

Alternate Project Delivery Methods



Presented by
Wylie Bearup, PE, PhD
City of Phoenix
Street Transportation Dept

Objective

- To gain an understanding of Alternate Project Delivery Methods
- To understand how the Street Transportation Dept is planning to implement APDM

Delivery Methods & Project Types

METHOD	PROJECT TYPE
Design-Bid-Build	Streets improvements, storm drains, waterlines
Design-Build	Fast tracked projects, speed premium
CMAR	Buildings, water/wastewater & aviation facilities, phasing challenges
Job Order Contracts	Renovation, remodel, small new construction < \$2M

GOAL: Use the right tool for the job.

Delivery Methods Background

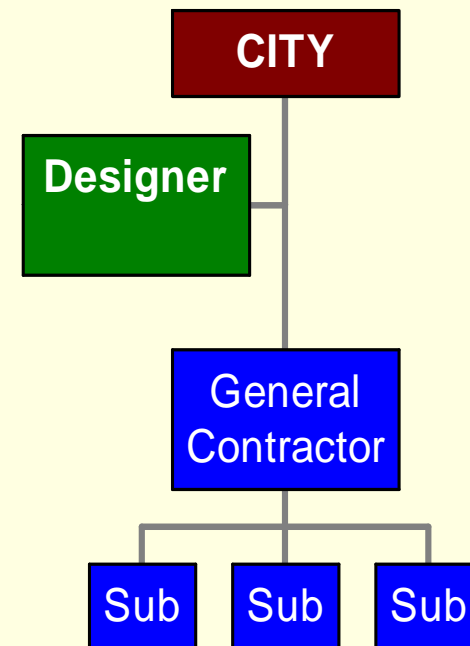
- State Legislature approved alternate methods in 2000 General Session
- Alternate Project Delivery Methods include:
 - Construction Manager at Risk (CMAR)
 - Design-Build (DB)
 - Job Order Contracting (JOC)
- Previously, City only allowed to use Design-Bid-Build method
 - Challenges completing projects on time within budgets

Design-Bid-Build

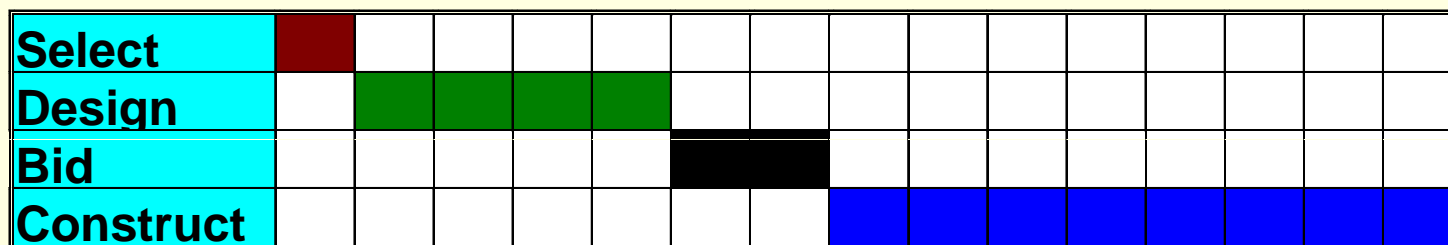
Traditional, Low Bid

- Linear process – each step must be completed before proceeding to next
- Longest project duration
- Adversarial relationships

Project Organization



Typical Project Timeline



Isaac Pedestrian Bridge

- Scope: New pedestrian bridge spanning 135 feet, student drop-off area, and bus shelter
- Designer: Jacobs Engineering Group
- Artist: Rosemary Lonewolf
- Construction: Bison Construction
- Budget: \$6.4 million
- Factors:
 - Significant collaboration between Federal, State, County, City, School
 - Specialized Art features
- Status: Opened August 2008



Van Buren: 75th-67th Avenues Paving & Storm Drain

- Scope: Paving, curb, sidewalk, storm drain, street lights
- Designer: Entellus
- Construction: Standard Construction
- Budget: \$3 million
- Factors:
 - 11,300 tons of asphalt
 - 5,200 linear feet of curb
 - 23,500 square feet of sidewalk
 - 1,200 linear feet of storm drain
- Status:
 - Began construction November 2009
 - Scheduled completion May 2010

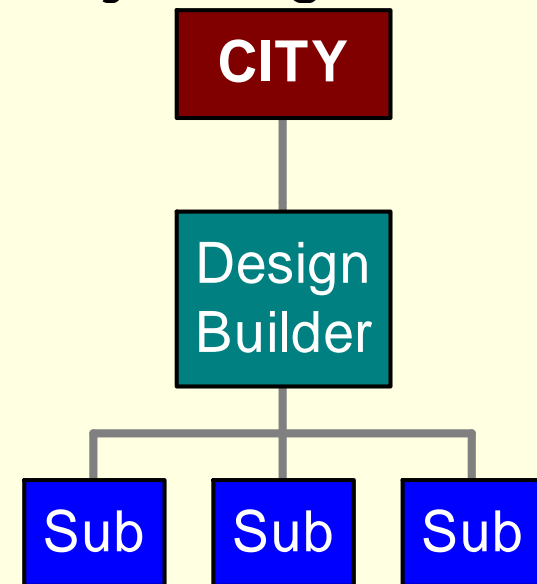


Design-Build

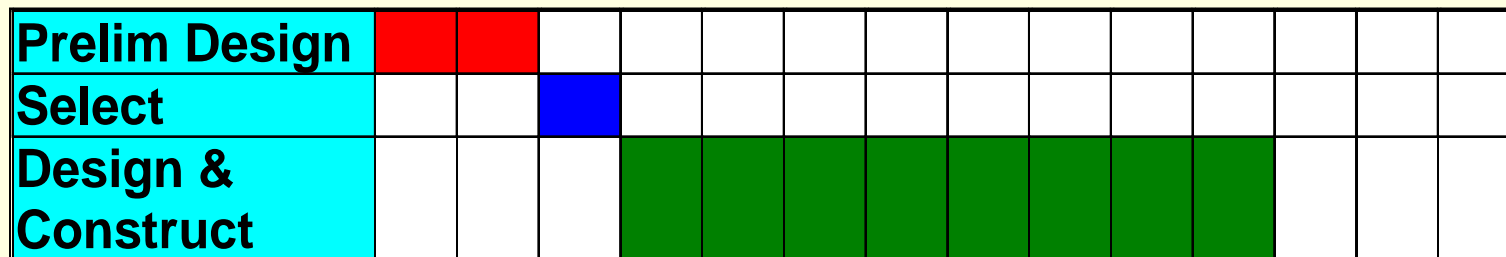
Qualifications Based & Best Value

- Single contract for design and construction
- Allows fast tracking, start construction as complete design
- No "finger pointing"

Project Organization



Typical Project Timeline



ASU School of Journalism

- Scope: New classroom and office space, TV studios
- Designer/Builder: Sundt Construction w/HDR and Steven Ehrlich Architects
- Budget: \$71M
- Factors:
 - Time!
 - Complexity
 - Coordination
- Status: Opened August 2008

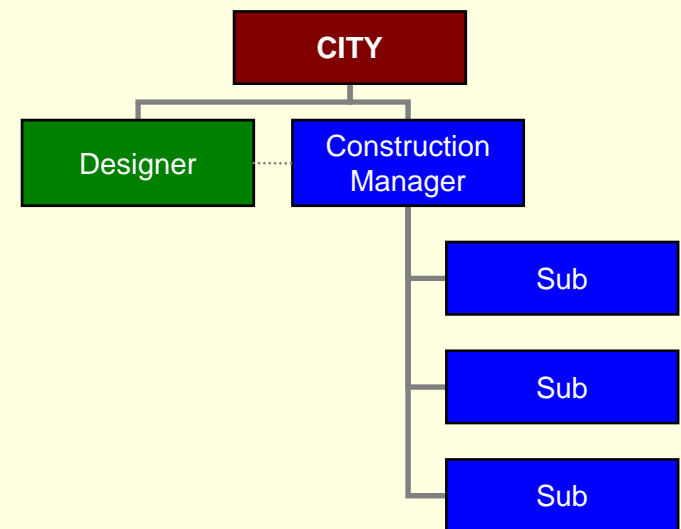


Construction Manager at Risk

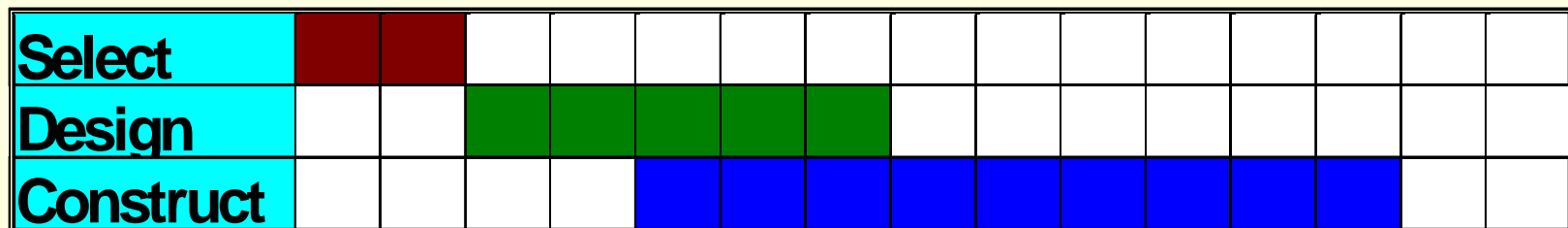
Qualifications Based only

- Separate contracts for design and construction
- CM selected during design, provides input
- Work by owner-approved subs

Project Organization



Typical Project Timeline



Phoenix Convention Center Expansion

- Scope: Expand Convention Center, Renovate Symphony Hall
- Designer: LAD/HOK
- CMAR: Hunt/Russell/Alvarado
- Budget: \$600M
- Factors:
 - Complexity
 - Phasing
 - Schedule
- Status: Phase 1 - Complete
- Symphony Hall - Done
- Phase 2 – Opened Dec. 27, 2008



Camelback Pedestrian Underpass

- Grade-separated pedestrian connection across Camelback between 24th and 26th Streets
- Pedestrian enhancements at 20th and 24th Streets.
- Hunter Contracting completed within a compressed (nine month) timeframe
- Required coordination with the Biltmore Fashion Square and Camelback Esplanade management



More Street Transportation CMAR Projects

- Historic Streetlight Restoration (Underway)
- North Valley Parkway (19th Avenue) Bridge Over CAP Canal (Hunter Contracting)
- Sonoran Boulevard (Advertisement Underway)
- Arcadia Drive Drainage & Sidewalk Improvements (Advertisement Underway)



CMAR w/ Price Competition

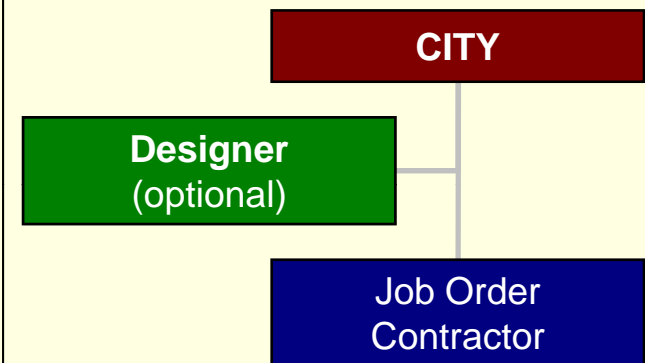
- Arizona law required “Qualifications Based Selection” only, prohibits price consideration
- Most Federal agencies require price competition on selection of contractors
- 2009 legislative session enacted CMAR with price for ARRA only
 - Format of price competition undefined
 - Options prepared by Alliance for Construction Excellence, ASU
- Revise 2010 for all Federal funds??

Job Order Contracts

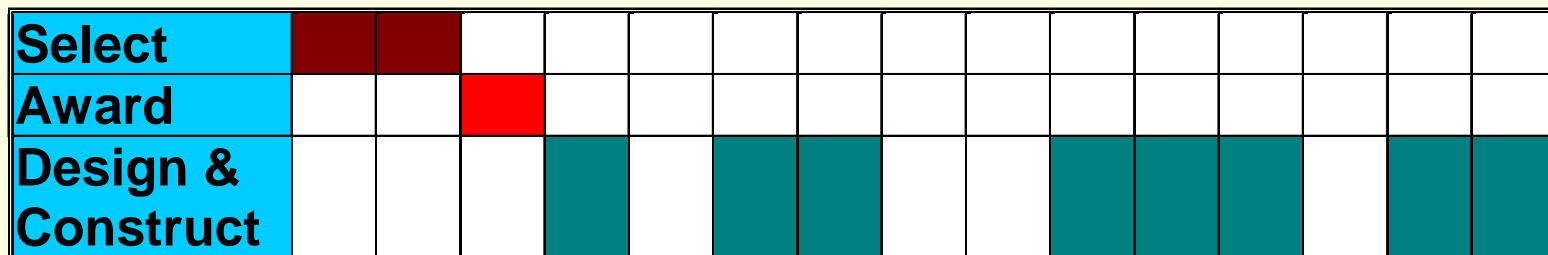
Qualifications Based & Best Value

- Used for small sidewalk projects, landscape, local drainage, ADA ramps, bridge repair, etc.
- Projects designed and constructed "as needed"
- Separate designer or JOC

Project Organization



Typical Project Timeline



Street Transportation JOCs

- Selected on qualifications, experience
- Negotiated price based on scope
- Use historical bid prices to verify cost



Galvin Parkway Traffic Circle

- Scope: Traffic Circle to mitigate traffic through Papago Park and entrance to Desert Botanical Garden
- Designer: CMX
- Construction: Banicki Construction
- Budget: \$1 million
- Factors:
 - Coordination with Water Dept project
 - Balancing needs of all stake holders
- Status: Opened September 2009



Selection Process Summary

METHOD	IFB	RFQ	RFP
Design-Bid-Build	X		
Design-Build, 1-Step		X	
Design-Build, 2-Step		X	X
Const. Mgr @ Risk		X	
JOC, 1-Step		X	
JOC, 2-Step		X	X

APDM Benefits

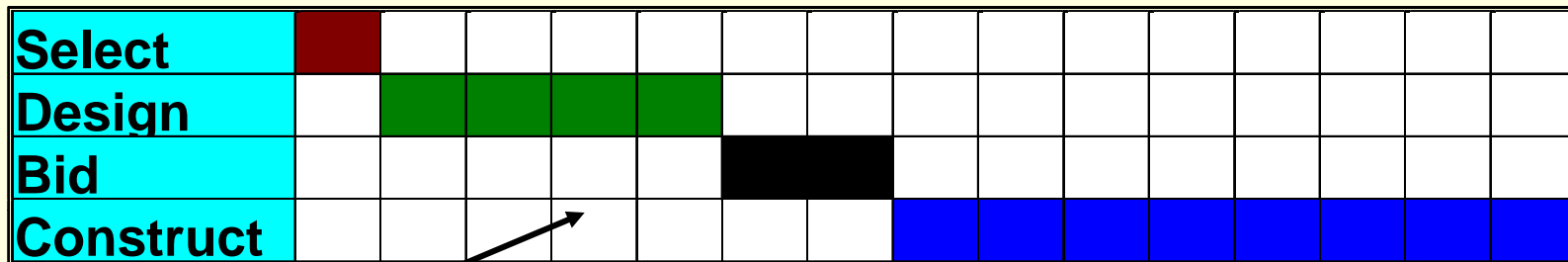
- Ability to pick “Best Qualified” contractor
- Better relationships among all project team members
- Contractor involvement throughout design phase:
 - More control of budget through design phase
 - True Value Engineering to ensure most cost-efficient systems
 - Enhanced project communications by selecting entire team early
 - More time to plan construction activities
 - Better designs through constructability reviews

APDM Benefits, con.

- Better quality from better subcontractors
- Smoother project close out
- Better contractor performance for repeat business
- Reduced completion time with fast tracking and long lead procurement
- Greater control of subcontractor selection
- Higher levels of M/W/SBE participation
- Ability to meet Green Building goals

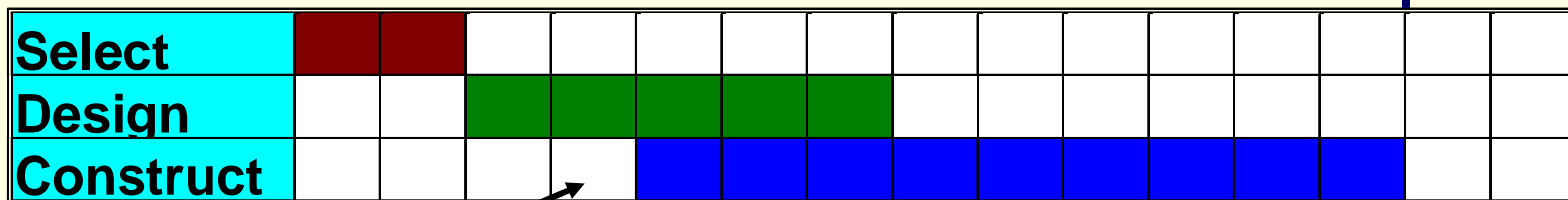
Typical Project Timelines

DESIGN-BID-BUILD



Very linear process – each step must be completed before proceeding to next.

CMAR



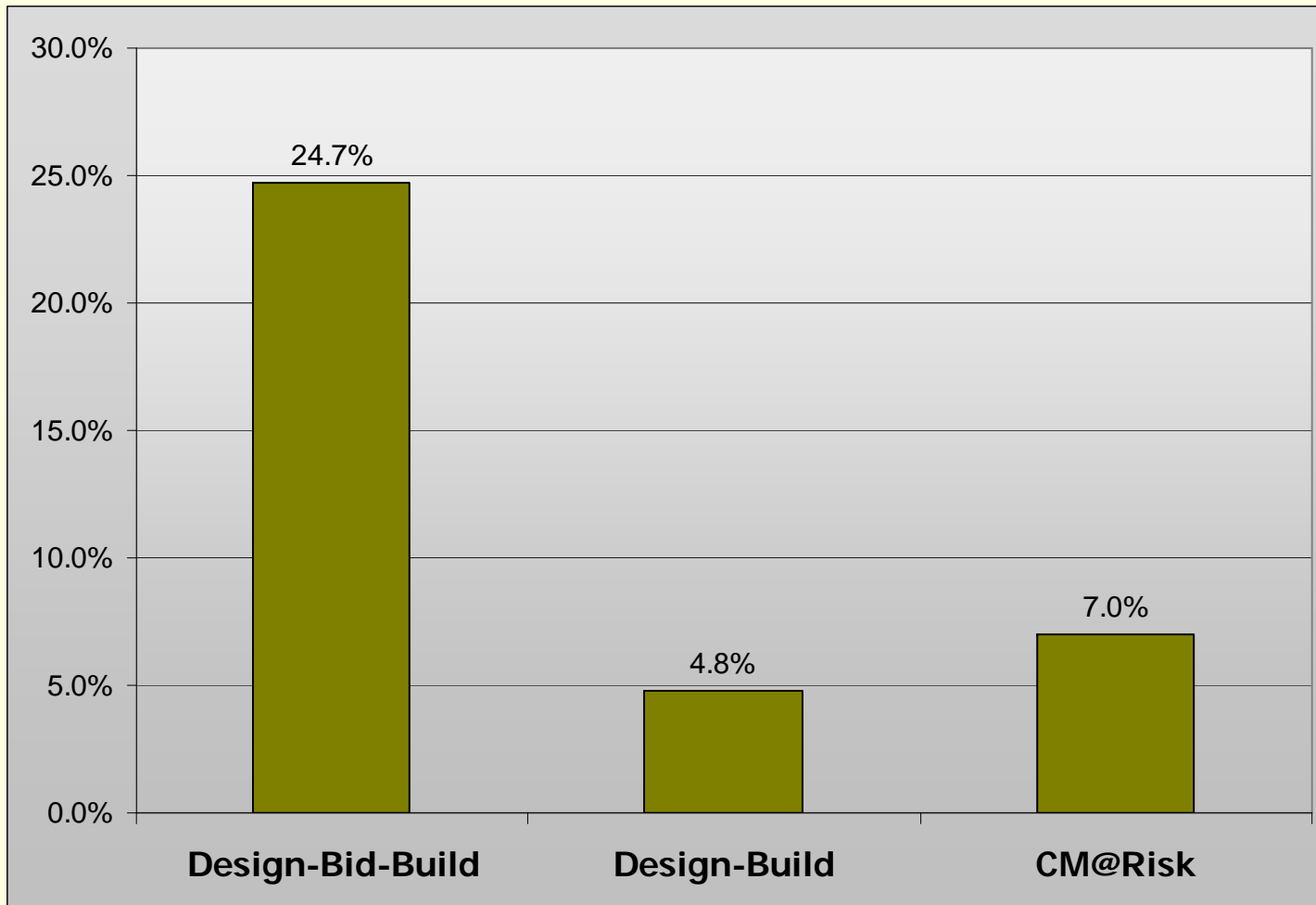
Allows "fast tracking" -- contractor can begin site work and foundations before the entire project is fully designed.

Time Savings

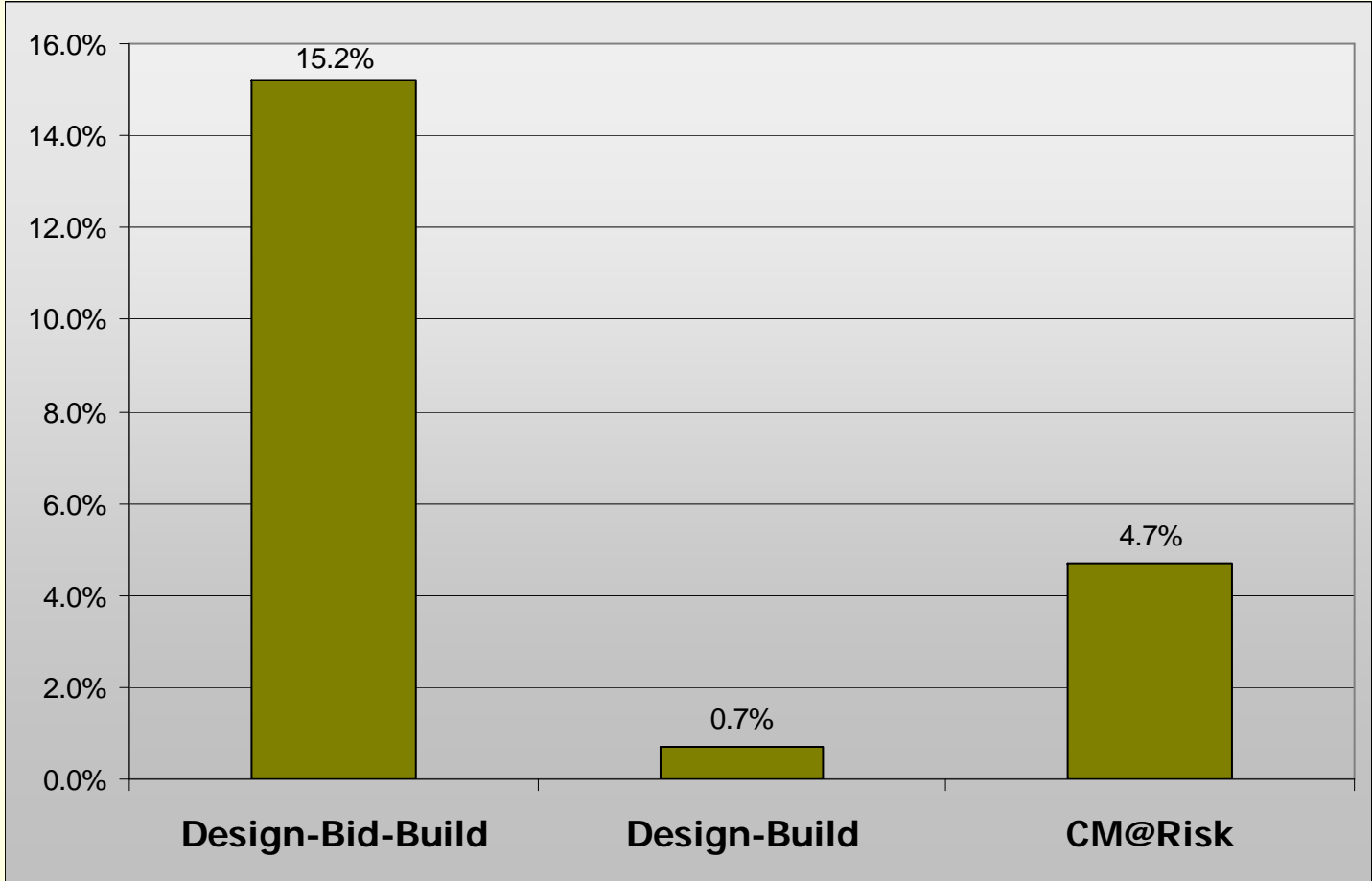
Delivery Method Comparison

FACTOR	CM@R	DBB
Contractor Selection	✓	
Subcontractor Selection	✓	
Design Input	✓	
Quality	✓	
Speed	✓	
Relationships	✓	
Cost Growth	✓	
Schedule Growth	✓	
First Cost		✓
Cost Certainty	✓	
Litigation	✓	
Value	✓	

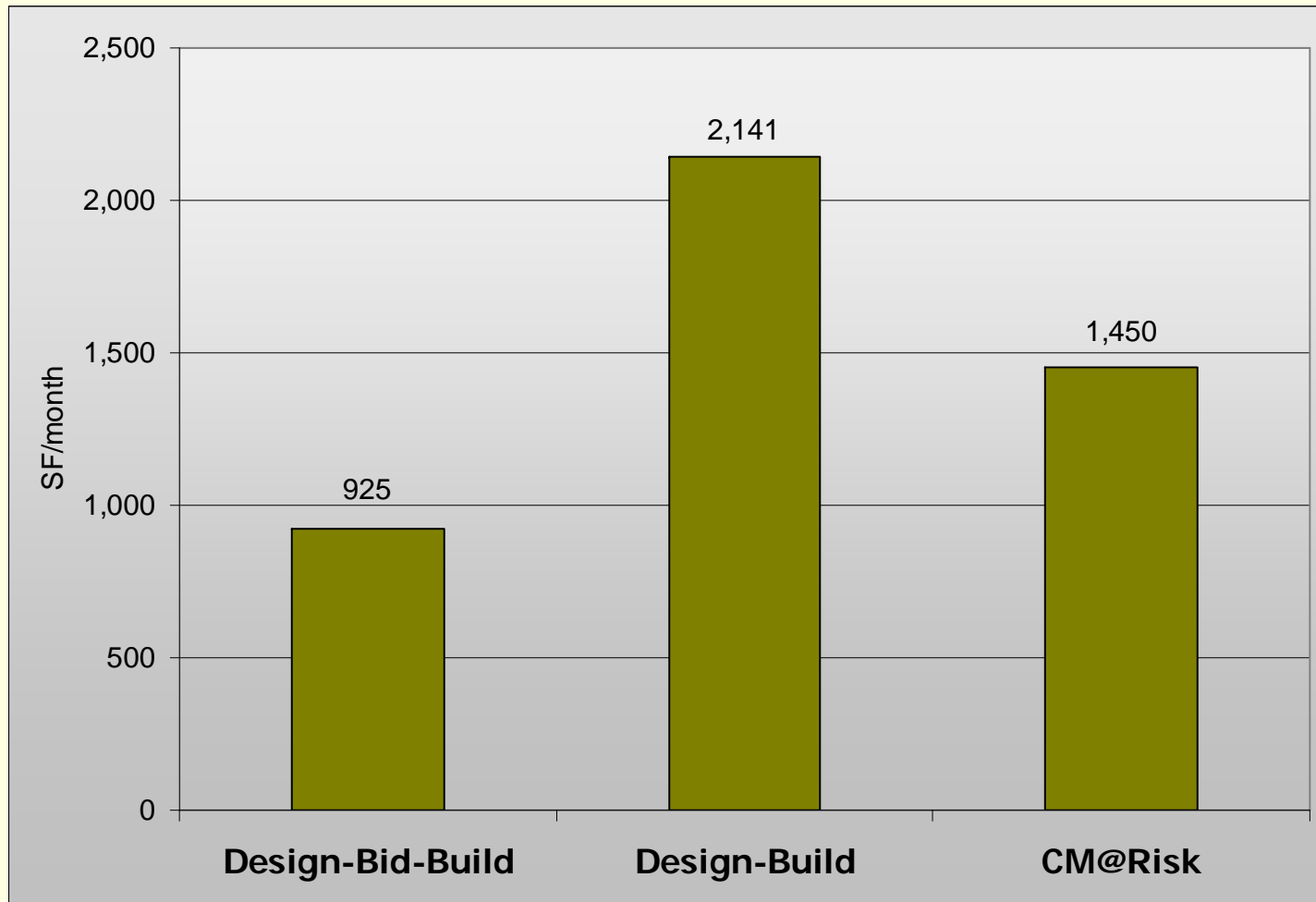
Schedule Growth



Cost Growth



Construction Speed



APDM Analogy

Designer

Contractor

Owner



Questions?

Contact Information:

Wylie Bearup, PE, PhD
Street Transportation Director
City of Phoenix, Arizona
Phone: 602-262-6136
E-mail: wylie.bearup@phoenix.gov