USACE Rapid Disaster Infrastructure Program

Presenter Name: Timothy P. Gouger
Presenter Title: USACE Contingency Program Manager
Date of Presentation: 5 May 2015
Discussion Topics

- Rapid Disaster Infrastructure (RDI) Program
  - Purpose
  - Requirements
  - Background
  - Scope of Work
  - MATOC Awards
  - Project Examples
Purpose

- Rapid Disaster Infrastructure (RDI) MATOC
  - Construction-based contract to address Time-Sensitive
    - Disaster Response and Recovery
    - Infrastructure
Overview

- Requirements
  - Construction based contract
    - NAICs: 236220
    - Bond (SD VOSB): $4.5M
  - Time-sensitive
    - Immediately dangerous to life and health
    - Operational impacts to the government
  - Infrastructure, Disaster
    - NOT: Security, O&M
Overview

- **Requirements**
  - Only CONUS Work
    - Alaska, Hawaii, District of Columbia
  - Vertical Ramp up of resources
  - Cost Reimbursable

- **Background**
  - RDI is Successor to SDIC, RR
    - Managed and administered in similar ways
    - Award: program dollars against a concept
Overview

- Background
  - Managed and administered in similar ways to SDIC
  - Cost Reimbursable
    - Uncertainty and flexibility
    - Government & Contractor Role
    - Near real-time decision making:
      - PDT/Command Post
Overview

- Background
  - Managed and administered in similar ways to SDIC
  - Change management
    - In scope changes
    - Task order = 1 WAD/WOE
    - War game plans
    - Contractor submittals
    - Government approvals
Overview

- Background
  - Managed and administered in similar ways to SDIC
  - Contract Administration and Management
    - Daily work orders
    - Daily cost tracking and forecasting
    - QCR/QAR
    - Safety
    - Invoicing
Overview

- **Scope of Work**
  - Vary in size, complexity, location
    - Flood Recovery
      - Levee Rehabilitation to flooding under PL84-99
    - Infrastructure Recovery
      - Potable water supply, WWTP, Roads, Fuel Systems, HVAC, etc.
Overview

- **Scope of Work**
  - Vary in size, complexity, location
    - Disaster Response
      - Unwatering Mission
    - Disaster Recovery
      - Debris
      - Temporary Housing
    - other
RDI Project Examples

- Joplin Debris Recovery
- Levee Rehabilitation
Debris Removal Team
Joplin, MO Tornado 22 May 2011

- EF-5 Multiple-Vortex Tornado
- 1-Mile Wide, 7 Miles Total Track Length
- 158 Reported Deaths
- 990 Reported Injuries
- Estimated 7000 Properties Destroyed
- Estimated 1.87 Million Cubic Yards of Debris
Pre-Deployment History

- The existing Presidential Declaration 1980DR for the State of Missouri was amended to include Jasper & Newton Counties
- USACE Request for SDIC Services: 23 - 25 May 2011
- FEMA Verbal Mission Tasking: 25 May 2011
- Request For Proposal: 26 May 2011
- Award: 30 May 2011
- Mobilization: 31 May 2011
Site Preparation Activities

- Site Preparation
  - ADMS\STORM Set up
    - 99 STORM Data Entry Units
    - 10 Landfill Ticket Units
    - 116 Local ADMS Operator Interview & 98 Hired
  - Truck & Equipment Certification
    - 1,163 Haul Units Certified: 2 June 2011 - 15 July 2011
    - 463 Debris Handling Equipment
  - Landfill Site Preparation
    - 8 Temporary Towers: 2 June 2011 - 17 July 2011
    - 7 Permanent Towers: 6 June 2011
  - Weston employment hotline (1,117 calls received & responded to)
Automated Debris Management System (ADMS)

- Stakeholder Access
- Real Time Operations Management Allows for Trend Analysis and Real Time Operational Adjustments
- Real Time Data Management
- Financial tracking to Applicant Pick-Up Locations
- Defensible and Auditable Records
- Billing/Invoice Processing
- Measurement and Payment Validation
- Real Time Validation by USACE QA
- Photographic Records of Tree and Stump Sizes

Automated Debris Management System (ADMS)
Curb Side Mission Execution

- Curb Side Debris Removal
  - Debris Streams
    - Construction & Demolition (C&D)
    - Vegetative
    - Asbestos Containing Materials
    - HHW, White Goods, E-Goods, & Small Motorized Equipment moved to the curb

[Diagram showing dates and milestones of debris collection and processing]
Debris Removal Operations
PPDR Mission Execution

- Private Property Debris Removal
  - C&D
  - Vegetative
  - Asbestos Containing Materials
  - HHW, White Goods, E-Goods, & Small Motorized Equipment
    • USACE Segregated, EPA Collected
  - Title Property

Before

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<th>Event</th>
<th>Date</th>
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<td>FEMA issues PPDR Mission Tasking</td>
<td>6/2/2011</td>
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<tr>
<td>Right of Entry Public Meeting</td>
<td>6/8</td>
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<tr>
<td>Begin PPDR Category 1</td>
<td>6/15</td>
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<tr>
<td>Change in ROE Release process</td>
<td>6/22</td>
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<td>74 PPDRs Substantially Complete, peak</td>
<td>7/5</td>
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<tr>
<td>Begin PPDR Category 3</td>
<td>7/11</td>
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<tr>
<td>7/16/2011</td>
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6/2/2011
- USACE PPDR Media Event
- 2 ROEs released for inspection
- EDR Modification award

6/17
- Begin PPDR Pre-removal Inspections
- 188 ROEs Released for Inspection
- 6/17
- 6/18
- 6/26
- 6/29
- 7/6
- 7/13
- 7/16/2011
Hazardous Tree Removal

- Arborist Coordination for Services: 6 - 23 June 2011
- Arborist Mobilization: 24 June 2011
- FEMA Hazardous Tree Removal Authorized: 27 June 2011

Trees marked with K are kept. Trees with C, S, Green OK, OK, Triangle, X, or no markings are removed.

Hazardous Tree Removal Start date: 14 July 2011

1,062 Haz trees & hangers completed
Data & Information Management

- Data Information Management provided by STORM
- GIS Interface with STORM provided graphical tracking & real time operational preparedness
- USACE Weston daily coordination & data sharing

Google Earth
### Health & Safety

#### Meeting Type

- **Health & Safety Plans**
  - Dust, Asbestos and Lead Exposure Monitoring Plans
  - ACM Debris Identification & Segregation Plans
  - Initial Site Safety Orientations Weston / Bhate / Electrical Subs
  - Initial Site Safety Orientations P&J and subcontractors

- **Training**
  - Asbestos Hazcom for USACE QA
  - Asbestos Hazcom for Weston / P&J / subcontractors
  - Asbestos Awareness for segregation crews
  - Morning Tailgate Safety Briefings for All Crews
  - Twice Daily Safety Staff Meetings
  - Asbestos Hazcom (Partnered with OSHA)
  - ACM Safety Meeting Training (USACE, OSHA, EPA, etc.)
  - OSHA Partner meetings (USACE, OSHA, Weston, P&J)
  - Heat Stress Program Continually Revised (3)
  - Initial Worker Safety Orientation & Daily Tailgate Safety Meetings
  - Traffic Management Planning – Haul Routes
  - Revised Truck Unloading Procedures (3)

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<td>ACM Debris Identification &amp; Segregation Plans</td>
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<td>Initial Site Safety Orientations Weston / Bhate / Electrical Subs</td>
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<td>Initial Site Safety Orientations P&amp;J and subcontractors</td>
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<td>Asbestos Awareness for segregation crews</td>
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<tr>
<td>Morning Tailgate Safety Briefings for All Crews</td>
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- **Tree Cutting Crew Orientations**
  - Weston / P&J voluntary safety stand-down (Heat Stress & Rollovers) | 2 |

Total Meetings: 522  Total Personnel Attending: 5,687
Worker Exposure Monitoring Program

- Almost 600 breathing zone and work area samples collected
  - Respirable dust monitoring: 576 MIE PDR measurements over 48 days
    - No TWA exceedances
  - Asbestos exposure monitoring: 615 samples using NIOSH 7400/7402
    - 1 Fiber detected
    - No exceedances for PEL/STEL
  - Lead (Pb) Exposure Monitoring: 28 Samples using NIOSH 7082
    - No exceedances for PEL

All 600 Below PEL/STEL
Heat Stress Procedures

- Heat Stress SOPs implemented as part of the Safety Program kickoff and briefed to all teams coming on the project: 1 June, 2011 – 17 July 2011
- Implemented evaluation process regarding employee fitness for duty in high heat conditions: 2 June 2011
- Hazards and prevention (including Heat Stress) discussed during all morning sector musters and safety meetings: 1 June, 2011
- Site specific heat stress awareness training: 2 June 2011 and Orientations
  - proper hydration and diet, heat acclimation, symptoms of overexposure
  - 1st aid procedures
  - Safety POC Cards: 6 June 2011
  - Effective PPE (clothing, sunscreen, etc.)
  - Mandatory Buddy Program: 2 June 2011
  - Roaming relief crews to give breaks & provide water: 11 June 2011
  - Distribution of cooling bandanas for head/neck: 12 June 2011
  - Distribution of Hard hat shades for hard hats: 12 June 2011
18 of 58 Personnel from State of Missouri
Phillips and Jordan, Inc. Organizational Chart (SDIC: Debris and Disposition – Joplin, MO) - 4 June 2011

USACE – Omaha District PM
Tim Gouger

SDIC Program Manager
Chris Henry, CPCM

Phillips and Jordan Project Manager
Edd Satterfield

EHS
Earl Whitehurst

Check In
Jeremy Williams

Contracts
Julie Hancock

Sector Managers
Jeff Hancock, Gary Farley, Brian Moore, Roger Waters, Bill Fuller, Cain Jordan

ADMS
Ron Thompson

CQCSM
Bucky Jackson

Debris Removal Subcontractors

Snyder Construction Co.
James Zerkel, Jr.
417-437-0018

Local Opportunities
Equipment Operators
Truck Drivers
Laborers

James Kelly Construction Co. Inc.
Billy Ulm
James Kelly
816-365-4438

Local Opportunities
Equipment Operators
Truck Drivers
Laborers

Timberline Trading Inc.
Michael Dotson
816-564-1761

Local Opportunities
Equipment Operators
Truck Drivers
Laborers

Big John’s Heavy Equipment Co.
Sid Davis
417-437-0285

Local Opportunities
Equipment Operators
Truck Drivers
Laborers

Crossland Construction Company
Ivan Crossland, Jr.
John Horne
620-674-1069

Local Opportunities
Equipment Operators
Truck Drivers
Laborers

Rocky Schell Construction
417-768-0036

Local Opportunities
Equipment Operators
Truck Drivers
Laborers
Conclusion

- Debris recovery commenced 6 days after FEMA Tasking to USACE: 1 June 2011
- Ramp up goal of 250 haul units accomplished 4 subsequent calendar days: 6 June 2011
- Peak removal 58k CY of debris 5 subsequent calendar days: 11 June 2011
- 1-Million CY of debris removed to date 25 subsequent calendar days: 6 July 2011
- Debris Removal - Total 1,177,495 CY over 48 calendar days
  - 777,463 CY - C&D
    - 142,642 tons - C&D
  - 2,414 CY - CAT3 ACM
  - 397,617 CY - Veg
  - 1,062 Haz Trees
- Local participation prioritized
  - MO Trucks Hauled 46.2% of debris (~530,000 CY out of ~1.2M CY)
  - P&J primary subcontractors considered local (5 of the 6 from MO)
  - 461 Haul units licensed in the State of MO
  - 116 Local direct hires (ADMS)
  - 302 Hired by subcontractors (flaggers, operators, truckers, etc.)
- High hazard work environment
  - 182,329 man hours,
  - OSHA recordable (1) - Lost time accidents (0)
- Maintained Expectations at all jurisdictional levels
Construction-Based, Time-Sensitive Levee Rehabilitation

Tim Gouger
Project Manager
Omaha District
May 2015
Discussion Topics

- Flood Event 2011
- Time-Sensitive Action: Exigent Conditions
- Rehabilitation Process
- Contract Acquisition
- Levee Repair Areas
- Project Status
Flood affect:

- 700 miles
- Montana to KCMO
- South of Omaha to Rock Port
- Flooding from Bluff to Bluff
- Levee degradation: 250 miles
  - Omaha to Rulo

Flood Event 2011
Flood Damages
Missouri River Flood Recovery

- 18 Eligible requests for rehabilitation under PL 84-99:
  - (17 Fed/ 1Non Fed)

- Cost estimate of $280M

- Responsible River Management Coordination/Teamwork

- 2010 Rehab work – all work completed last year held up well
Time-Sensitive Levee Rehabilitation

- Execution for Time-Sensitive Needs
  - Call to Action
  - Real-Time Decision Making
    - Systems Restoration Team
    - Dedicated Project Delivery Teams
    - Cost Reimbursable MATOC Task Orders
  - Maintain Criteria
Time-Sensitive Action

- Call to Action
  - PL-8499
  - FCCE
- Systems Rehabilitation Team
  - Planning
  - Contracting
  - Real-Time Decision Making
  - Daily Meetings
  - All Jurisdictional Coordination
- Be Done When Done
- Fast: Defensible
Contract Acquisition

- Insufficient Time and execution needs
  - Cost Reimbursable Task Orders
    - Construction-Based Contracts with Incidental Engineering
    - Flexibility
    - Exposure and accountability on all aspects of work
    - Pay for costs
    - Partnership
Contract Acquisition

- Firm Fixed Contracts
  - Transition when Technically Feasible and Practicable
  - MRRP MATOC
  - Fort Crook MATOC
  - SATOC
  - Purchase Orders
  - IFB
Design-Build

- Award Cost Plus
  - Story line scope
  - Basic Technical Requirements
  - Template drawings and details

- Submittals
  - Design Memorandums
  - RFI
  - Traditional Submittals
  - Real Time Coordination - Approvals
Levee Rehabilitation Projects

- 18 Project Sites, multiple phases for each
  - Setbacks
  - Piggybacks
  - Scour hole restoration
  - Erosion Control
  - Levee Surfacing
Time-Sensitive Levee Rehabilitation

- Middle L575 Metrics
  - PIR Approved: 9/18/12
  - Funding Received: 9/29/12
  - Contract Awarded: 10/25/12
  - Real Estate: 12/6/12
  - Cooperative Agreement: 12/6/12
  - Substantially Complete: 2/1/12
Time-Sensitive Levee Rehabilitation

- Upper - Middle L575Metrics
  - 56 construction days
  - 3,166 CY of topsoil
  - 178,637 CY of cohesive (clay face)
  - 313,505 CY of random fill (seepage berms and levee embankment)
  - 170,287 CY of underwater fill
  - 665,595 CY TOTAL
Time-Sensitive Levee Rehabilitation

- Borrow Site Testing
  - Visual Soil Classification  ASTM D2487
  - Atterberg Limits  ASTM D4318
  - Grain-size Distribution  ASTM D422
  - Moisture Content  ASTM D2216
  - Standard Proctor Moisture-Density  ASTM 698
Time-Sensitive Levee Rehabilitation

- Compaction
  - In-situ Moisture and Density by Nuclear Gauge ASTM D6938
  - Sand Cone Density ASTM D1556
  - Test pad construction
  - Fly ash bench testing
  - Rip rap testing
Time-Sensitive Levee Rehabilitation

- Various Testing
  - Test pad construction
  - Fly ash bench testing
  - Rip rap testing
  - Geotextile
Time-Sensitive Levee Rehabilitation

- Conclusions
  - 5 critical breach repairs
  - 86 calendar days for completion
  - 163 pieces of equipment
  - 220 contractor personnel
  - ~ 31,000 CY placed per day
  - 2.7M CY placed