



CONSTRUCTION MANAGEMENT AT RISK "CM@R"

ASHE

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Agenda

- Background
- What leads DOT's to CMAR?
- ADOT's Outlook on CMAR
- Project Updates
- CMAR Benefits
- CMAR Challenges
- Lessons Learned



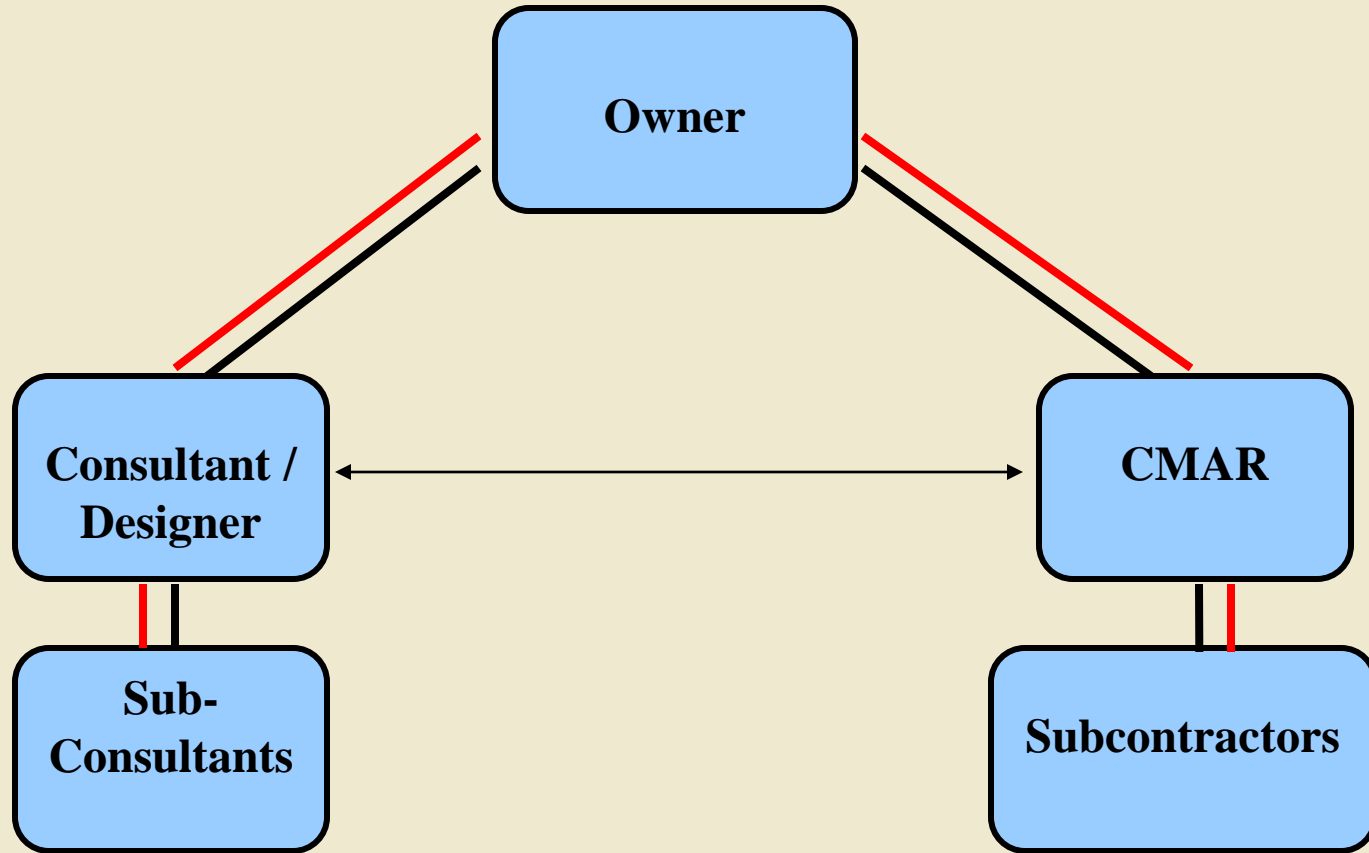
HISTORY

House Bill 2579 (2005)

- Modified Design Build Statute
- Allows ADOT two New Projects
- Delivery Methods
 - Job Order Contracting
 - Construction Manager at Risk
- ARS Section 28-7361 through 28-7367
- Limits of three (3) contracts until December 31, 2006
- Each contract is limited to a specific single project



Construction Manager at Risk



— = Contract Relations
— = Communications



Consultant and CM@R Selection Process

Consultant Selection

- Qualification
- Negotiated fee
- Design and post design services
- Consultant and CMAR work together during the design phase

CMAR Selection

- Qualification
- Negotiate hourly rates for key personnel
- Preconstruction services
- Construction contract



Preconstruction Services

- Constructability Review
- Value Analysis Review
- Preparing Cost Model
- Design Document Review
- Project Schedule, including Phasing/Sequencing



Construction Contract

GMP Details

- Actual Cost of the Work (Unit Prices)
- Fee on Self-Performed Work
- Fee on Sub-Contracted Work
- On-Site Overhead
- Off-Site Overhead
- Gross Receipts Tax
- Proposed Allowances



Construction Contract

Owner Contingency

- Change in scope
- Differing site condition
- Third party obligation

CMAR Allowances

- Fixed
- Open
- Provisional



Construction Contract

Subcontractor Selection

- Team created a list of qualified subs
- List submitted to ADOT for review
- Subcontractor qualifications 30%
- Price component 70%

The Selection Team



**May be ADOT and non-ADOT Staff
Must include a Contractor
At least 50 % Engineers
Selection Team Training**



Selection Team

- Group Manager
- District Engineer
- Contractor
- Design Consultant
- Valley Project Manager
- Statewide Project Manager
- Senior Resident



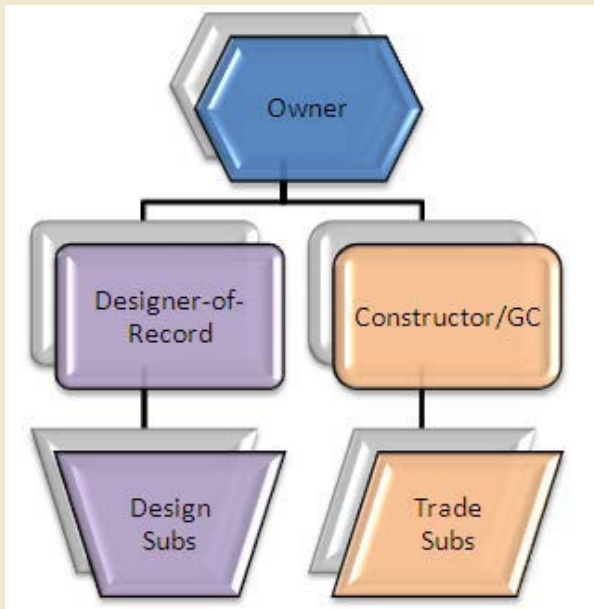
Sample Scoring Calculation For One Firm

Criteria	Max Score	Selection Team Member 1	Selection Team Member 2	Selection Team Member 3	Selection Team Member 4	Selection Team Member 5
Qualifications of Firm	20	16	15	15	17	16
Experience of Key People	15	12	13	12	14	11
Project Understanding	30	23	20	22	26	25
Safety	10	8	7	6	8	8
Miscellaneous	15	12	12	13	13	10
Interview	20	16	15	17	17	17
Maximum Possible Score	110	87	82	85	95	87
Mean Score	85.71					
1.65 X Standard Deviation	7.95					
Range	93.67 to 77.76					12

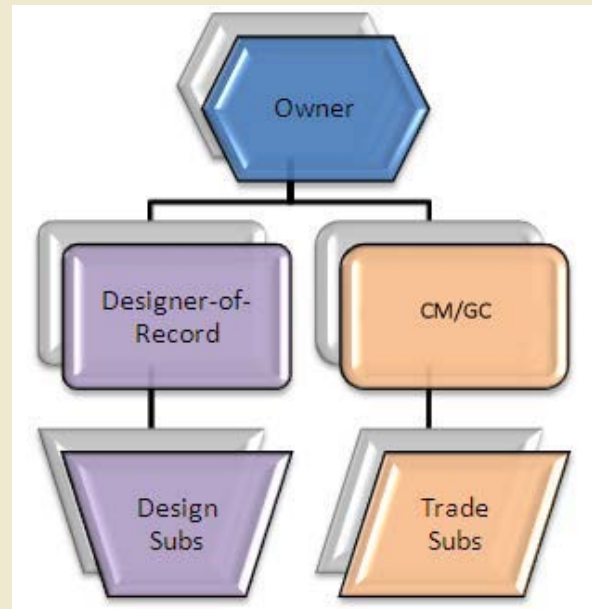


Contracting Types

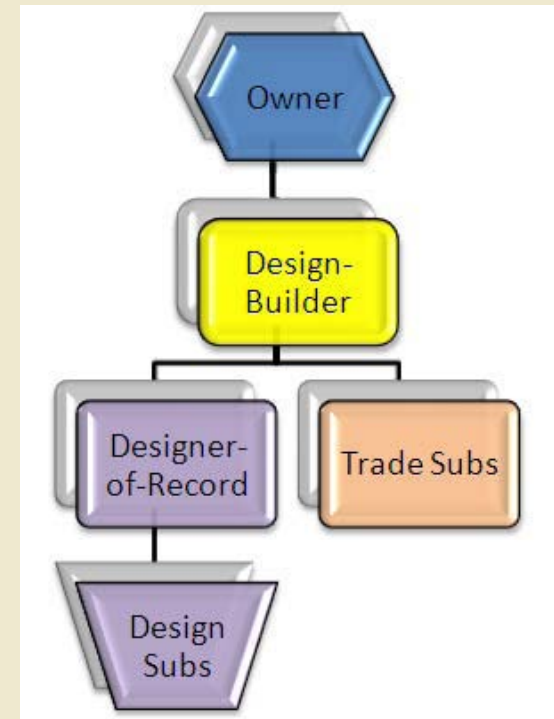
Design-Bid-Build



CMGC



Design-Build





When to Select CM@R

- High risk projects
- High level technical complexity
- Budget Constraints
- Complex phasing
- Significant scheduling constraints



What Leads DOT's to CM@R?

- More owner control
- Accountability/open book
- Shortened project delivery
- Innovation
- Constructability
- Better relationships among project team members
- Enhance project communication
- Identify risks



ADOT's Outlook on CM@R

- Continuous leadership support
- Develop list of potential CMAR project candidates
- Solicit input from staff
- Solicit from industry
- Every Day Counts
- Special Experimental Project No. 14



CM@R Status Update

Location	Status	Award Date	GMP Amount
SR89 –Center St. to South Chino	Completed	07/18/2008	19.1M
Loop 303 – Cactus Waddell & Bell	Completed	01/23/2009	28.2M
I 17 – Codes Junction Traffic	Under Construction	08/16/2011	50.9M
Loop 303 –Bell Rd. to Peoria	Under Construction	08/16/2011	128.8M
			Total \$227M



CM@R Status Update

Upcoming Projects:

- Grand Avenue TI (Program Amount \$48 Million)
- Potential local agencies



Benefits of CM@R

- Contractor selected based on qualifications
- Subcontractor selected based on qualifications and price
- Contractor assists in design
- Owners input into design
- Cost models are established throughout the process
- Time savings
- Less adversarial
- Minimize change orders



Benefits of CM@R

- Better contractor performance for repeated business
- Knowledge of contractor's means and methods
- Reconciling quantities and cost during design
- Investigation of construction access – especially in environmentally sensitive areas
- Contractor's input on Value Engineering Team
- Identify risks/find resolutions to mitigate



Benefits of CM@R

- Designer and Contractor working together
 - Better understanding of the project
 - Project limitations
 - Plans customized to the specific project
 - Means and methods used to build the project



Challenges

- Early owner involvement
- Owner needs to have sufficient expertise to manage both contractor and designer in the CMAR risk environment
- Obtaining clearances timely
- Requires significant trust between all parties
- Needs to have right blend of personalities from owner, designer and contractor



Challenges

- Not all design firms are used to fast track design schedule
- Third party estimator
- Condense schedule
- Owner's technical staff hesitates to adapt to new process



Lessons Learned

- Buy in for all team members is important
- Identifying roles and responsibilities
- Knowledge transfer
- Reevaluate point system for interview selection
- Owner needs proactive project manager
- Bring on board design consultant and contractor as early as possible
- Task teams to verify quantities
- Clearly define scope of work for third party reviewer



Construction Manager at Risk Guide

Link

http://www.azdot.gov/Highways/ConstGrp/Value_Quality/Alternatives.asp

SOQ /ARS 28-7366

Pre-Construction Services Contract /ARS 28-7366
Subsection E-1



Questions?

