PRE-CONSTRUCTION REVIEW

Problem Statement

Presently, the primary source of construction knowledge and experience in the design stage is the ODOT Project Team. This is sometimes supplemented by comments from other Construction members. But there is a crucial difference in the knowledge and experience gained from inspecting construction and that gained from actually having to deliver and install construction at a competitive price. Also, designers and contractors see projects from different perspectives.

Although the Project Team approach provides for a proactive, integrated approach to identifying and accessing information on all aspects of the project, it comes up short on providing the needed construction knowledge and experience internally. The real experience and expertise of the construction community needs to be accessed during the design stage to produce more constructible projects.

Goal

Goals for an enhanced constructability process:

- Reduce costs and enhance quality.
- Improve and shorten project schedules.
- Improve public and construction safety.
- Reduce addendums.
- Reduce change/extra work orders.
- Expand constructability knowledge in ODOT.
- Reduce environmental permit violations/non-compliance.
- Minimize public inconvenience and intrusion.
- Increase compatibility on environmental requirements and construction practices.
- We also recognize that this may cause small increases in Preliminary Engineering (PE) costs, but those costs should be minimal compared to the time and cost savings due to less claims in construction.
- This is not intended to replace or change the way ODOT handles the Value Engineering program; this is intended to review projects during design for constructability issues.

Owner

The overall process owner is the Value Engineer of the Roadway Engineering Unit of the Traffic-Roadway Section. The owner at the project level would be the Team leader (i.e. Project Leader or Consultant Project Manager) for that particular project.

Success Indicators

- Better Plans and Specifications.
- Less Contract Change Orders.
- Less contractor claims for both time and money.

For the External review process ODOT would track which contractors participate:

- This would not be an elaborate checking system.
- Electronic prospectus data field to record formal Constructability review and who participates.

- Annual report generated by Roadway Engineering Unit showing the number of reviews that were done during the year.

Plan

There would be two types of Constructability reviews:

The first one is more of an informal review that the project team will incorporate into all projects no matter what the complexity is. This type will be referred to as the *Internal review* process. Below is a list of what this would look like.

- Done within the framework of the Project team. In most cases the process should only take a half of a day for a meeting and should be worked around the normal Project team meeting.
- The Team Leader is the owner of the review. This includes agenda preparation, dissemination of meeting materials and meeting notes.
- The Project Manager or the Assistant Project Manager must be a participant at the meeting. Retired ODOT construction staff may be used for the reviews. The Team Leader should discuss construction representation with the Project Manager who will oversee the project's construction.
- The Area Manager/Team Leader may hire other resources to participate in the review as needed.
- The entire Project team should participate (this could also include other resources as appropriate, i.e., utilities, regulatory agencies.)
- The Team Leader assigns to team members the responsibility for addressing issues raised during the meeting
- If closure on issues raised in the meeting can not be reached during or after the meeting, the Team Leader and the involved team members raise the issue to the Area Manager and the Technical Services Resource Manager (TSRM) for resolution. If the matter can not be resolved between the Area Manager and the TSRM, the matter is then raised to the Region Manager and Technical Services Manager in construction with the State Highway Engineer.
- Plans/pertinent information is sent to the Project team and the Project Manager representative a minimum of two weeks prior to the meeting.
- The meeting could be conducted at the construction site (encourage) or the meeting could include a field visit (could use video or photos to subsidize at a site meeting)

The project team should look at the more critical aspects of a project (including asking the question: "can the project be built?") such as:

- Staging.
- Environmental timing restrictions (such as in-water periods, noise restrictions, etc.)
- Endangered Species Act permit requirements.

The second type would be more of a formal review that would utilize the contracting industry. This type of review will be referred to as the *External review* process. Below is a list of what this would look like:

1. Association of General Contractors (AGC) will maintain a list of contractors willing to participate in the program.
    - This list will be on AGC internet site: http://agc-oregon.org/odot/index.shtml
    - This list is a contact list for Team Leaders to contact contractors (two minimum) to participate in a project review.
    - The Team Leader is responsible for contracting two contractors and sending materials out two weeks prior to the meeting.

2. Broad based circulation to all contractors
    - For maintaining competitive bid process per Federal Highway Administration (FHWA) and Department of Justice (DOJ).
    - Team Leader notifies Value Engineer of established construction review meetings at least three weeks prior to the meeting using the "Request for Constructability Review" form.
    - The Value Engineer will place project name, meeting place, time and contact person on the Constructability Review web site.
    - ODOT will not share any decisions regarding constructability with contractors.

3. This process is not going to be used to replace the Department's *Value Engineering* program.

Timing of the Meeting

The time for when the review meeting should be conducted during project development may vary depending on the scope and schedule of the project. It is recommended that the review be done when plans are approximately 30% to 50% complete.

Implementation Steps

As we begin to implement this process we will need to keep several key ODOT and industry people involved in this process. They are listed below:

- ODOT Area Managers Team
- ODOT Technical Services
- ODOT Project Leaders Team
- ODOT Project Managers Team
- ODOT Consultant Project Managers Team
- Association of General Contractors

Each of these teams will be instrumental in how this process is implemented. There will be updates as to the implementation progress at each of these teams quarterly or semi-annual meetings.

Checklist

The first attachment is a sample agenda for the constructability review meeting. The agenda topic should be tailored to the topic areas where constructability areas should be discussed.

The lead person in a technical area (i.e. traffic, environmental, etc.) should give a very brief overview of their aspect of the project to stimulate the constructability discussion for that aspect of the project.

The main goal and time commitment of the discussion is for the construction representative at the meeting to share their thoughts on the project's construction problems and potential risks that could be addressed.

The Team Leader shall keep a record of the meeting to be used for recording key discussion points and responsible parties for fulfilling action items from the meeting. The Team Leader shall provide the Value Engineer with minutes and/or report from the meeting.

What criteria would we use to identify projects in the External Review Process?
(S- "should"; and C- "consider")

S Alternative Contracting is being considered
S The Project Team calls for a formal CR
S All modernization projects
S Projects with complex staging and traffic control
S Bridge replacement (reconstruction and rehabilitation)
S Extraordinary environmental circumstances
S Consultant designs

C Multi-year projects
C Project with innovative materials and techniques
C Project requiring shoring
C Sensitive neighborhoods