MSDGC’s First Sewer Design Build Project – A Huge Success!
Agenda

1. MSD’s response to construction reform
2. Project prototype: Oakley Station Sewer Separation
3. Lessons learned
4. Current efforts with OEPA
MSD Organizational Response to Construction Reform
New Procurement Options Available to MSD by Ohio Construction Reform

Multiple Prime General Contracting

Construction Management at Risk

Design-Build

Single Prime General Contracting

New approaches available with passage of HB 153 in 2011.

Traditional Approach

Alternative Delivery Approaches

Brown and Caldwell
DB Variations

**Progressive** *(negotiated price)*
- DB selected primarily on qualifications
- DB collaborates with owner throughout design
- “Open book” negotiations for GMP or fixed price

**Prescriptive** *(competitive)*
- Owner prepares preliminary/30% design prior to DB procurement
- Competitive fixed-price procurement of DB

**Performance Based** *(competitive)*
- Owner prepares performance-based RFP
- DB teams prepare design and price proposals
Delivery Method Trade-Offs

- Performance-Based Requirements
  - Low
  - High

- Owner Design Involvement
  - Low
  - High

- Owner Management/Price Risk
  - Low
  - High

- Performance-Based DB
- Prescriptive DB
- Progressive DB
- CM at Risk
- Design-Bid-Build

Brown and Caldwell
MSD’s Strategic Plan Guides Project Delivery Decisions

**Within Goal 1:**
“Continually align CIP management with Best Management Practices...”

**Within Goal 3:**
“Strategically create a culture of innovation.”

**Within Goal 5:**
“Our constant focus on costs ensures we never lose site of the customer.”
MSD Alternative Delivery Considerations

Save Money

• Shorter project schedules (time value of money)

• Competition = market innovation (design ideas and construction methods)

• Improve alignment of design engineer and contractor to reduce change orders and claims
Comprehensive Training Program Awakens MSD to DB Methods

Industry Forum

In House Workshops

- Procurement
- Project Delivery
- Quality Assurance
- Peer Agency: CWW
CIP Review Process Revised To Consider Design Build & CMAR

Project Charter

Business Case Evaluation

Capital Improvement Plan

Screening Criteria
- Risk Profile
- Schedule Drivers
- Budget Constraints
- Innovation
- Special Requirements

Chosen Delivery Method
- DBB
- DB
- CMAR

Brown and Caldwell
MSD Considerations for DB Projects

DB Works Well When:

- Time is critical
- Existing conditions and desired outcomes are well defined
- Project uses well understood technology
- MSD staff willing to relinquish some control
- Early contractor input will save time and money
MSD Prototype DB: Oakley Station Separation Sewer Project
Why Use Design Build Now?

- **Construction reform** provides MSD tools to reduce the cost of all capital projects. [Prove it.]

- Oakley Station is DB prototype project (lessons learned will guide future projects)
  - Expedited project completion to facilitate development
  - **Lever preliminary design** prepared by developer (least cost to MSD)
  - Eliminate two CSO’s quickly

Brown and Caldwell
Expedited Infrastructure Construction Supports Urban Renewal
Proposed Oakley Station
Collect Storm Water Flows for Drainage Area
Reroute Sanitary Sewers
Reroute Affected Utilities as Necessary
Oakley Station Project Particulars

• First DB Project Under OCR By MSD

• Storm water Separation Sewer
  ✓ Eliminates Significant CSO
  ✓ 2,000 foot 60” storm sewer tunnel
  ✓ 500 foot 72” storm sewer tunnel
  ✓ Depths to 40 feet
Oakley Station Project Particulars
continued . . .

- **Design Builder:** Ulliman Schutte
- **Tunneling Sub:** Mid-west Mole
- **Brown and Caldwell:** Technical Advisor
- **Budget:** $12,200,000

Tunnel Machine ‘Breaks Through’ at Downstream Shaft
Contractor Procurement, Design & Construction Completed In 21 Months

- **MARCH 14, 2012**: Legislation Approved by BoCC
- **AUGUST 22**: Legislative approvals – necessity and funding
- **AUGUST 29**: Receive Proposals
- **MAY 1**: Develop statutorily-required internal processes*
- **MAY 1**: Issue RFQ Legal Notice
- **JUNE 7**: Receive, review, and rank RFQs
- **June 7**: Select short-list; issue RFP for technical details and GMP
- **NOVEMBER 15**: Negotiate contract & Issue NTP
- **March 15, 2013**: Design Complete
- **DECEMBER 31, 2013**: Construction Complete

*Criteria Engineer appointment; evaluation committee appointment; RFQ development; RFQ scoring methodology
Oakley Station RFQ Evaluation Criteria

- Technical Qualifications
  - Project team
  - Experience with project type
  - Local Experience
- Experience with DB or CMAR delivery
- Financial Qualifications
  - Project size
  - Bonds
  - Line of credit
  - Balance sheet
- Safety Record

7 Proposals Received
Proposal Evaluation Criteria Set to Manage Risk

Approach to Design & Construction (35%)
- Permitting, Design Concepts & Methods
- Coordination, Logistics, Geotechnical

Guaranteed Maximum Price (40%)

Project Management Plan (25%)
- Personnel & Team Structure
- Controls: Cost, Schedule, Safety, Quality

Brown and Caldwell
## Competition Saved MSD ‘Big Money’

<table>
<thead>
<tr>
<th>Proposal Cost Element</th>
<th>Jay Dee Constructors</th>
<th>Layne Heavy Civil</th>
<th>Ulliman Schutte</th>
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<tbody>
<tr>
<td>Design Services Fee (L.S.)</td>
<td>$1,000,000</td>
<td>$781,895</td>
<td>$666,000</td>
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<td>Pre-Construction Services Fee (L.S.)</td>
<td>$500,000</td>
<td>$288,606</td>
<td>$133,000</td>
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<td>General Conditions Cost (L.S.)</td>
<td>$2,000,000</td>
<td>$865,485</td>
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<td>Cost of Work</td>
<td>$6,300,000</td>
<td>$8,010,555</td>
<td>$6,116,000</td>
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<td>**Subtotal:</td>
<td><strong>$9,800,000</strong></td>
<td><strong>$9,946,541</strong></td>
<td><strong>$7,692,000</strong></td>
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<td>Design Build Services Fee (L.S.)</td>
<td>$900,000</td>
<td>$1,180,294</td>
<td>$889,000</td>
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<td>**Subtotal:</td>
<td><strong>$10,700,000</strong></td>
<td><strong>$11,126,835</strong></td>
<td><strong>$8,581,000</strong></td>
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<td>Contingency (L.S.)</td>
<td>$500,000</td>
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<td><strong>GMP</strong></td>
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<td><strong>$11,548,443</strong></td>
<td><strong>$8,887,000</strong></td>
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**Original Budget: $12,200,000**
## Overall Project Savings

<table>
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<th>Cost</th>
<th>Comment</th>
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<tbody>
<tr>
<td>Original Cost Estimate</td>
<td>$12,200,000</td>
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<tr>
<td>Guaranteed Max. Price</td>
<td>$8,787,000</td>
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<td>Initial Savings</td>
<td>$3,413,000 (28% savings)</td>
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<td>Additional Shared Savings for MSDGC at Project Completion</td>
<td>$234,170 • From Buyout Savings and Unused Contingency • Shared savings split 60/40 between DB and MDDGC, respectively</td>
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<tr>
<td>Total Project Savings</td>
<td>$3,647,170 (30% savings)</td>
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</table>

Brown and Caldwell
Oakley Station Finishes Successfully

- Design and Construction Completed In Only 15 Months.
- All Work Completed $3,650,000 (30%) Under Budget.
- CSO Eliminated Well Ahead of Global Consent Decree Schedule.
- No Claims or Change Orders.
- No Accidents.
- No Neighbor Complaints.
Experienced Client Advocate Helped Drive The Procurement Process

Excellent Teamwork Among Agency Stakeholders Expedited Procurement

Worked the Market for Fair & Open Competition
  • Stipend
  • Clear Requirements Promoted Interest
Current efforts with OEPA
Current PTI Requirements Limit Use of DB

OAC Chap. 3745 - 42 Requires Permit to Install & Plan Approvals for Water Pollution Control

PTI Permit Applications Require:

1. OEPA Standard Forms
2. Permit Fee
3. ‘Complete Sets of Detailed Plans and Contract Specifications’
   - Cross Section, Plan & Profile of all Unit Processes
   - Identification and Location of Equipment, Piping & Joints
Working with OEPA to accommodate DB

- Frequent early meetings with OEPA
  - Discuss project concepts and potential options
  - Prepare 3 treatment options for RFP
  - Develop Prescriptive Criteria
- RFP to DB teams with Options and Prescriptive Criteria
- Preliminary selection of DB team
- Proposed treatment option submitted to OEPA
  - General plan concepts submittal
- OEPA approves general concepts submittal and DB contractor given notice to proceed
- Documents submitted to OEPA at 60% level
- Construction Begins
- Submit “As-builts”
Discussion