Texas Desalination Possum Kingdom Raw Water Roughing Facility

September 21-22, 2017

01 INTRODUCTION

02 WHY CMAR?

03 PLW APPROACH TO CMAR PROCESS & PROJECT CONSTRUCTION

04 **CMAR METHOD CONS** 05 **CMAR METHOD PROS** 06 **PROJECT SUCCESS CONCLUSIONS/SUMMARY OF** SUCCESSFUL CMAR DELIVERY

CONTENTS

INTRODUCTION

01 INTRODUCTION NEED FOR PROJECT



SECOND STAGE SHORT-TERM DROUGHT STRATEGY

Reduce Raw Water Usage from Hubbard Creek Reservoir (Hubbard)

- Utilize water from Possum Kingdom (PK) Lake
 - Chloride level of PK raw water is 1,150-1,200 mg/L
 - Membrane Filtration
 - Brackish water RO System
- Maintain current operations at existing Surface Water Treatment Plants (SWTP)





01 INTRODUCTION NEED FOR PROJECT



DESIGN/ PROCURE/ CONSTRUCT

New Water Pretreatment Facility

- Treat brackish water from PK Lake
 - Produce a product water quality consisting of a Chloride level of 400mg/L
 - Membrane Filtration (MF) Pretreatment
 - Consistant quality feed water for RO System
 - Reverse Osmosis (RO) System
 - Blend 15 MGD permeate w/ other Abilene raw water sources
 - Two (2) existing SWTP's downstream of blending will produce final drinking water







02 WHY CMAR?



CONSTRUCTION MANAGER AT RISK

Project Procurement Method

Beneficial if project involves:

- Need For Immediate Improvements
- Design is Complex, Difficult to Define, Subject to Change or has Several Design Options
- High Level Coordination with External Authorities Required
- Sequence or Schedule Sensitive



02 WHY CMAR?



PROJECT SELECTION PROCESS

One Step Process

Schedule driven:

- Owner Request for Proposal (RFP)
 - Construction Schedule
 - Qualifications Company, Subcontractors & Individuals
 - Project approach/ Constructability Review
- RFP Response Submission
- Owner Evaluated Responses
 - No Interview Process
- Owner Selected CMAR Partner
- Best Value





03 PLW APPROACH



APPROACH TO CMAR PROCESS

RFP Response – Best Value

Focused:

- Construction Schedule
- Partners/Team (Subcontractors/Vendors)
- Construction Approach
- Multiple GMP's
- Risk Management
- Value Engineering (VE)





03 PLW APPROACH



APPROACH TO CMAR PROCESS

Schedule

Concurrent Execution:

- Preconstruction Services
- Design
- Early Procurement GMP1
- Construction
- Multiple GMP's Total GMP
- Timely Approval Process
- Teamwork

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04 CMAR METHOD CONS



CMAR METHOD CONS

Learning Curve

New to procurement method

- Owner
 - Select an experienced Designer and/or Contractor
 - Organized personnel
 - Strong communication
 - Involve ALL parties influencial to the successful completion:
 - Directly
 - Indirectly





05 CMAR METHOD PROS



CMAR METHOD PROS

Schedule:

- Expedited:
 - Design
 - Submittal review
 - Material procurement
 - Changes
 - Project completion

Budget:

- Reduced change orders
- Reduced re-work
- Reduced unknowns

Communication:

- Team
- External Authorities

Team Relationship:

- Owner/Designer
- Designer/Contractor
- Owner/Contractor





06 PROJECT SUCCESS



CITY OF ABILENE WINS

Project Built on Time

Water Sources:

- Diversify raw water sources
- Lower stress on Hubbard Creek Reservoir supply

Budget:

Reduced Design/Construction costs

Community Relations:

• Local residents have water for the future





06 PROJECT SUCCESS



PLW WATERWORKS WINS

Successful Project

- Experience
- Profit
- Good Standing Relationships:
 - Owner
 - Designer
 - Subcontractors
 - Vendors



UMMARY OF UCCESSFUL



07 SUMMARY OF SUCCESSFUL CMAR DELIVERY





Cost & Savings

- Real Time Collaboration
- Owner Needs are Addressed Timely
- Conflict Avoidance
- Shared Risk Results in Lower Cost

Schedule

- Owner Aware of Cause & Effect
- Multiple GMP's Facilitate Construction Progress
- Designer's Immediate Response
- Bid Packages
 - Early Equipment Procurement
 - Early Structural Packages
 - Early Subcontrator Selection



07 SUMMARY OF SUCCESSFUL CMAR DELIVERY



POSSUM KINGDOM LAKE



THANK YOU