Paul Fossier, P.E.
Assistant State Bridge Administrator
LA DOTD

Chuck Duggar, P.E.
Project Manager
Louisiana TIMED Managers
Agenda

• Project Background
• Project Description and Preliminary Information
• Current Design-Build Status
  • Design
  • Construction
• Additional Information
John James Audubon Bridge
Project Background

- The idea of a bridge near this location dates back decades
- Project included in the TIMED Program in 1989
- LA legislature officially named the John James Audubon Bridge in 1993
- Selected to be LA’s 1st Design-Build Project, Fall 2004
Preliminary Design

- Final EA, FONSI and Permits (Alignment F)
- ROW Maps (Acquisition process complete before D-B RFP)
- Utility relocation (all URA’s in place before D-B RFP)
- Geotechnical
  - 97 Borings – Pointe Coupee
  - 78 Borings – West Feliciana
  - 10 Borings – Mississippi River
Preliminary Design

- Partial Preliminary Plans
  - Plan – Profile Sheets
  - Vertical-Horizontal Geometry (clearance envelopes for river and railroad)
- Bridge Location Stations
- ROW Limits
- Bridge Hydraulics for Approach Bridges
Project Description

• 12 miles of mainline roadway and bridge
  • Four-lane bridge over the Mississippi River
    12,150 LF
      • 3,186 LF cable-stayed main span unit (160-641.5-1583-641.5-160)
  • Two-lane main span approach structures of
    7,566 LF
      • 4,051 LF Railroad Overpass (Pointe Coupee)
      • 140 LF Bridge over Portage Canal
      • 671 LF & 1075 LF over Grants Bayou (West Feliciana)
      • 629 LF, 415 LF & 585 LF over E. Fork Grants Bayou (West Feliciana)
Project Description

• 12 miles of mainline roadway and bridge
  • 1.9 miles of two-lane approach roadway (West Feliciana; connection to US-61)
  • 6.15 miles of two-lane approach roadway (Pointe Coupee; connection to LA 1/LA 10)
John James Audubon Bridge
John James Audubon Bridge

Design-Build Project Update
John James Audubon Bridge

- Total Cost  $406 Million
- Project Length  14.6 miles
- Bridge Length  4.0 miles
- First Design-build Procurement
- Successful Letting March 2, 2006
- Completion Date: Summer 2010

<table>
<thead>
<tr>
<th>Project Schedule</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<td>Team Selection Process</td>
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◆ D-B Begins  ★ Complete
John James Audubon Bridge
John James Audubon Bridge

- 1583’ Cable-stayed main-span
- Twin planes of cable-stays (galvanized strand)
- H-shaped pylon with double strut above deck (515’ above low-water elevation)
- Drilled shaft foundations (post grouted)
- Main pier footings at low-water level
- Substantial amount of construction to be land-based from trestles
- Will be the longest cable-stayed span in North and South America
- Total lump sum price: $347,856,245
John James Audubon Bridge

- **Design-Builder:**
  Audubon Bridge Constructors, a joint venture

  - Flatiron Construction
  - Granite Construction
  - Parsons Transportation Group
John James Audubon Bridge

• Team Members:
  • Hill Bros. Construction
  • Boh Bros. Construction
  • Buckland & Taylor, LTD
  • Evans Graves
  • Burk Kleinpeter
  • PSI
  • Dan Brown & Associates
  • RWDI
  • OEA, Inc
John James Audubon Bridge

- Design-Build Procurement – Price Proposals & Adjusted Scores

<table>
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<tr>
<th>Engineer’s Estimate*</th>
<th>Base Proposal</th>
<th>Base Proposal Plus Option 1</th>
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Adjusted Score Calculation

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<th>Base Proposal</th>
<th>Base Proposal Plus Option 1</th>
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<td>Total Lump Sum Price</td>
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<td>MRB Constructors</td>
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</table>
John James Audubon Bridge

Performance Specifications

- Cable-Stayed Bridge
- Structures
- Geotechnical & Foundations
- Roadway Geometrics
- Pavements
- Traffic Signals & Signing
- Maintenance
- Lighting

- Maintenance of Traffic
- Utilities
- Public Outreach & Community Relations
- Drainage
- Landscape & Aesthetics
- Environmental Mitigation & Compliance
- Erosion Control
John James Audubon Bridge

Legend:
1. 8" SUPERPAVE ASPHALTIC CONCRETE (LEVEL 2)
   (2"
   Wearing Course)
   (3"
   Binder Course)
   (5"
   Base Course)
2. 6" SUPERPAVE ASPHALTIC CONCRETE (LEVEL A)
   (2"
   Wearing Course)
   (2"
   Binder Course)
3. CLASS II BASE COURSE (4"
   THICK) (STONE OR RECYCLED PCC)
4. CLASS II BASE COURSE (3"
   THICK) (STONE OR RECYCLED PCC)
5. 8" THICK NON-PLASTIC EMBANKMENT (STONE OR RECYCLED PCC)
6. 4" THICK NON-PLASTIC EMBANKMENT (STONE OR RECYCLED PCC) (ENCAPSULATE WITH CLAY OR GEOTEXTILE FABRIC WITH THE EXCEPTION OF THE OUTSIDE EDGE)
7. 8" CLASS II BASE COURSE (SOIL CEMENT)
8. GEOTEXTILE FABRIC

Subcut Note:
Two options are available to provide required embankment.

Option 1 - Subcut to a depth of five feet below the top of finished subgrade and replace with material meeting requirements for embankment.

Option 2 - Line treatment (estimated to be 12k by volume) of the existing material sufficient to achieve 95% compaction of upper 12 inches.

Typical Grading Section

Typical Pavement Section

Final Condition Typical Section

SHOWING REVISED LANE CONFIGURATION

Scale: 1"=20'

6' Median (Future)
John James Audubon Bridge
John James Audubon Bridge
John James Audubon Bridge
Wind Tunnel Testing

- RWDI – Ontario, Canada
- Wind Climate Analysis
- Section Model Test
- Buffeting Analysis
- Aeroelastic Model Study
  - Complete Bridge
  - 2 Construction Stages
  - Free Standing Tower
- Cable Vibration Assessment
Section Model
Aeroelastic Model
Main Pier Foundations

- 8’ φ shafts (20 Shafts – 7x3 Group)
- Scour: 37.7’ (500 year)  
  35.7’ (100 year)
- Vessel Collision load
  - 10,695 kips transverse
  - 5,348 kips longitudinal
- Horizontal Clearance: 1463’
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http://www.timedla.com

The John James Audubon Bridge project is a new Mississippi River crossing between Pointe Coupee and West Feliciana parishes in south central Louisiana.

The bridge—proposed to be the longest cable-stayed bridge in North America—will replace an existing ferry between the communities of New Roads and St. Francisville.

The bridge will also serve as the only bridge structure on the Mississippi River between Natchez, Mississippi, and Baton Rouge, Louisiana (approximately 90 river miles).

The Audubon Bridge project will include:

- A 2.14 mile four-lane elevated bridge structure with two 11-foot travel lanes in each direction with 8-foot outside shoulders and 2-foot inside shoulders
- Approximately 12 miles of two-lane roadway connecting LA 1 east of Hospital Road at New Roads to US 61 south of LA 965 and St. Francisville
- Four new intersections at existing LA 1, LA 18, LA 921 (River Road) and US 61 for entry to and exit from the new roadway and bridge

The project is being constructed by Audubon Bridge Constructors, a joint venture of Flatiron Constructors, Granite Construction and Parsons Transportation Group.

The John James Audubon Bridge project is expected to be completed by summer 2018.
John James Audubon Bridge

http://flatironcorp.oxblue.com/jjab
John James Audubon Bridge

Questions