



Experience Bidding Egg-Shaped Digester Facility

District of Columbia Water and Sewer Authority

presentation by

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to

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at

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Blue Plains AWWTP

- 💧 370 MGD Advanced Wastewater Treatment
- 💧 Digestion is part of the original plant design and operated since the 1940's
- 💧 Original "traditional" digesters were abandoned in 1999 due to need for extensive safety and capital repairs
- 💧 Current Biosolids Management Program is lime stabilization followed by land application average 1200 wet tons/day

WASA Blue Plains AWWT Biosolids Management Program



WASA Blue Plains Advanced Wastewater Treatment Plant
Biosolids Management Program

Our vision:

Establish a self-sustaining, world-class regional biosolids management program that will carry our facility through the demands of this century

Our mission:

Provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, cost effective management of biosolids while helping preserve agriculture and protect the Chesapeake Bay





Facility Design

- 💧 A new digestion facility utilizing egg-shaped vessels was recommended by studies of biosolids processing deficiencies at Blue Plains and Board of Directors adopted Biosolids Management Plan
- 💧 Design of new facility commenced in 2002.
- 💧 36 MG facility to produce a Class B product commenced in August 2002
- 💧 Board of Directors approved additional facilities to produce a Class A product in March 2004



Facility Design Cont'd

- Key features of the Class A digestion project:
 - 8 4.5MG eggs; 120 feet tall
 - 4 2.5MG silos for batch processing to produce Class A
 - Architectural appearance and height acceptable to DC Zoning Commission, DC Commission of Fine Arts, National Capital Parks and Planning Commission
 - 6.5 year construction period (two contracts)
 - Project budget \$357M



Facility Design Cont'd

- Contract prepared in two packages
 - EDF-1C
 - Vessels/foundations/galleries/sitework
 - EDF-2C
 - Process
mechanical/electrical/I&C/equipment/buildings
- Project developed in two contracts to fast track
- First contract complete & advertised for bids on September 30, 2005

Egg-shaped Digester Model





Efforts to foster competition, ensure value and meet DCWASA's goals

- 💧 Required designing for concrete and steel egg vessels
- 💧 M&WBE opportunities evaluated and significant outreach efforts conducted
- 💧 Pre-bid meeting well attended by interested prime contractors and subcontractors
- 💧 Pre-selected and pre-qualified items and the EDF contract itself were advertised nationally in ENR



Issues During Bidding

💧 Surety Industry: “A Sea of Change”

- ◆ The insurance companies become adverse to ‘risk’

💧 Contractors/sureties raised concerns over:

- ◆ no cap on liquidated damages
- ◆ liability for NPDES permit violations and unlimited consequential damages
- ◆ hazardous material responsibility
- ◆ unacceptable bond form language
- ◆ unique construction - making options to complete the project should the contractor default, very limited



The EDF Bid Experience

- 💧 Original bid date of November 15, 2005 extended several times due to risk concerns not being addressed to potential bidders and sureties satisfaction
- 💧 Bid opening held February 13, 2006: No bids received
- 💧 DCWASA initiated discussions with bidders and sureties to determine what changes would be necessary to secure bids
- 💧 A second bid opening was held on August 17, 2006
 - ◆ Only one bid was received @ \$306 M, which would increase the projected total project cost to more than \$600 million



Why only one bidder?

- 💧 Contractors in the Washington DC area, and especially wastewater construction contractors, are in high demand and can selectively bid jobs and increase their bid prices based on:
 - ◆ Bonding availability
 - ◆ Assessment of risk
 - ◆ Schedule requirements
 - ◆ Liquidated damages
 - ◆ Project delivery method



Other Cost Drivers

💧 World events

- Terrorist attacks of 9/11
- Middle East conflict
- Massive building programs in Asia, particularly China, causing material scarcity
- Natural disasters (Katrina e.g.)

💧 Robust local economies

💧 Mandated Chesapeake Bay nutrient work now thru 2013



Post-bid Decision Process

- 💧 Cash flow analysis: indicated not a viable project - too long term pay back
- 💧 Conclusion was that the project should be deferred for three years while watching market conditions, legislative and regulatory activity, and emerging technology

An aerial photograph of a large industrial or residential complex, overlaid with a semi-transparent blue filter. The complex features numerous circular structures, possibly storage tanks, and several large rectangular buildings with grid-like patterns. A road or railway line runs diagonally across the scene. The text "The End" is centered in a bold, yellow font.

The End