request for proposal and evaluating received bids  Reduces Agency construction administrative staffing | Additional Agency administrative efforts needed to ensure compliance with documentation requirements |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Provides Agency staff with experience in developing Best Value proposals and evaluating received proposals  Opportunity to grow agency staff by learning a new process  Ability to tailor the evaluation plan to the specific needs of a project | Agency staff may need training on how to evaluate proposals  High amount of agency management and technical resources needed for RFP development  Inexperienced agency staff can increase the organizational risk  Legislation may need to be enacted to use best value legally |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Similar procurement procedure in selecting design professionals  Works well for projects where Agency cannot develop full bid packages  Provides for more interaction with bidding firms | Agency staff may be unfamiliar with this procedure for selecting contractors  Additional Agency management is needed for negotiations and qualification factor development  Additional Agency management is required |

### 7) Level of Oversight and Control Procurement Procedure Selection Checklist

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| Low Bid | |
| Opportunities | Obstacles/Risks |
| Oversight roles well understood  Few resources needed to evaluate and award project | Agency must select the lowest, responsive bid, regardless of other factors |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Bidders provide input to enhance constructability and innovation  Cost, schedule, and other factors determined by bidding firms  Agency has full control over awarding project | Requires more Agency resources to develop RFP  Requires more Agency resources to evaluate proposals  Less Agency control over final design  Control of design relies on the proper development of RFQ and RFP |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Agency controls procurement process by evaluating qualitative factors  Agency has full control over awarding project | Agency must have experienced staff to oversee the procurement process  Agency cannot control negotiations with potential firms |

### 8) Competition and Contractor Experience Procurement Procedure Selection Checklist

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| Low Bid | |
| Opportunities | Obstacles/Risks |
| Promotes high level of competition in the marketplace  Opens construction to all reasonably qualified bidders  Contractors are familiar with Low Bid process  Definable and defensible (objective) award | Risks associated with selecting the low bid (the best contractor is not necessary selected)  Limited ability to select a contractor on qualifications  Increased likelihood of disputes and claims by contractors |
| Best Value | |
| Opportunities | Obstacles/Risks |
| Allows a balance of qualifications and cost  Fair competition and performance-based accountability  Helps to assure the Agency is selecting a capable and qualified firm | Less contractors are familiar with the qualitative aspects of proposals  Increased cost to prepare proposal can limit responsive firms  Complexity and subjectivity may increase opposition from unsuccessful bidders  Difficult to use on public projects as objective competition is required to select contractor without additional legislation  Smaller firms can be limited in participation  Highly subjective evaluation of qualitative factors  Qualitative factors leave room for human error or biases  Lowest cost bidder may not receive award, resulting in opposition |
| Qualifications-Based | |
| Opportunities | Obstacles/Risks |
| Allows for Qualitative procurement of contractors  Focuses on contractor abilities  Bid transparency  Only have to negotiate with one firm on contract | Limited ability to select a contractor based on cost  Qualifying firms can limit competition  Difficult to use on public projects as objective competition is required to select contractor without additional legislation  Potential for upset, non-awarded firms due to subjectivity evaluation of qualitative factors  Smaller firms can be limited in participation |