

Operator Training Committee of Ohio

- Water Workshop Tuesday March 7, 2017
- Columbus, Ohio
- Jim Salerno Midwest Manager MWH Constructors



Outline

- Alternative Project Delivery in Ohio
- Fremont WPCCC Improvements
- Avon Lake Storage Improvements Project
- Questions?

Resources Regarding Construction Reform

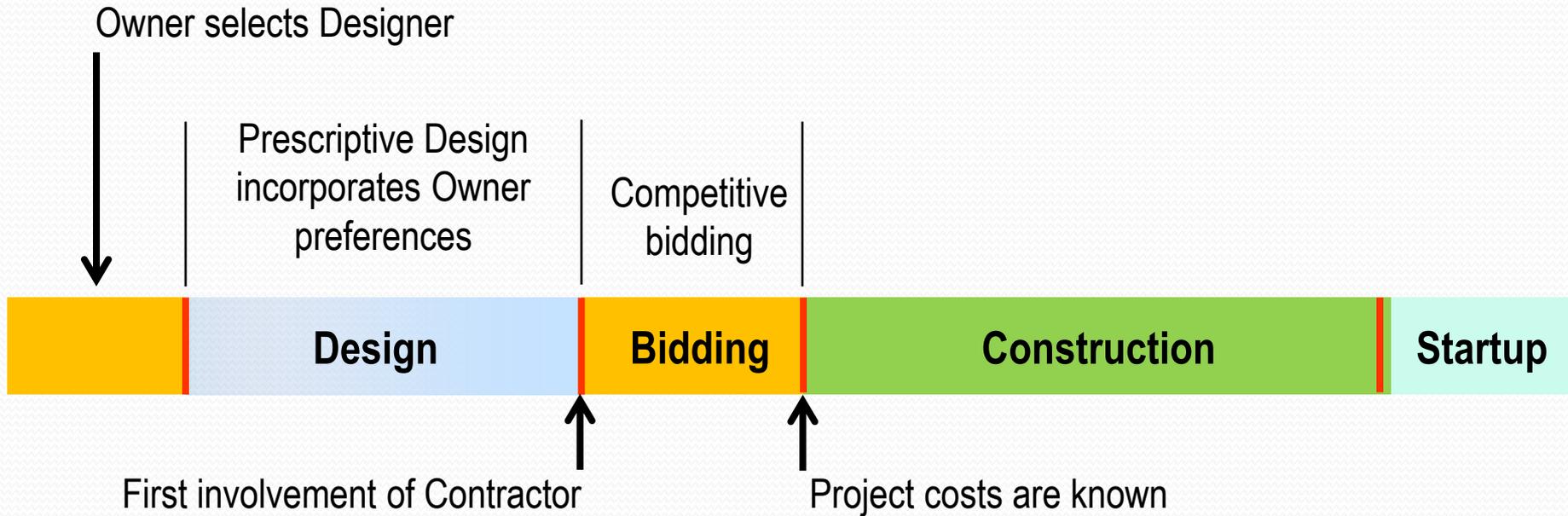


<http://ofcc.ohio.gov/Resources/ConstructionReform.aspx>

Project Delivery Methods

- Design Bid Build (Traditional)
- Construction Manager at Risk
- Progressive Design Build
- Lump Sum Design Build

Features of a Traditional Design-Bid-Build



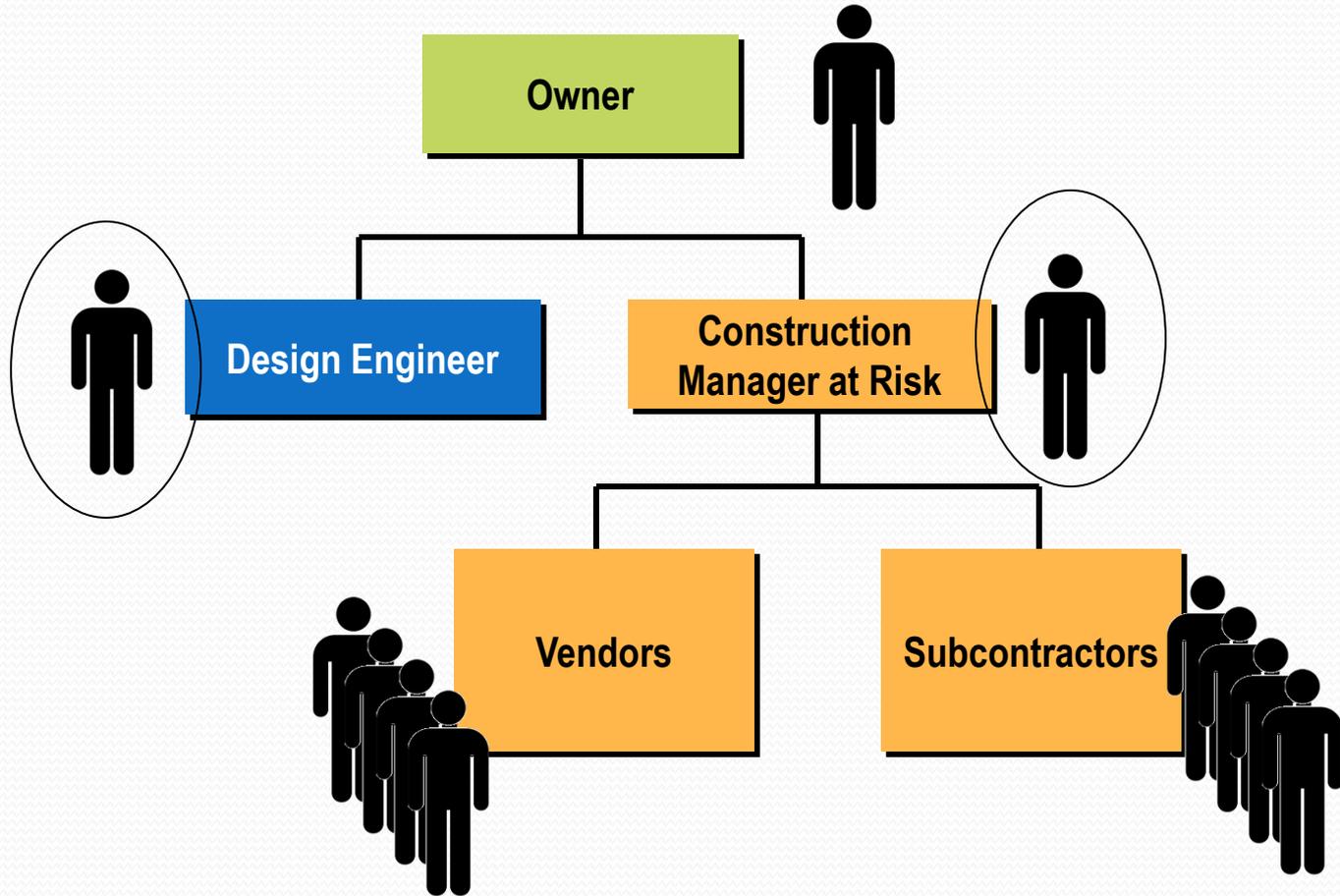
- Owner
- Contractor
- Designer

Traditional Design Bid Build Approach has Drawbacks

- Adversarial relationship can develop between owner, engineer, and contractor
 - Can lead to unsatisfactory results - cost, schedule, and quality
 - Can lead to change orders and disputes
- No input from contractor during design
 - Constructability considerations can impact cost and schedule
- Very time consuming process



Construction Management at Risk (CMAR)

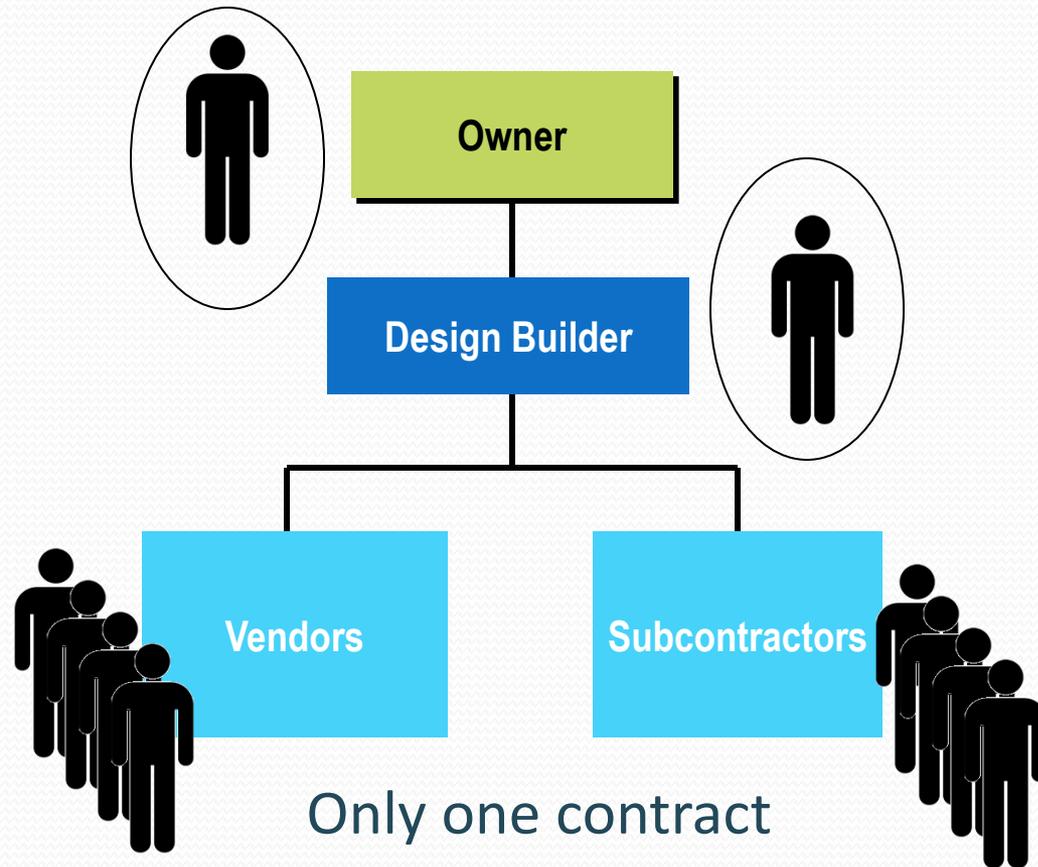


Two separate contracts

Why Owners Choose CMAR

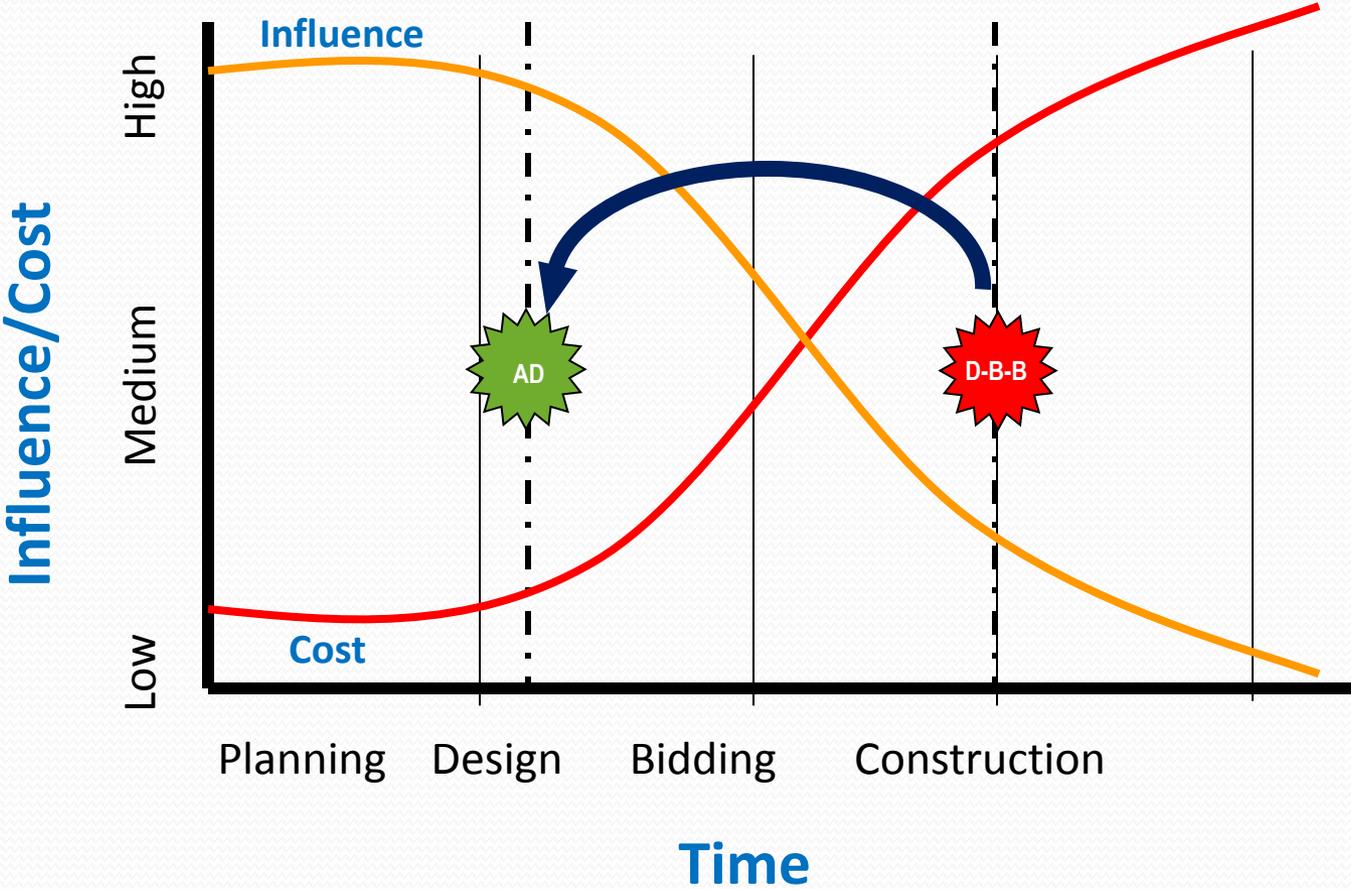
- Having contractor involved in design process
- Speed of delivery
- Owner control
- Maintain relationship with engineer (trusted advisor)
- GMP open book compensation
- Better price certainty
- Life cycle cost focus
- Increased collaboration not confrontation

Design-Build

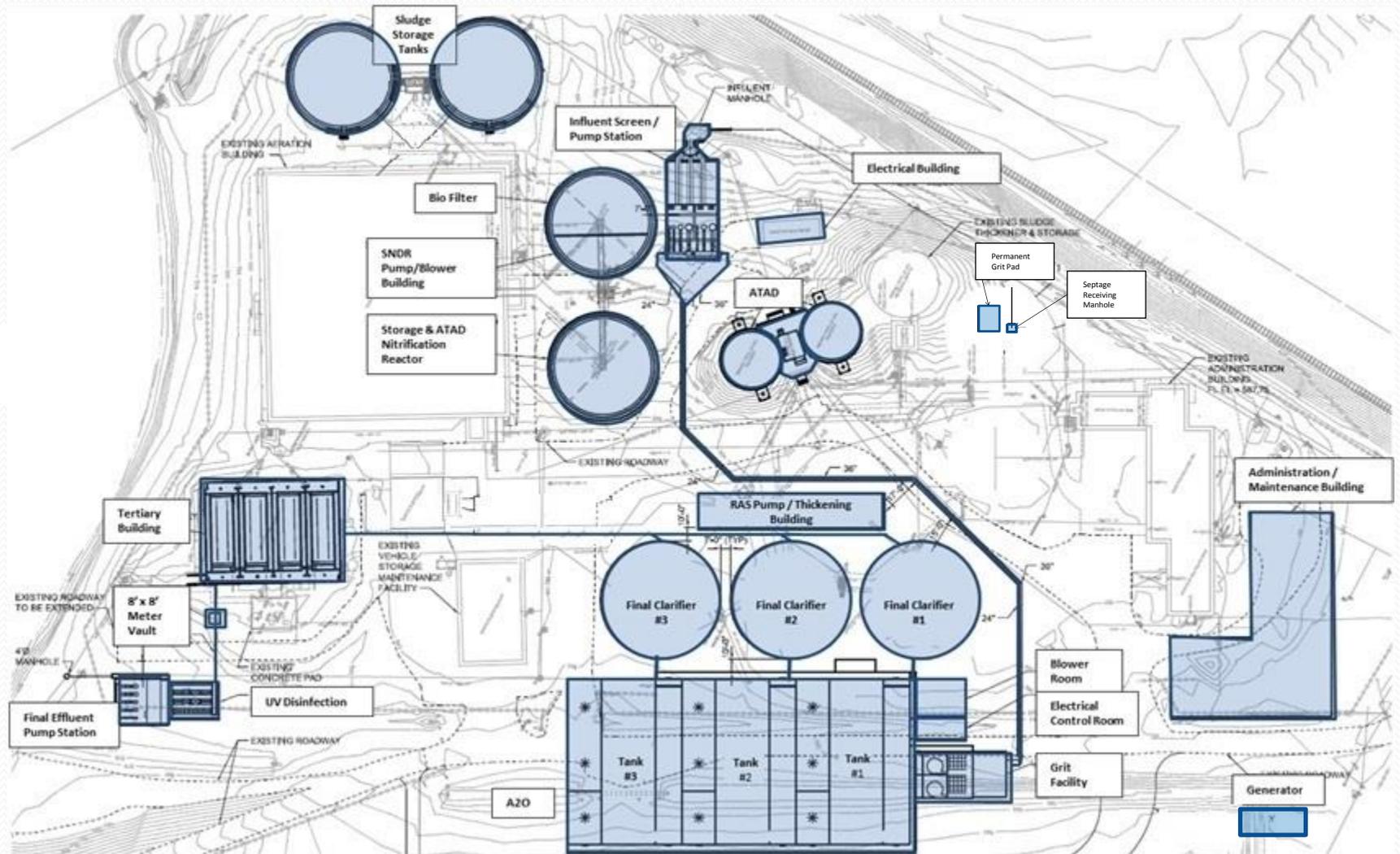


Single point of accountability for design and construction and performance.
Progressive versus Lump Sum DB

Owner's Expectations of Alternative Delivery Begin with Maximizing Benefits of Contractor's Input



Fremont WPCCC Site Plan



Existing Site



Site - Oct 2013



Site – Oct 2014



Site – April 2014



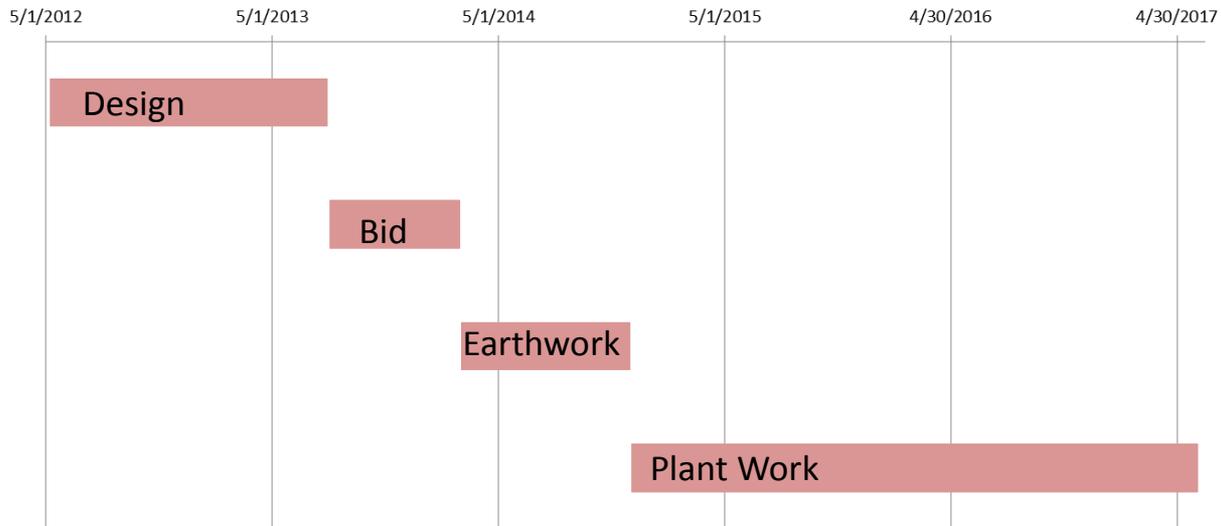
CMAR Benefits at Fremont WPCC

- Schedule Compression
- Pre-Construction Services
- Contingency and Shared Savings

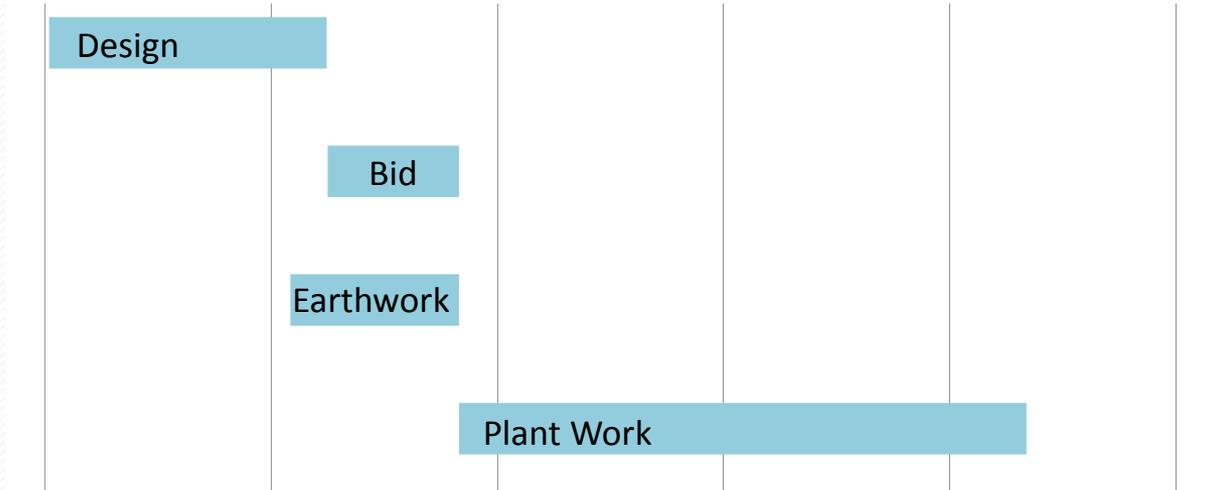
Schedule Compression

Overlapping Activities Reduced Total Project Duration

Traditional Approach



CMAR Approach



Pre-Construction Services

Keeps an eye on the budget during design

- Estimates at Design Milestones
- Value Engineering Sessions
- Constructability Reviews

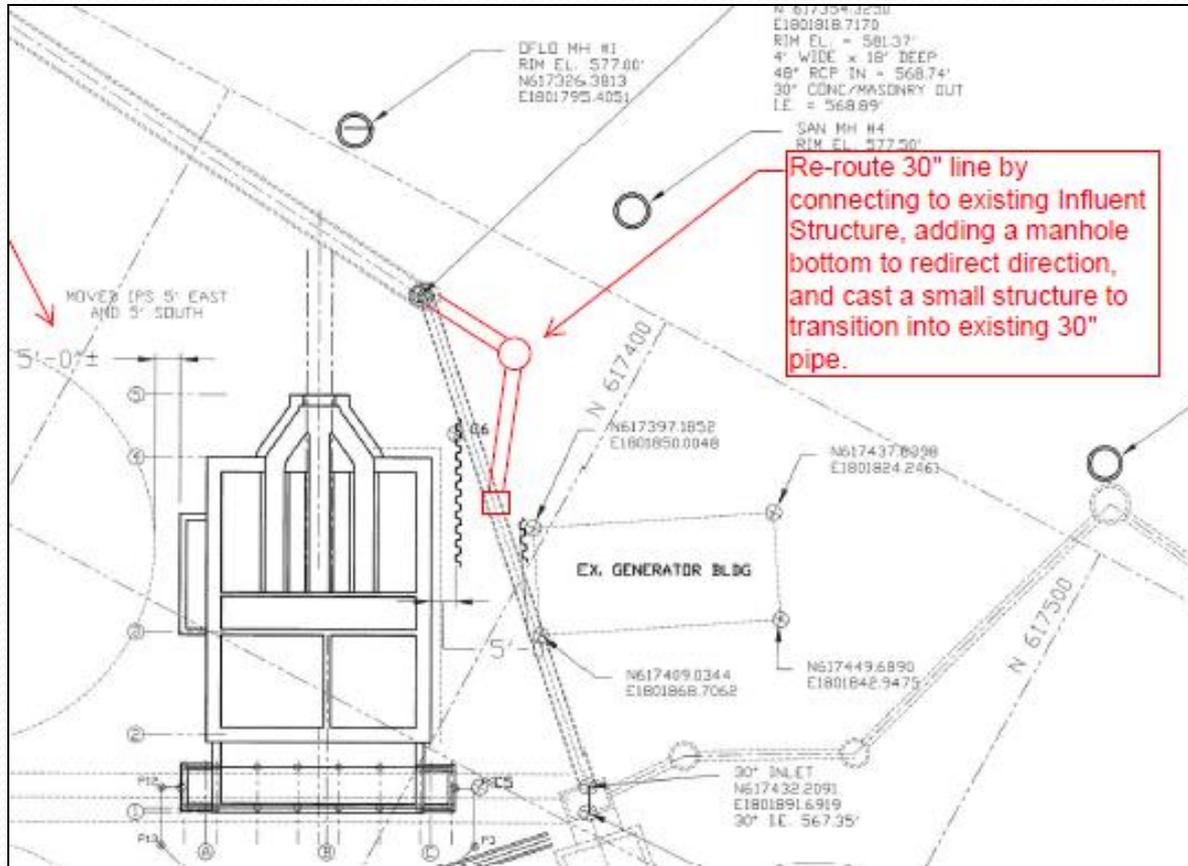
Value Engineering Sessions

Design Stage	VE Savings
30%	\$912,000
60%	\$2,605,000
90%	\$1,113,000
Post Bid	\$1,508,000
<i>Total Cost of Work Savings</i>	\$6,138,000

Example: Procured dual purpose centrifuge to eliminate dewatering building – approximately \$1M in savings

Constructability Reviews

Eliminated Issues During Construction



Contingency and Shared Savings

- Covers items not identified during pre-construction services
- Shared Savings between Owner and CM

Examples of Contingency Use

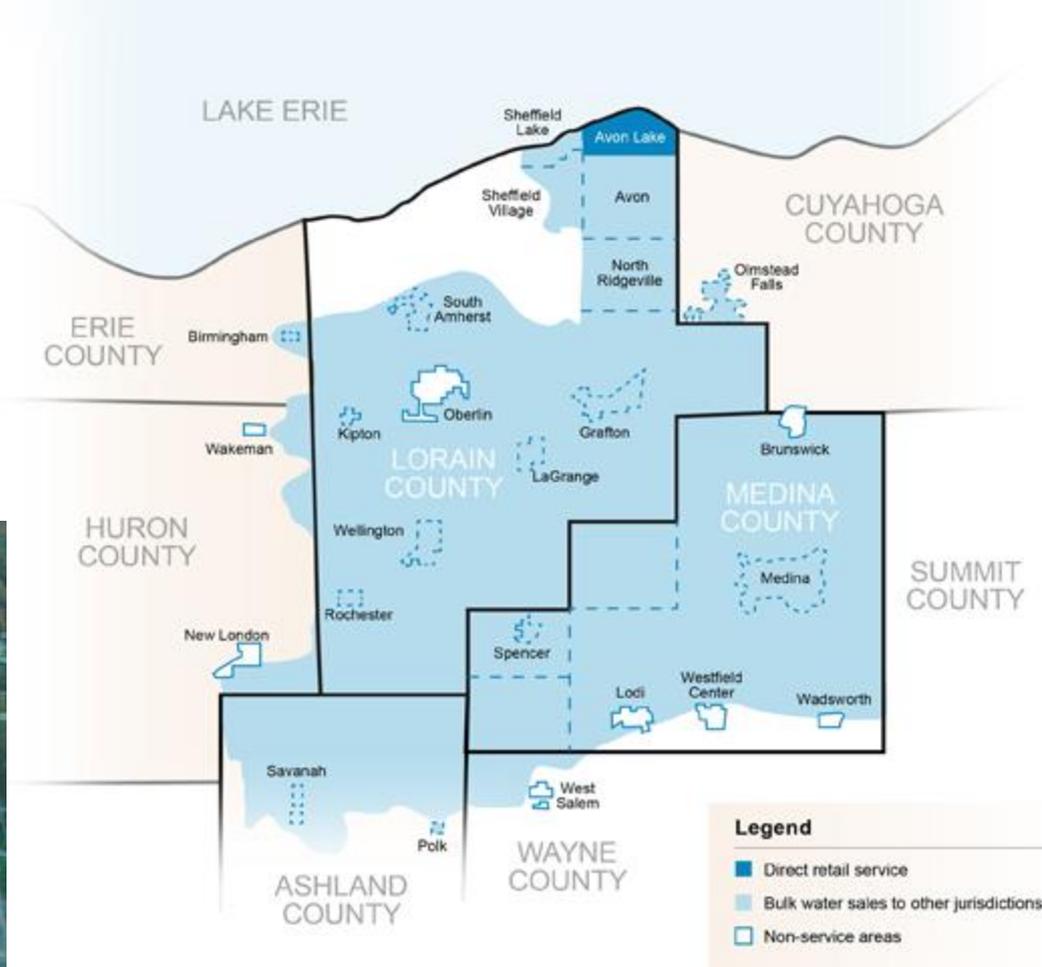
- Stands for Centrifuges – Saved \$20,000
- DBRs for A2O Influent and Effluent Channels – Cost \$30,000



Combined Financials (thru April 2015)

- Authorized GMP Total → \$63,780,104
- Projected Final GMP Total → 63,226,715
 - *So far, projected underrun of \$553,389*
- Work In Place → \$29,045,747 *(46% complete)*

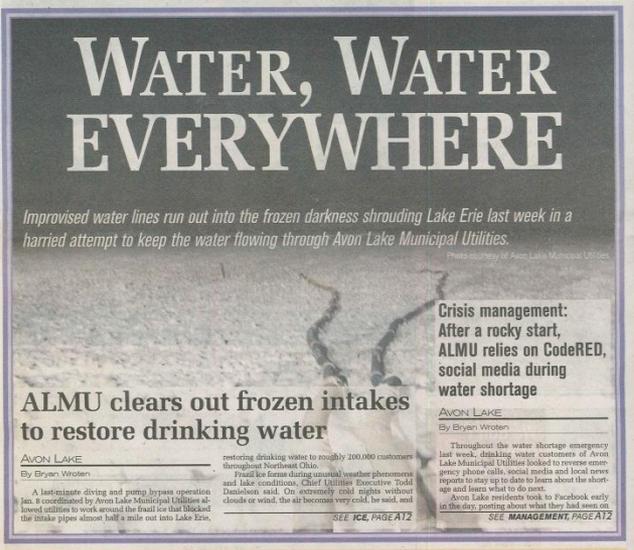
Avon Lake SIP Background



- Supply for 200,000
- 50 MGD WFP

Background – cont'd

- 1/7/14: Intakes partially blocked by frazil ice.
 - Voluntary water conservation.
 - Emergency connections.
 - 1 boil alert.
-
- Several operational changes made to reduce likelihood or recurrence.
 - Preliminary design for additional clearwells (7/14).



Algae Bloom of 2014



Photo: Dave Zapotosky, Toledo Blade



City of Toledo
8 hours ago

URGENT NOTICE TO RESIDENTS OF TOLEDO & LUCAS COUNTY WHO RECEIVE WATER FROM THE CITY OF TOLEDO

DO NOT DRINK THE WATER
DO NOT BOIL THE WATER

Chemists testing water at Toledo's Collins Park Water Treatment Plant had two sample readings for microcystin in excess of the recommended "DO NOT DRINK" 1 micro-gram per liter standard. This notice applies to ALL customers of Toledo water.

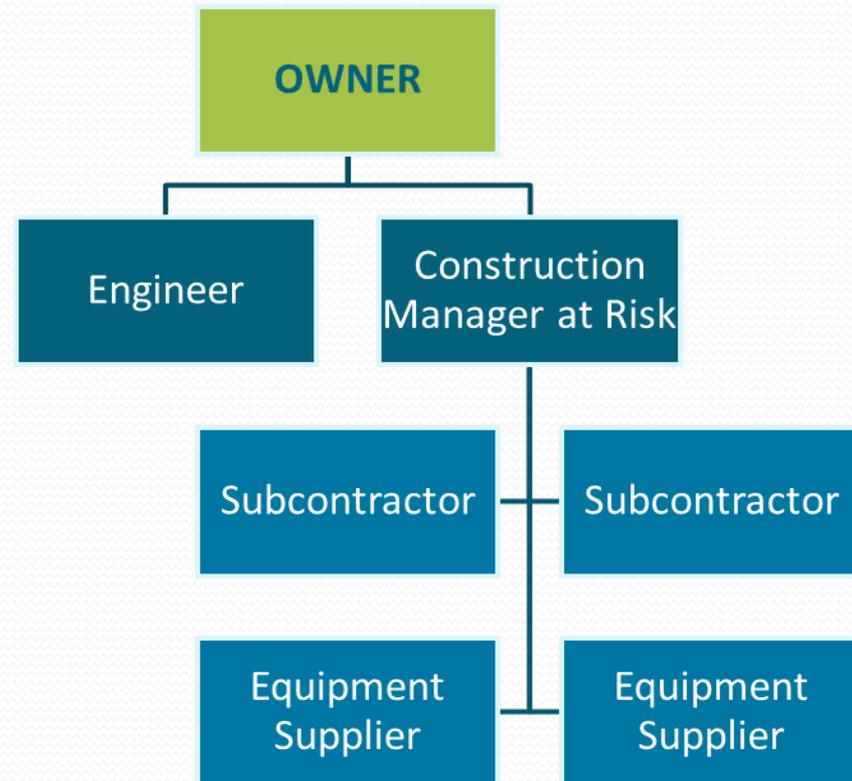
Most important... [See More](#)

[City of Toledo Facebook Site](#)

- Governor announces \$50M for 0%-interest loans.
- Must be awarded by June 2015.
- *Preliminary design had started 1 month prior to.*
- *For \$25M project, could mean \$300k/yr debt svc savings (\$6M over 20 yrs).*

Construction Manager at Risk

- Services include:
 - Preconstruction Services
 - Bid Packaging/Procurement
 - Management of Subs
- Quals Based Selection
- Transparent/Open Book
- High Level of Owner Control



Quals-Based Selection

- Allows focus on Owner's priorities.
 - Experience with CMAR
 - Staff
 - Safety History
 - Project Approach
- Helps ensure partnership
- Shared with proposers in Request for Qualifications.

AVON LAKE REGIONAL WATER
STORAGE IMPROVEMENTS PROJECT
CONSTRUCTION MANAGER AT RISK - REQUEST FOR QUALIFICATIONS

Project Name: _____

Proposer Firm: _____

Selection Criteria		Score Range:		Score
		Min.	Max.	
Firm Qualifications (Maximum 30 Points)				
Experience with Alternative Project Delivery		0	7	
Financial Capacity to Perform Work		0	7	
Proximity	Proximity of primary firm performing work in relation to project site	0	5	
Safety Record		0	5	
DBE Goal Achievement	History of achieving DBE goals	0	3	
Revolving Loan Experience	Experience working with state revolving loan projects	0	3	
Team (Maximum 35 points)				
Project Manager	Experience/ability of Project Manager to manage scope/budget/schedule/quality	0	10	
Estimating Team	Experience/ability of estimating team to accurately estimate work	0	10	
Other Team Members	Experience/ability to perform the proposed work	0	5	
Team Organization	Clarity of Responsibility/communication demonstrated by organization chart	0	3	
Availability to Meet Schedule	Firm's commitment to meeting schedule	0	7	
Reference Projects (Maximum 35 points)				
Reference Projects	Experience on similar projects	0	7	
Experience with CMAR	Number of CMAR projects and their relevance are both considered	0	8	
Previous Performance	For both preconstruction and construction services as indicated by evaluations & references	0	10	
Budget and Schedule Management	Performance in completing projects within the construction budget and schedule	0	5	
Claims History		0	5	
Subtotal (Max = 100)				

Partnering & Shared Savings

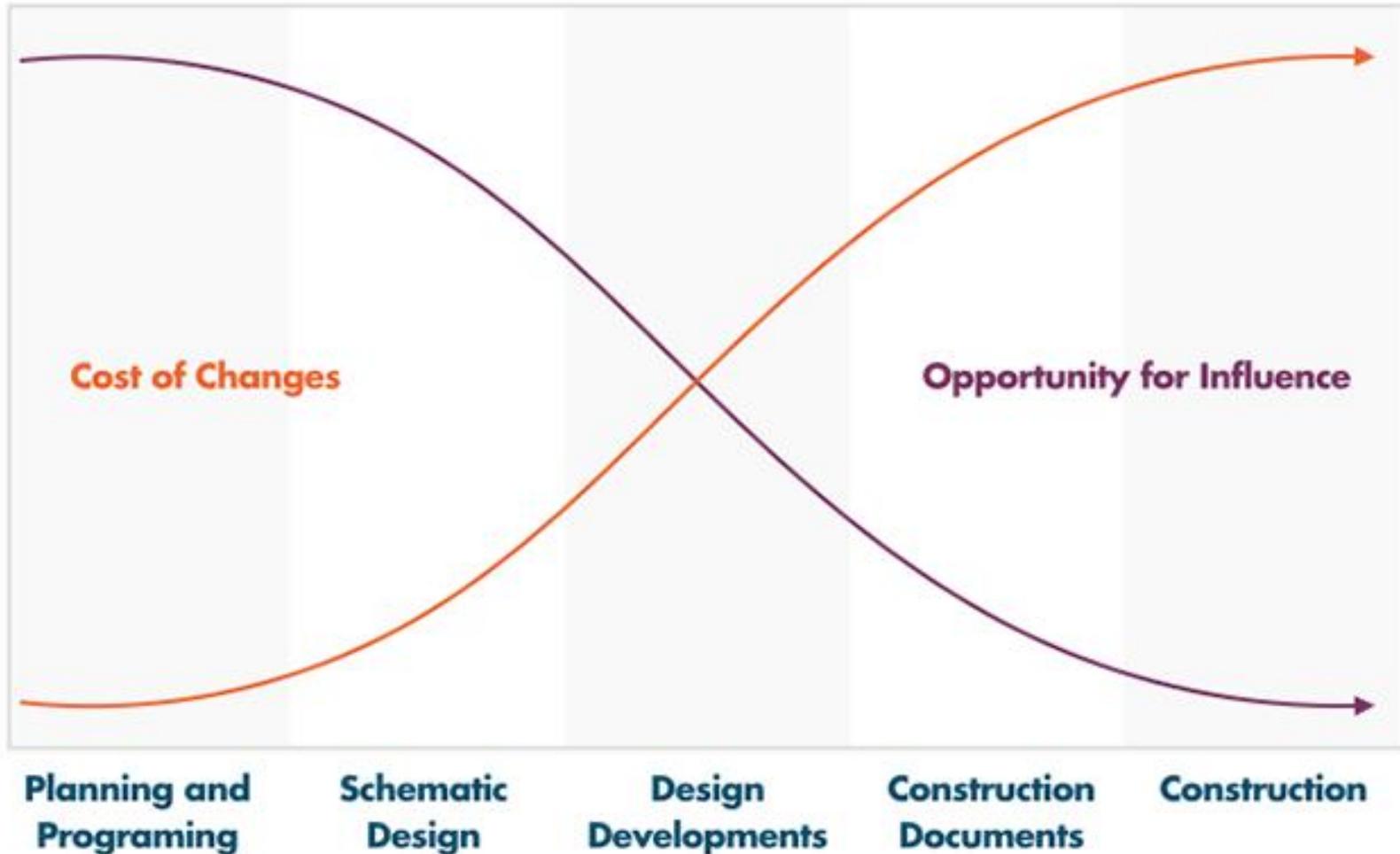
Working together to avert Change Orders can save significant \$\$\$.

- Partnering – Lay out expectations of Owner, Design Team, & Construction Team; Project charter; Issue ownership & escalation; Resolution process
- Shared Savings – If CMAR has something at stake, work harder to prevent Change Orders
 - 1st 1% of contingency – 50:50 owner:CMAR
 - 2nd 1% of contingency – 75:25 owner:CMAR
 - Any remaining contingency – 90:10 owner:CMAR

Constructability Reviews

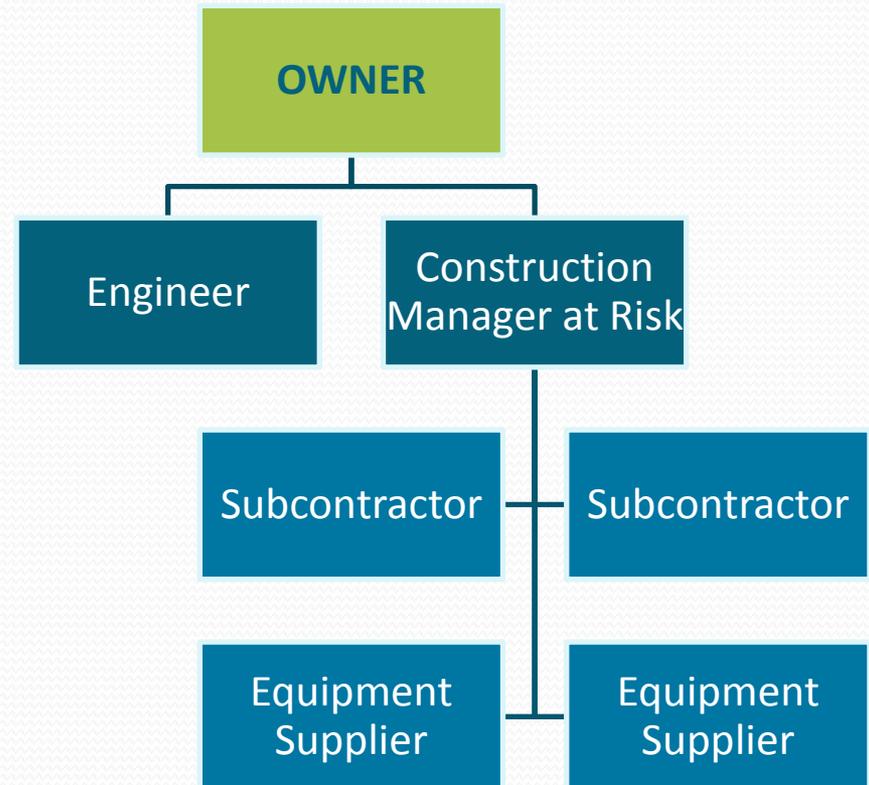
Major Influence

Low Influence



Bid Packaging

- Flexible bid packaging can
 - Improve schedule
 - Enhance local participation
 - Allow procurement of specific equipment
- Subcontractors and Suppliers can be pre-qualified.



Subcontract Negotiation

- Public organization enters into contract with CMAR for GMP & is not officially involved with subcontracts
 - CMAR establishes bidding requirements re pre-qualification & selection
 - CMAR has ability to negotiate, rather than reject all bids & rebid

Reduced Lawsuits

- Quals-based selection
- Contract language
- Partnering
- Constructability reviews
- Shared savings



Photo: Barb Galbincea, NEOMG

Construction Project Status

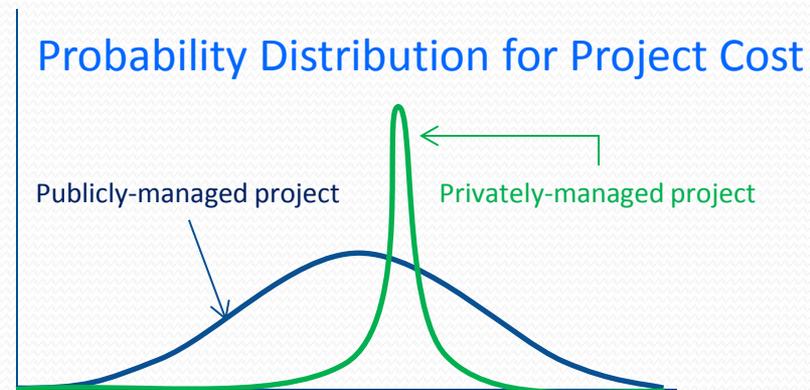
- Subcontracts are 85% bid out. GMP is holding & 12.5% contingency will likely reduce to 5%.



Conclusions



- CMAR is an opportunity to:
 - Accelerate implementation of a project.
 - Hire constructors based upon quals.
 - Undergo constructability reviews.
 - Can package parts based upon expertise/local.
 - Reduce risk for change orders and lawsuits.
- Cannot guarantee:
 - Least cost



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Questions?