The Walsh Group

UNDERSTANDING COLLABORATIVE DELIVERY

November 7, 2019
Introductions

- **Roy Epps**  
  Senior Vice President – Water and Wastewater

- **Libby Loyd**  
  Marketing Lead – Water and Wastewater
Introduction to The Walsh Group

- 121 year-old, family-owned business
- $7 billion in revenue
- 50%-70% self-performed work
- 9,200 employees
- 6,000 craft personnel
- Progressive design-build, CMAR, design-build-finance, early contractor involvement, hard bid, P3

The Walsh Group
#2 WASTEWATER WASTEWATER TREATMENT PLANT BUILDER

Engineering News-Record
Walsh Water/Wastewater Program

$1.7 billion

DESIGN-BUILD
Walsh Water/Wastewater Program

$1.4 billion

CONSTRUCTION MANAGER AT RISK
Walsh Water/Wastewater Program

$3 billion COLLABORATIVE DELIVERY
Collaborative delivery jobs in precon

10

Jobs currently building

60

Walsh Water/Wastewater Program
Growth of Collaborative Delivery

Current Water/WW Market
$5.3B

- 12% Collaborative Delivery

2025 Water/WW Market
$15B

- 50% Collaborative Delivery

source: Water Design Build Council
TRADITIONAL HARD-BID DELIVERY
Hard-Bid Delivery
Hard Bid Steps

- Owner has a need
- Goes through selection process and selects designer
- Design begins
CITY OF SCOTTSDALE
PUBLIC IMPROVEMENTS
TGTF THOMAS GROUNDWATER TREATMENT FACILITY
PROJECT NO. 2015-0008-008
VOLUME 2 OF 4 - SPECIFICATIONS

AUGUST 2018
OWNER:

CITY OF SCOTTSDALE

ENGINEER:
WATERWORKS ENGINEERS, LLC

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SPECIFICATIONS

Table of Contents

1. Scope of Work
2. Specifications
3. Drawings
4. Contractor's References
5. General Conditions
6. Legal and other Information

September 2018

CITY OF SCOTTSDALE

SPECIFICATIONS
Hard Bid Steps

- Equipment reps visit designer to tell about their products
- Designer designs around certain equipment and/or equals
- Project goes out to bid
Hard Bid Steps

- Every equipment rep visits bidding contractors
- Bid day prices start high and reduce like a reverse auction
- GC writes contract to equipment supplier
Hard Bid Steps

• Equipment supplier submits equipment

• Designer rejects submittal 3x

• Equipment approved and delivered
Hard-Bid: Risk to Equipment Suppliers

Designer designs with safety factor on the performance that equipment manufacturers say they can obtain.
Hard-Bid: Drivers for Equipment Selection

- Cost
- Does it meet specifications
- Delivery schedule
- Warranty
COLLABORATIVE DELIVERY
REASONS FOR COLLABORATIVE DELIVERY
Chlorine Contact Basin
Cofferdam at Influent Pump Station
Effective BIM Use
Effective BIM Use
Collaborative Delivery Options: Fixed Price Design-Build (DB)
Collaborative Delivery Options:
Construction Manager at Risk (CMAR)
Collaborative Delivery Options: Progressive Design-Build (PDB)
Collaborative Delivery Options

**DB**
- **OWNER**
- **DESIGN-BUILDER**
  - ONE LUMP-SUM COST

**CMAR**
- **OWNER**
- **DESIGNER**
- **CM**
  - MULTIPLE COST MODELS
  - TRADE SUBS
  - PROCESS EQUIPMENT

**PDB**
- **OWNER**
- **DESIGN-BUILDER**
  - MULTIPLE COST MODELS
  - TRADE SUBS
  - PROCESS EQUIPMENT
FIXED PRICE DESIGN-BUILD
Collaborative Delivery Options: Fixed Price Design-Build (DB)
“Design something to get me to and from work.”
CLIENT’S VISION
30% Bridging Document

✓ Mid engine
✓ Seats maximum of two people
✓ Must be maximum horsepower for model
✓ Must be able to enjoy open air
✓ Must be able to get you to work faster than any other vehicle
✓ Must have leather seats
✓ No excess space for luggage
FINAL PRODUCT
Fixed Price Design-Build (DB)

- Design-Builder is some combination of contractor with a designer
- Selected based on low price and/or qualifications
- Lump sum price and performance guarantee, but limited post-award flexibility and owner input
- Best when owner is seeking an innovative, turnkey solution
- Owner usually offers a stipend to proposers
Fixed Price Design-Build Steps

• Owner conceives project idea

• Owner hires program manager

• Program manager and owner prepare bridging documents
Fixed Price Design-Build Steps

- Program manager prepares and sends out RFQ
- DB teams respond and shortlist is selected
- Program manager prepares RFP with bridging documents
Fixed Price Design-Build Steps

- DB teams progress design to the point of preparing an accurate price
- DB teams submit proposals with design and price
- Owner selects a DB team
Fixed Price Design-Build: Upsides

- Can improve overall design and construction **schedule**
- **One contract** with DB team
- **Risk transferred** to DB team
- Allows some **ingenuity** from DB team
- **Single point of contact** with owner
Fixed Price Design-Build: Downsides

- **Owner must pay** for bridging documents
- Requires a **lot of effort** from DB teams to propose
- Most teams expect a **stipend** in order to pursue
- Procurement **schedule is prolonged**
- **Limited** opportunity for collaboration
- Any change to what DB team proposes is a **change order**
Fixed Price Design-Build: Risk to Equipment Suppliers

• Contractor will take minimal process risk and will flow this down to designer

• Safety factors are minimal

• Designer will write performance-based specifications for everything

• If process doesn’t work, equipment supplier is responsible
Fixed Price Design-Build: Drivers for Equipment Selection

• Amount of process for $$

• Willingness to sign process risk contract
CONSTRUCTION MANAGER AT RISK
Construction Manager at Risk (CMAR)

- Increased designer / contractor collaboration, but limited opportunity for CMAR to drive design innovation
- CMAR prepares initial 30% cost model. After VE efforts, CMAR prepares 60-90-100% cost models
CMAR Steps

• Owner contract with engineer
• Prepare preliminary design
• Select CMAR
CMAR Steps

• Contract with CMAR for preconstruction services
• Entire team works toward final design
• CMAR develops final cost components
CMAR Steps

• Negotiate GMP

• Enter into construction phase contract

• Complete construction
Construction Manager at Risk: Multiple Cost Models

Equipment selection may be locked in at any point
If contractor is putting estimates together at 30-60-90-100…

then so are equipment suppliers.
Construction Manager at Risk: Upsides

• Integrates constructability
• Provides contractor-led estimates
• Scope revision during design to meet project budget
• Can reduce overall project risk and contingency
• Can reduce design misunderstandings and resulting potential for change orders
• Qualifications and past performance to be taken into account when selecting a contractor and process equipment
Construction Manager at Risk: Upsides

- Allows for **off-ramps** if a final GMP cannot be agreed to
- **Collaborative team** – Owner, A/E, CMAR have vested interest
- **Key subcontractors** are utilized for constructability, costs and schedule during engineering phases
- Costing is “**open book**” and allows Owner to participate
- Greater ability to “**fast track**” construction
- **Contingency** owned and managed by Owner
- CMAR offers “**Guaranteed Maximum Price**” (GMP)
Construction Manager at Risk: Downsides

- Relies on **engineers estimate** for initial cost characterization
- Creates a “**forced marriage**” between designer and contractor that may – may not – work
- Final construction scope still subject to **change order** potential
- Added cost to owner for contractors **preconstruction** phase services (although may be offset with construction savings due to early collaboration)
- **Separate contracts** for design and construction creates multiple points of contact for owner
- Owners **unfamiliar** with the process
Construction Manager at Risk: Value Engineering

- Constructability reviews
- Efficiency of equipment
- Operations cost
- Innovation
Construction Manager at Risk: Risk to Equipment Suppliers

Majority of risk is still with designer, who covers this with safety factor.
Construction Manager at Risk:
Drivers for Equipment Selection

- Owner’s preference
- Cost
- Operating costs
  - Power
  - Chemicals
- Equipment maintenance cost
- Delivery schedule
- Start-up effort
Collaborative Delivery Options:
Progressive Design-Build (PDB)
Why Owners Are Selecting Progressive Design-Build

Construction estimating can start very early in design, allowing comparison of specific technical solutions.

“Progressive” estimates keep Owners informed and support informed scope adjustment decisions.

First fully detailed estimate can be used to establish a scope baseline. Estimating process is “open book.”

Owners can use third-parties to verify cost...and go to the hard-bid market if needed (the “off-ramp”).

Guaranteed Maximum Price established at the right time: risk and contingency reduced, schedule needs met.
Progressive Design-Build (PDB)

- Design-Builder is usually a contractor teamed with a designer.
- Offers flexibility and owner input, with final cost determined post-award.
- Best when owner wants input to design, but does not want low-bid.
- Does not provide price certainty at time of award.
Progressive Design-Build Steps

• Owner determines need for project

• Owner hires program manager or elects to do work themselves

• SOQ is submitted
Progressive Design-Build Steps

- Shortlist of PDB teams
- Interviews
- Selection based on price and qualifications
Progressive Design-Build Steps

• Preconstruction begins

• Team works to final design and cost model

• Project is built
Progressive Design-Build:
Multiple Cost Models

Equipment selection may be locked in at any point
If contractor is putting estimates together at 30-60-90-100... then so are equipment suppliers.
Progressive Design-Build: Upsides

- One contract, to DB team
- Cost model approach ensures you meet budget
- Risk is pushed to party most capable of handling
- Truly a team approach
- Design and contractor are more likely to share resources
- Allows addition of operation to cost model
- Selection-based qualifications with price components
- Provides off-ramp if needed
Progressive Design-Build:
Big Creek WRF PDB – Equipment Selection Example

$300 million
38 MGD
MBR facility
30% drawings
Progressive Design-Build: Big Creek WRF – Equipment Selection Example

• 8-month process
• Extensive research
• Specific criteria
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**Notes:**
1. Points pro-rated based on actual cost difference based on %
2. Determine Total Lowest Capital Cost
3. Award Max point to Total Lowest Cost Proposer
4. Compare total lowest cost to Other Proposers' Total Costs
5. Decrease Point Awards to Remaining Proposers by total cost increase % vs Lowest Cost Proposer
Progressive Design-Build: Value Engineering

- Constructability reviews
- Efficiency of equipment
- Operations cost
Progressive Design-Build: Risk to Equipment Suppliers

- Process risk flows down to the equipment suppliers
- Design will include some safety factor
- May require a performance bond from equipment suppliers
Progressive Design-Build: Drivers for Equipment Selection

- Past performance/reputation
- Cost
- Operating costs
  - Power
  - Chemicals
- Equipment maintenance cost
- Delivery schedule
- Start-up effort
How to Get Your Product Selected

- Realize collaborative delivery takes a lot of time and effort during preconstruction
- Be prepared to provide honest information. We’re going to share your information!
- Be solution-minded
- Remember that the owner doesn’t have to use the low bidder
- Provide a service that the owner will praise to everyone
What Affects Equipment Supplier Selection?

- Past performance
- How well known is your equipment
- Ease of maintenance
- Response of local representatives
- Schedule
- Do something that makes you stand out!
Questions?