

PROJECT SCOPING WITH VALUE ANALYSIS METHODOLOGY

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ABSTRACT

In 1998, the Flood Control District of Maricopa County, Arizona initiated a Project Scoping procedure, based on the Value Analysis Methodology. The procedure is used to refine the Scopes of Work of Consulting Contracts and match the Scopes with the necessary level of effort. The application of the Value Analysis Methodology has been the key to developing this procedure.

This Paper explains the application of the VA methodology as applied to a Consultant's Contract Scoping and Fee Negotiations. The benefits of the scoping process are presented, by comparing the scoping method with the District's previous method of Consultant Contract negotiations.

INTRODUCTION

Selection of Consulting Firms and Contract Negotiations with the selected firms are among the most difficult, time consuming and often controversial activities with which public agencies have to deal with. One of the major problems in negotiating a Consultant Contract is the difficulty of developing an accurate Scope of Work.

The Scope of Work is the heart and sole of the Contract. The scope identifies all the required tasks and deliverables of the Project.

The Projects at the Flood Control District of Maricopa County, Arizona (the District) are usually complex, one of a kind, highly technical engineering

studies and construction documents. Projects require multi-discipline teams, which might include surveyors and mappers, geotechnical and environmental specialists, hydrologists, civil engineers and landscape architects.

The selection of consultants for a particular Project is a qualification based selection (QBS) process. Law requires that the fee be negotiated after the selection of the highest qualified consultant.

Fee negotiations revolve around the Tasks described in the Scope of Work and the estimated man-hours required to accomplish them. It is very difficult to develop a Scope of Work that will cover all activities in such detail that it will not require later modifications, and re-work during execution of the Contract. Negotiations have taken as much as 3 to 6 months in the past to achieve a balance between the Scope of Work's requirements with the associated man-hours, and to reach agreement between the District and the Consultant's team on the appropriate level of effort, methods of approach and end products.

To reduce this contracting cycle, the District initiated 3 to 4 day Value Engineering based formal Scoping Meetings prior to final negotiation with the selected Consultant.

CONSULTANT SELECTION

The selection process follows the federal procurement code for Qualification Based Selection (QBS). To demonstrate the impact, typical sequences of activities with approximate duration for selection of Consultants are shown with and without the Scoping Meetings.

- Day 01: Requests for Letters of Interests (LOI) sent to Consultants
- Day 30: Receive LOI's
- Day 37: Complete review of LOI's
- Day 38: Conduct a Short Listing Meeting (Select 4-5 firms from the LOI's)
- Day 39: Notify the Short Listed Consultants
- Day 42: Provide the Short Listed Consultants with: Scope of Work, Sample Contract, dates for the interviews and a request for a Technical Proposal, including man-hour estimate.
- Day 56: Receive Technical Proposals and man-hour estimates.
- Day 62: Complete reviews of the Technical Proposals
- Day 63 & 64: Conduct interviews in the Consultants' offices.
- Day 64: Make Selection of the most qualified Consultant

- Day 65: Notify all consultants of the results of the selection

The Old Way:

- Day 72: Receive Fee Proposal
- Day 79: First Fee Negotiation Meeting
- Day 86: Second Fee Negotiation Meeting
- Day 87 - 190 ±: Repeated meetings and re-submittals of fee proposal
- Day 190 ±: Conclude fee negotiation and approve final fee proposal
- Day 192: Finalize contract documents and submit to the Consultant and may begin in-house routing of documents
- Day 199: Receive signed contract from the Consultant
- Day 216: Process contract documents for submittal to Management
- Day 223: Management approval of the contract
- Day 224: Notice to proceed sent to the Consultant

Total time requirement: approximately **224 days**

The New Way:

- Day 68: Scoping Meeting – first day
- Day 69: Scoping Meeting – second day
- Day 71: Scoping Meeting – last day
- Day 74: Receive final fee proposal
- Day 78: Conclude fee negotiations and approve final fee proposal
- Day 80: Finalize contract documents, submit to the consultant and begin in-house routing of documents
- Day 87: Receive signed contract from the Consultant
- Day 94: Process contract documents for submittal to Management
- Day 113: Management approval of the contract
- Day 120: Notice to proceed sent to the Consultant

Total time requirement: approximately **120 days**

Difference: 104 day (46%) reduction in the consultant selection process.

NEGOTIATION

As seen in the previous section, the negotiation will remain as part of the Contracting process. However, by adopting the Scoping Meetings, the ambiguities and differences in interpretation of the District's requirements and the Consultant's approach to solving the problem are cleared up prior to Final Fee Negotiation. By refining the Scope of Work, and agreeing on the Level of Effort, the most contentious items causing significant aggravation, re-work and lost time in the past are removed, and the process is expedited.

Solutions to complex problems that are technical and require the entire multi-discipline team to work out can not be scoped out without the participation of all the key technical experts. This is the reason why in the past, it has taken several months in some instances to work out the scope of work in contracts. At the end both sides were exhausted and the atmosphere poisoned and adversarial. This is not the best way to start any project.

The Scoping meeting not only resolves Scoping and Level of Effort issues, but also builds relationships and mutual respect between team members as well as the District representatives.

The "New Way" of negotiation becomes a process that deals primarily with project issues. Other costs such as Overhead, Direct Costs and the Profit are handled routinely, without delay and controversy. There is always exception to everything, but in our experiences these "other" items are less time-consuming than the old arguments over the Scopes and the related Man-hour Estimates.

SCOPING

The selected consultant is congratulated for being selected, and requested to attend the Scoping Meeting within three days after the selection notification.

The prime consultant and the key sub-consultants are expected to send representatives in all the major technical areas of specialization and spend 2 to 3 days in an isolated environment with the District's Project Manager and technical staff under the leadership of a Value Engineer acting as Team Leader / Facilitator. A Principal of the firm usually represents the Prime Consultant, along with the technical team members. The District is similarly represented by the Project Manager and technical specialty group personnel.

Additional participants for at least part of the Scoping Meeting may include representatives of other involved governmental agencies, elected officials representing affected property owners, special interest group representatives, private developers and potential partners.

The meeting room is isolated to minimize interruptions, yet offer a comfortable setting. All the audiovisual equipment, projectors and easels are available to the team. Snacks and refreshments are an essential part of creating the right atmosphere. By providing lunch for the participants, the lunch hour can be utilized for continuing the discussions. Keeping the group together for lunch helps them stay focused on

the issues and discourages members from leaving and not returning. Also during the lunch hour, beside technical discussions, the team members get better acquainted with each other. They actually begin working on the project and develop working relationships and esprit de corps among themselves.

The Scoping Meeting Agenda follows closely the SAVE International approved "Job Plan" as follows:

- Information Phase
- Analytical Phase
- Creativity Phase
- Evaluation Phase
- Presentation Phase
- Implementation Phase

The Scoping Meeting Agendas are customized to meet the special requirements of each project. However the Information Phase and Function Analysis, including the utilization of the FAST diagram, is always part of the tools used by the Team Leaders. In cases when the Scope of Work has major revisions, the Consultant Team is allowed an extra day to work out their Level of Effort Man-hour estimate. The team then returns to complete the final phases of the Scoping Meeting together with the rest of the District's technical team members and the District Project Manager.

A Typical Scoping Meeting Agenda is as follows:

- Introductions
- Project Background Presentation
- Customers' Presentation
- Stakeholders' Presentation
- Define Project Goals and Objectives
- Function Analysis
- FAST Diagramming
- Scope of Work Tasks and Function Correlating
- Level of Effort Man-hour assignment to Functions
- Value Index(VI)= Worth (District)/Cost (Consultant)
- Low VI Functions (Tasks) Brainstorming
- Agreement on Scope and Level of Effort
- Implementation Plan (Things To Do List)

At the conclusion of the Scoping Meeting, the Consultant Team has a good understanding of the District's expectations, the required Tasks and the Level of Effort needed to satisfy the stakeholders and customers, and have a reasonable profit at the conclusion of the Project.

The next step after the Scoping Meeting is to submit the revised Scope of Work and the final Fee Proposal, including all the Direct Costs and a

reasonable Profit. Allowed Profits on District Projects range from 10 to 15 % depending on the size, complexity and liability associated with the Project.

The Fee Proposal is requested to be submitted within 3 days after the Scoping Meeting. The District Project Manager reviews the submittal compared to the Scoping Meeting's agreed Level of Effort Man-hour estimate. A formal Negotiation Meeting is called within 4 days. The meeting is expected to produce a final Agreement on all Contract items, including Scope of Work and the Cost.

LESSONS LEARNED

After two years of conducting Scoping Meetings, the following lessons were learned by the Team Leader and the District Project Managers:

1. There are no two projects exactly alike. They all require full function analysis from "scratch" to discover the unnecessary and missing scope/task items that could not be "guessed" without the Scoping Process.
2. To be more effective during the Scoping Meeting, it is important for both the District Staff and the Consultant Team to be introduced to the VE Methodology at least one time before the meeting or in a separate Seminar.
3. The District needs to resolve all policy-related issues prior to the Scoping Meeting.
4. The District must prepare a good understanding of its own expectations and a good man-hour estimate.
5. Make it absolutely clear to the Consultants that the Level of Effort is only an "order of magnitude" indicator of the Consultants' understanding and the selected approach to solve the problem. It is not an absolute "bid" or binding "estimate" at the time of the Scoping Meeting. It can be revised prior to submittal of the final Cost / Fee proposal. However, major increases from the Scoping Meeting's Level of Effort numbers is carefully scrutinized by the District during the Negotiation Meeting.
6. An extra day can be added to the Scoping Process if the Scope of Work changes are too extensive for the Consultants to make a good Level of Effort estimate. The extra day can be inserted before the last day of the Scoping Meeting.
7. Keep the Team together all day by providing snacks, refreshments and lunch. It's worth it.

CONCLUSIONS

The District's Scoping Meetings have reduced the contracting cycle significantly. In some cases the time from announcement of the Letter of Interest to the Notice to Proceed is as low as 120 days. It is well received by the consulting community as well as the District's Project Managers.

It practically eliminates the adversarial and confrontational situations that characterized many Contract Negotiations in the past. The Scopes are better, and the Consultants and the District Staff build better working relationships.

The final test will be the comparison of the number of Change Orders or Contract Modifications of the Consultants' Contracts in the future.

RECOMMENDATIONS

If you are satisfied with your Consultant Selection and Contract Negotiation Processes, then please write it up for your professional publication

If you are having problems and you are uncomfortable with your present procedure, then contact your closest available Certified Value Engineer, preferably familiar with your business/specialty and ask his/her advice, and suggest the procedure described in this paper.