Corpus Christi Harbor Bridge Rehabilitation

Leon Flournoy, P.E.
Construction Maintenance Branch
Bridge Division
Presentation Outline

• Overview
• Project Description
• New Findings
• Follow-Up Inspection
• Supplemental Repairs
• Construction/Status
Bridge Location

Nueces Bay

Corpus Christi, TX

Harbor Bridge
Bridge Description

Overall Bridge Length
5818.5’
Overall Truss 1787.5’

Through Truss 1243.5’

3 Span Continuous Unit

Simple Span Unit

Simple Span Unit
• HDR Inspection & Design Consultant
• Original Contract:
• ~$18.3 Million – Paint Sub-Contractor (Intech Inc.)
• ~$4 Million – Structural Repair Prime Contractor (SCR)
• Work began March 2010
• Contract Duration – 2.5 years
Paint first, Repair later

- The Paint Sub-Contractor proposed to paint first, Prime Contractor agreed.

- With the debris, peeling paint, and pack rust we suspected worse deterioration than initially documented.
Need for Additional Repairs

• Blast cleaning requirement: specifies removal of rust, paint, and other contamination
• The need arose for a post-paint inspection when excess deterioration was visible after abrasive-blasting
Follow-up Inspection

- Post-Paint Inspection began Nov 16, 2010
- It took approximately 300 hrs of inspection over the next 5 Months
- Access was difficult
• Man-lift access had to be coordinated with our Structural Steel Inspector’s Schedule
• Coordinate with Contractor for equipment
Follow-up Inspection

- We had to coordinate with our Fracture Critical Inspectors to not interfere with their schedule.
- We also had to work with Contractor for Traffic Control
Follow-up Inspection

- Walking was the easiest method of inspection
- Timing (Not to interfere with Paint Containment System)
Follow-up Inspection

- Utilize decking after painting
- Take advantage of Fencing prior to decking and after.

Nylon Rope!
Additional Repair Selection

- Additional section-loss was noted during the follow-up inspection

Knife edge and Perforation

Rust re-developing
Inspection Findings

• Three main types of Repairs
  – Add to existing
  – Modify existing
  – New Repair
Location Description

Bottom Lateral Brace
Existing Repair

- Increase in existing quantities
- Location is difficult to access
Location Description

Sway Frame Gusset
Existing Repair

- Sway Frame Gusset After Abrasive Blasting
Location Description

Sway Frame Gusset
Modifications to Existing Repair

- G 24, 25, 26
Location Description

Top Lateral Center Gusset
New Repair

- Most new repairs were Secondary Members
- Lateral Gusset Plates, etc.
New Repair

- Again excess deterioration after abrasive blasting
New Repair

Bottom Lateral Gusset
New Repair

- Severe deterioration inside the Bottom Chord
Location Description

Bottom Lateral Gusset
New Repair

- New Repair
- Severely deteriorated gusset
New Repair
New Repair

• New Cover Plate
Status of Contract Repairs

- 3 year Contract (66% time remaining)
- Painting was completed in approx. 1 year 1 month
- Prime Contractor has approx. 31% of Structural repairs left from original Contract
Status of Post-Inspection

- Finished Mid March 2011
- Supplemental Plans Finished Mid May*
- Currently Negotiating Price for Supplemental Repairs

*More changes found daily
Project Summary

- Pro’s and Con’s of Paint first, Repair later

Allowed easier inspection, new deteriorated areas were exposed.

Damage to new paint, prolonged paint inspection
A Note of Thanks
Questions