2016 Fall Conference

End-User Perspective Panel Session: Water & Wastewater - Operational Challenges

Jason R. Kerns, PE, CDT, Associate Vice President, HDR
John R. Monzon, P.E., Director, SE Louisiana Flood Protection Authority – West
Mike Pittman, Owner, M.R. Pittman Group
Water/Wastewater

- ASCE - $113B Shortfall
- EPA Needs Survey
  - Water - $384B
  - Waste Water - $271B
- AWWA - $1T in 25 years to stay at current level of service
- Bluefield - W/WW CAPEX to increase 28% over next 10 years
- Residential Construction Up
- National Security Threat
- Public Support

2016 HI-VMA Market Outlook Workshop presentation
Tom Decker, VP Brown & Caldwell
http://www.infrastructurereportcard.org/
$271 Billion in infrastructure investment needed in publically owned treatment works

38% plant work
62% “system” work

https://www.epa.gov/cwns
2016 HI-VMA Market Outlook Workshop presentation
Today’s Panelists

• John R. Monzon, P.E., Director, SE Louisiana Flood Protection Authority – West
• Jason R. Kerns, PE, CDT, Associate Vice President, HDR
• Mike Pittman, Owner, M.R. Pittman Group
Water/Wastewater Operational Challenges: Perspectives from End-Users

Hydraulic Institute 2016 Fall Conference
Hotel Monteleone, New Orleans
October 26, 2016
SLFPA–West

- Southeast Louisiana Flood Protection Authority - West (SLFPA–W) was created by the Louisiana legislature in 2006 after the devastation of Hurricanes Katrina and Rita.
- It manages two levee districts; West Jefferson and Algiers.
- The Authority is made up of seven commissioners appointed by the Governor.
- Funding for the Levee districts comes from ad-valorem taxes collected on the properties and businesses in their respective jurisdictions.
SLFPA–W Jurisdictional Map

SLFPA–W RESPONSIBILITIES
80 Miles Levees & Floodwalls
33 Miles River Levees
47 Miles Hurricane Levees
67 floodgates & 35 valves
3 pump stations
3 Sector gates

Key
-WCC
Bayou Segnette
Harvey Complex
Harvey Canal Complex at Lapalco

Harvey Canal Complex
Exercised by USACE (2015)
- $47M
- 1 Sector Gate
- Electric Driven Submersible Pumps
Bayou Segnette Complex

Bayou Segnette
Exercised 2x per month
• $110M
• Floodgate
• Axial Flow Vertical Pumps

Bayou Segnette
75’ Sector gate closes storm surge from Bayou Segnette

Bayou Segnette
400 CFS pump station pumps rain water out the Company Canal basin
West Closure Complex

Exercised 1 to 2x per month
- $1.1 Billion
- 19,140 CFS Pump Station (11- Axial Flow Vertical Lift Pumps)
- 225’ Sector gate
- 5 sluice gates
- T -walls and Levees
- Control structure

West Closure Complex Protects:
- All of Algiers
- All of Belle Chase
- The most populated areas of West Jeff to Westwego
Future Challenges

- Operation and Maintenance costs
- Funding for dewatering cycles including Repair, Replacement and Rehabilitation
HDR’s Approach

Education  Adherence  Approval  Acceptance
A Few Suggestions

Manufacturer Vs. HI Standard

Vibration & Resonance

Constructability Tolerances
Water/Water Panel Discussion Slides

Presented by:
Michael Pittman, PE
President
Michael Pittman
MR Pittman Group, LLC General Contractors - President

• B.S. Civil Engineering – Louisiana State University
• MS Civil Engineering, Attended – University of New Orleans
• MBA, Finance Option – University of New Orleans
• 33 years General Contracting Experience
• Directly Managed 800M in Drainage/Water/Sewer Project in South Louisiana
• Registered Civil/Environmental Engineering - State of Louisiana
The MR Pittman Difference

- **Safety** is MR Pittman’s top priority. No excuses. No shortcuts.
- **Quality** work is delivered right the first time; we stake our reputation on it.
- **Our People** are our No. 1 Asset
- **The Environment** is everyone’s responsibility. At MR Pittman, we are committed to being the best possible stewards of the environment.

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<thead>
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<th>Category</th>
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<tr>
<td>Drainage</td>
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<td>Flood Control</td>
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<td>Water/Sewer</td>
<td>22%</td>
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<tr>
<td>Building</td>
<td>8%</td>
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<tr>
<td>Other</td>
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About MR Pittman

- More than 30 years of construction excellence
- Operations Louisiana Based
- Average Annual Revenue $100M
- 3rd Generation - Dates back to the 1920’s
PCCP Project – Typical Cross Section

- 17th 1:100 yr Wave EL. + 13.80’
- Orleans 1:100 yr Wave EL. + 11.90’
- London 1:100 yr Wave EL. + 11.20’
- Mean Lake EL. + 0.40’

Generator Building

Vacuum Breaker Assembly

Siphon Discharge

Pump Station Control Room

50 Ton Bridge Crane

1800 CFS Pump
Vertical Gear Motor

Vehicle Access Over Screening Platform with Access to Gate Structure

Climber Screen

Overhead Door

Spare Parts Storage Area

Built to Future Design Depth

Sheep Pile Cut-Off Wall

Floodwall El. + 18.0’

Rip Rap

Canal Side

Lake Side
Orleans Avenue Site Sept 2016
GIWW Complex – Pump Station

Diesel engine

Gate

Grate

Propeller
West Closure Complex – Typical Cross Section
West Closure Pump Systems
Contractors Perspective – Public Works Market – Design Build vs Bid-Build Contract Delivery Models

• Design Build Contract Model
  • Early Involvement in Overall Design & Installation Procedures Provides a Complete Solution in Terms of Performance, Coordination, Quality & Schedule
  • Ability to identify risks early and develop solutions as a team

• Bid-Build Contract Model
  • Contractor is Proposing on Documents Generated by Consulting Engineers/Owners and has really no knowledge or input on product selection, installation procedures, etc.
Contractors Perspective –
Public Works Market – Bid-Build Contract Issues

Accuracy of Contract Documents

• Specifications are Generic and Not Customized to the Specific Project

• Design is Centered Around Specific Equipment Dimensionally but Specifications include other Approved Equipment Vendors

• Quality Control requirements are vague or missing from the scope of the work

• System Responsibilities are not well defined or are incorrect
Contractors Perspective –
Public Works Market – Bid-Build Contract Issues

Installation Issues

• Specified Alignment Tolerances are Not Well Defined

• Equipment Manufacturing Tolerance do not afford installation to be performed per the contract tolerances

• Constructability has not been considered in the development of the contract documents

• Design is Centered Around Specific Equipment Dimensionally but Specifications include other Approved Equipment Vendors

• Quality Control requirements are vague or missing from the scope of the work

• System Responsibilities are not well defined or are incorrect
Contractors Perspective –
Public Works Market – Bid-Build Contract Issues

Field Start Up Issues

• Vibration
• Torsional Failures
• Pump Bearing Issues
• Driver Failure Issues
• VFD, Soft Start, Power/Generator Issues
• Control Issues
Perspective to Mitigate Construction Issues

• Early & Thorough Analysis at Initial Execution Stage
• Development of Detailed Installation Plans
• Development of a Detailed Startup Plan at the Onset of the Project
• Quality Control/Quality Assurance Program both Contractor and Vendor
• Team with Vendors with Experience
Q&A