FAST TRACK RELIEF TO MIDLAND’S EMERGENCY THIRST

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Presented to Texas Association of Clean Water Agencies
Midland Has a Booming Oil/Gas Economy...

- Booming oil/gas industry
- 1,000s of job created each year
- Fastest growing area in the country
- People struggle to find housing
- 3% unemployment
Sustained Drought is Stressing All Systems...


2011 was 3rd worst drought in recorded history
...And the Price of Success (and Sustained Drought) is Thirst for Water!

- More people = higher water demand
- Oil/gas business = higher water demand
- Colorado River Municipal Water District relies on 3 reservoirs:
  - 2 dry
  - 1 at 15% capacity
- Sustained drought
- CRMWD restrictions starting June 2013

Healthy economy is driving the water demand up, up, up......
Unique Project Challenges Require Development of a Unique Solution

FUNDING – not in City budget
SCHEDULE – need before end of May 2013
LOGISTICS – aquifer (T-Bar Ranch) 58 miles away
LAND ACQUISITION – 70 miles private-owned land

RESOURCES – lacking labor, accommodation and support
A comprehensive and collaborative team is needed

Any one of these challenges alone would be difficult to overcome
BUILDING A FAST TRACK TEAM

Bringing a fast-track team together to achieve results despite project challenges
A “Public-to-Public” DBFOM Team Assembled for the Challenges

This is a “P3” team of 16 companies to address schedule, logistics, land acquisition, funding, and resources challenges.
Overland Contracting (B&V) and Garney self-performed the construction scope
FUNDING CHALLENGE

Financing a $200-million project in parallel with land acquisition and design-build activities
Critical Water Situation...and with No Funding

• Situation clearly required *immediate* spending to
  – Well test drilling
  – Acquire ROW
  – Design
  – Buy pipe and equipment
  – Construction

• City did not have funding in place, let alone a solution developed

A P3 “Public-to-Public Partnership” was the logical choice to move forward
The P3 Solution Solves this Emergency Funding While Offering Other Benefits to the City

<table>
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<tr>
<th>MINIMIZES RISK TO CITY</th>
<th>SAVES MONEY</th>
<th>FUNDS PROJECT FAST</th>
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<tr>
<td>also capitalizes on private-sector efficiencies</td>
<td>MCFWSD#1 gets public sector financing with municipal rates</td>
<td>P3 allows interim private sector financing to get started on project</td>
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The interim private sector financing through Wells Fargo and local Midland banks allowed early procurement, design, and land acquisition to proceed
MCFWSD#1 Sold Nearly $200-million in Bonds – Results in a Low Cost Solution to City Rate Payers

• Tax-exempt revenue bonds
• Lower-cost water for rate payers
• City ownership of facilities after 20-year contract
• Bonds sold out in a day to local investors
• Secured blended rate of 4.39% instead of 5% anticipated
SCHEDULE CHALLENGE

Delivering 20-MGD before May 31, 2013
Fast Track Design-Build Achieves First Water Before May 31 2013

PRECONSTRUCTION
- Prelim Design
- GMP Development

EARLY WORKS
- Order Pipe
- Site Establishment
- Labor Camp
- Order Long Lead

CONSTRUCTION
- Final Design
- Buyout
- Construction
- Commissioning/Startup
- First Water

CONSTRUCTION START
FIRST WATER DEADLINE

2012 2013
Fast Track Measures
Taken to Ensure On-time Delivery

BEFORE CONSTRUCTION CONTRACT
• 58-miles of 48” Pipe ordered early
• 50 test wells & site work
• Submittals packages
• Satellite communications
• Mobilize field staff
• Long lead air compressor package

AFTER CONSTRUCTION CONTRACT
• Up to 8 pipeline crews working at once
• 24-hour/day production well drilling
• Staged TCEQ approvals on design
• Design/Construction/Land Acquisition done in parallel

...and many more strategies employed!
Land Acquisition Requires Collaboration with Engineering...and Construction!

Note how the land acquisition started and ran in parallel with pipeline and facilities design.
A true fast-track model to cover funds, land, design and build
LOGISTICS CHALLENGE

Working in a desolate area with 47 worksites and 58-mile pipeline alignment
44 Well Sites, 3 Facility Sites and 58 miles of Pipeline – the Logistical Challenge

Combined with other project issues the landscape presented plenty of challenges
Compare the Project Solution to the Logistic Challenges

T-Bar Well Field Site  Intermediate Tank Site  Terminus Site
T-Bar Well Field Development

44 Wells at 350 GPM to Deliver 20 MGD Peak

T-Bar Well Field
22,000 + acres
Winkler & Loving Counties

Pecos Valley Aquifer
550,000 acre-ft
Potable Water
T-Bar Well Field Collection

44 Wells
Spaced Over Approx
4,500 acres
(Enclosure w/ Fencing)

2 Mil Gallon Ground
Storage Tanks

Pump Station
4 – 6.67 MGD Pumps
(1 Redundant)

Primary
Electrical Service
(22-mile Oncor
Line)

Collection System
6” to 18” HDPE Pipe

Pipeline
T-Bar Well Delivery System

48” Steel & Concrete Reinforced Pipe (approx 200 pipeline & roadway crossings)

Five Million Gallon Ground Storage Tanks

City of Midland Two Million Gallon Elevated Storage Tank

Chlorination Station

Delivery Point and Meter

City of Midland Chlorination Station

Intermediate Tank Site

Terminus Site

T-Bar Well Field Site

+- 25 miles

+- 500'
B&V and Garney Meet the Logistics Challenge

Get people close to work:
• OCI site offices on west side/Garney to east
• Labor accommodations built ground-up and close to work

Supervision/facilities for multiple work sites:
• Developing existing wells for construction phase water
• Supervisory and safety staff at all sites – around the clock

Communications:
• Cell phone boosters in vehicles & offices
• Satellite system communications early works

Design worked alignment and locations along with land acquisition
LAND ACQUISITION CHALLENGE

Right-of-ways and easements across 70 miles of west Texas terrain
Pipeline Logistics Challenges

- Privately owned land – more than 55 land owners
- Oil and gas wells, pipelines, facilities
- Sand dunes
- 550-foot elevation rise escarpment
- Prairie and cattle ranches
- Major wind farm
- Habitat for dunes sagebrush lizard
The Challenge to Acquire 58 miles of ROW

• This acquisition started same date as design and worked in parallel with design and construction!
• This effort not only included permanent and construction easements acquisition but also utility crossing agreements (226 ea.), highway and country road crossing permits (15 ea.) and railroad permits (1 ea.)
• Step 1 – route selection
• Original route from T-Bar Ranch to Midland
• Original route with pipelines
• Original route with landowners
• Final routes selected
Design-Build Teamwork Gets It All Done

- Land access to 22 easements in 6 months
- Land acquisition phased to accommodate construction start locations
- Land acquisition costs within budget
- NO CONDEMNATIONS!!

Land acquisition, design, procurement, clearing, delivery, construction — all fast-tracked for results
We Made It Happen! First Water Delivery

17 DAYS Ahead of Schedule
QUESTIONS

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