Recommended AASHTO Design-Build Procurement Guide

NCHRP Project 20-7/172

Presentation to the

AASHTO Subcommittee on Design

Annual Meeting
Chicago, Illinois
June 28, 2005

Keith R. Molenaar, Ph.D.
University of Colorado
Agenda

- Research Project Need
- Research Goal and Scope
- Guidebook Description
Research Project Need

AASHTO Design-Build Task Force

AASHTO Subcommittee on Design

AASHTO Subcommittee on Construction
Research Project Need

Keith R. Molenaar
University of Colorado

Douglas Gransberg
University of Oklahoma

Sidney Scott
Trauner Consulting

David Downs
Downs Consulting

Ralph Ellis
University of Florida
Based on 248 approved SEP-14 design-build projects

Project Type

- Bridge/Tunnel: 43%
- New/Widening: 32%
- Rehab/Recon/Resurface: 20%
- ITS: 5%
Based on 248 approved SEP-14 design-build projects

- **Micro (<$2M)**: 27%
- **Small ($2M-$10M)**: 34%
- **Medium ($10M-$50M)**: 23%
- **Large ($50M-$100M)**: 9%
- **Mega (> $100M)**: 7%
Procurement Type

Based on 69 project surveys

Best-Value: 46%
Low Bid: 54%
Agenda

✓ Research Project Need

- Research Goal and Scope
- Guidebook Description
Research Goal

“Develop a recommended AASHTO design-build guide that will assist contracting agencies in design-build procurement”
Research Scope

- Assist in procurement preparation process
  - Requests for qualifications (RFQ)
  - Requests for proposals (RFP)
  - Selection of the successful proposer

- Small to medium projects ($10-100 million)
Research Scope

- Guidebook rather than procedure manual
- Flexible for project type, size, and procurement requirements
- Based on best practices
- Promote a common vocabulary
Research Tasks

Task 1 – Review & Analysis
State-of-practice review in RFP & RFQ development

Task 2 - Synthesis
Prepare annotated Guide outline

Task 3 - Development
Develop and refine Guide
Agenda

✓ Research Project Need
✓ Research Goal and Scope

- Guidebook Description
Guide Philosophy

Step 1
Define Project Goals

Step 2
Allocate Risks Appropriately

Step 3
Plan Evaluation

Task 4
Draft Contract Documents
Guide Outline

- Chapter 1 – Introduction
- Chapter 2 – Understanding Design-Build
- Chapter 3 – Defining Project Goals and Objectives
- Chapter 4 – Allocating Project Risks
- Chapter 5 – Evaluation Planning and Award
- Chapter 6 – Drafting RFQ/RFP/Contract Documents
- Appendix – Project and Program Examples
Understanding Design-Build

- Justification for design-build
  - Schedule
  - Cost
  - Quality
  - Innovation
- Design-build project selection
- Design-build procurement process overview
- Design-build programs vs. design-build projects
Understanding Design-Build

Design-Bid-Build

Planning & Programming
Preliminary Engineering
Final Engineering
Contractor Selection
Construction

Minimal Contractor Input
Possible Contractor Input

Design-Build

Planning & Programming
Preliminary Engineering
Design-Builder Selection
Final Engineering
Construction
Design-Build Time Savings

Minimal Contractor Input
Extensive Contractor Input
Understanding Design-Build

- Request for Proposal
- Technical Proposal
- Price Proposal
- Plan
- Specs
- Shop Drwgs
- Construction
- As-Builts
- Contract
Defining Project Goals

- Importance of project goals
- Identification and ranking of project goals
- Communication of goals
Defining Project Goals

- **Schedule**
  - Minimize project delivery time
  - Complete the project on schedule

- **Cost**
  - Minimize project cost
  - Maximize project budget
  - Complete the project on budget

- **Quality**
  - Provide the highest quality project
  - Select the best team

- **Innovation**
  - Provide innovative solutions
  - Minimize impact on the traveling public
Allocating Project Risks

- Appropriate level of design in the RFP
- Risk identification
- Discussion of critical design-build risk elements
- Design-build project risk allocation matrix
- Appropriate risk-allocation strategies
Allocating Project Risks

Based on 69 project surveys
Allocating Project Risks

Level of Design & Risk Allocation

Schedule & Innovation
Allocating Project Risks

- Discussion of Critical Design-Build Risk Issues
  - Design Issues
  - Environmental Approval andPermitting
  - Right of Way
  - Local Agency, Utility, and Railroad Issues
  - Construction
  - Force Majeure/Acts of God
  - Differing Site Conditions/Changed Conditions
  - Warranty
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Evaluation Planning and Award

- Evaluation plan transparency
- Best-value contracting framework
- Implementing design-build best-value award systems
- Design-build evaluation and award planning summary
Evaluation Planning and Award

Project Goals

Best-Value Parameters

Evaluation Plan

Best-Value Evaluation Criteria

Best-Value Evaluation Rating Systems

Best-Value Award Algorithms
Drafting RFQ/RFP/Contract Documents

- Critical RFQ and RFP Contents
- Design-build concepts and contract provisions
  - 21 critical concepts and provision
  - Appendix of examples
Drafting RFQ/RFP/Contract Documents

- Basic Configuration
- Alternative Technical Concepts
- Betterments and Extra Work
- Quality Management
- Design Submittal, Review and Approval
- Design Commitment
- Engineer of Record
- Differing Site Conditions
- Environmental Permitting
- Right of way
- Utility Relocation
- Order of Document Precedence
- Design and Construction References
- Ownership of Documents
- Stipend
- Payment Method
- Progress Schedule
- Project Acceptance
- Non-Conforming Work
- Traffic Control
- Warranty
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