



2012 KYTC Partnering Conference

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Milton Madison Bridge: Construction Update

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Agenda

- **Project Overview**
- **Bridge Construction Process**
- **Project Challenges**
- **Project Successes**
- **Upcoming Project Activities**

Project Overview



Study Area

One of two Ohio River bridges between Cincinnati and Louisville

I-65 Bridge - 46 miles
Markland Dam - 26 miles
I-275 Bridge - 65 miles



Project Timeline

- June 2008 – Kickoff Environmental Process
- Fall 2009 – Proposed Superstructure Replacement
- February 2010 – TIGER Grant Funding Announced
- September 2010 – Contractor Announced (Walsh)
- January 2011 – Construction Began
- April 25-29th 2012 – First Bridge Closure
- June 25-29th – First Bridge Lift
- **Sept 10th– Second Bridge Lift**
- 2013 – New bridge Open to Traffic

Project Purpose and Need

- **KYTC Structurally Deficient List**
- **Weight Restriction**

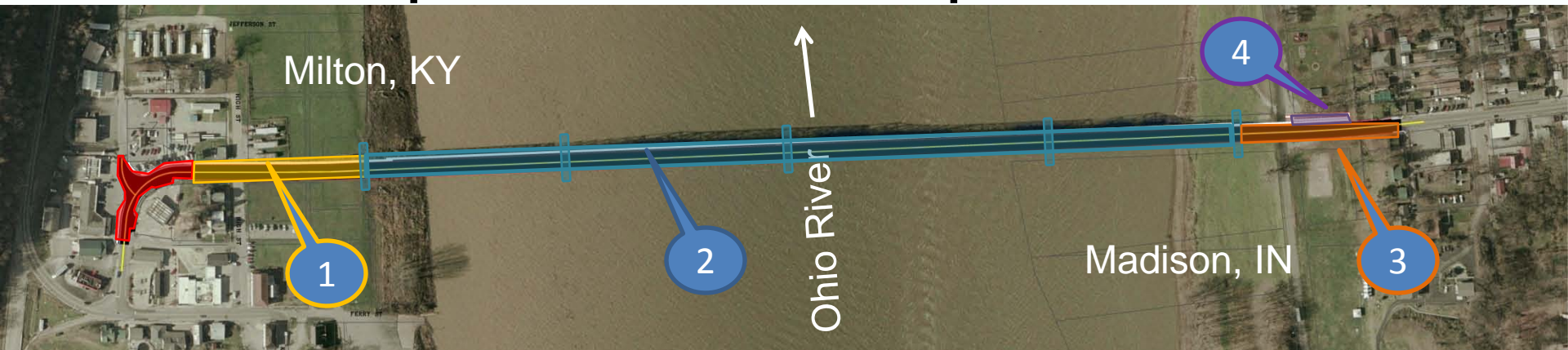
Functionally Obsolete



Structurally Deficient



Selected Alternative: Superstructure Replacement



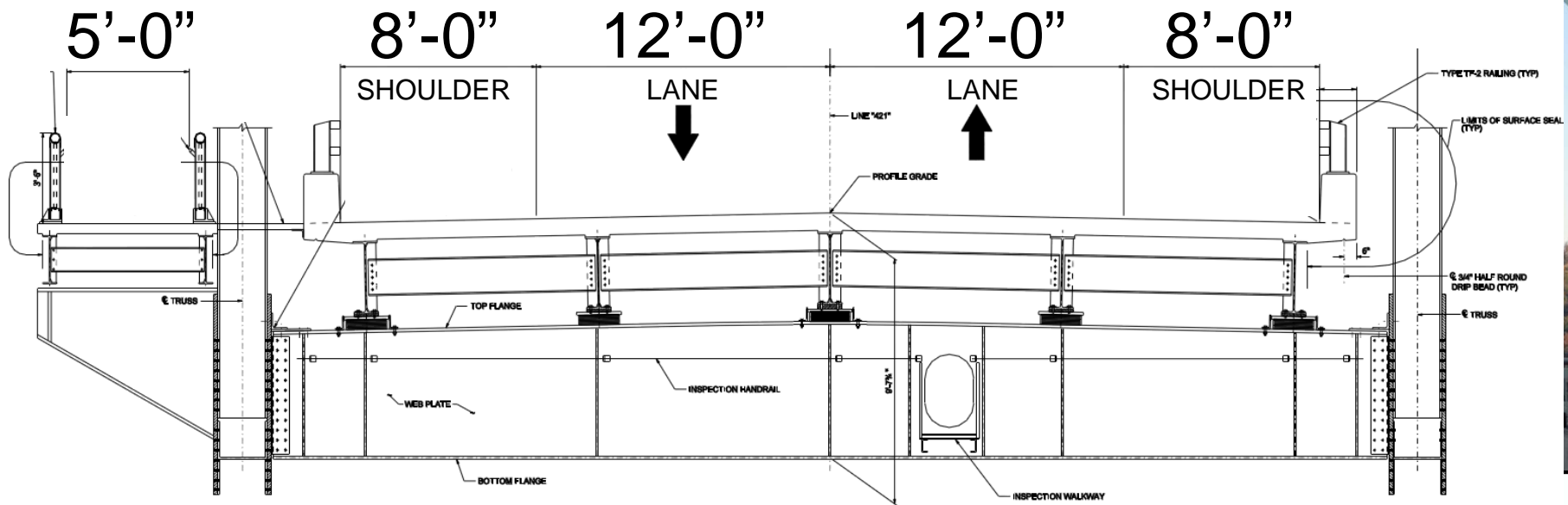
- Milton Approach re-construction
- STR 1 replace KY Approaches
- STR 2 Truss replacement
 - Pier Strengthening and Scour Mitigation
 - Superstructure Replacement
- STR 3 – Replace IN Approaches
- STR 4 – Pedestrian Access to Park

**No Right-of-Way
required**



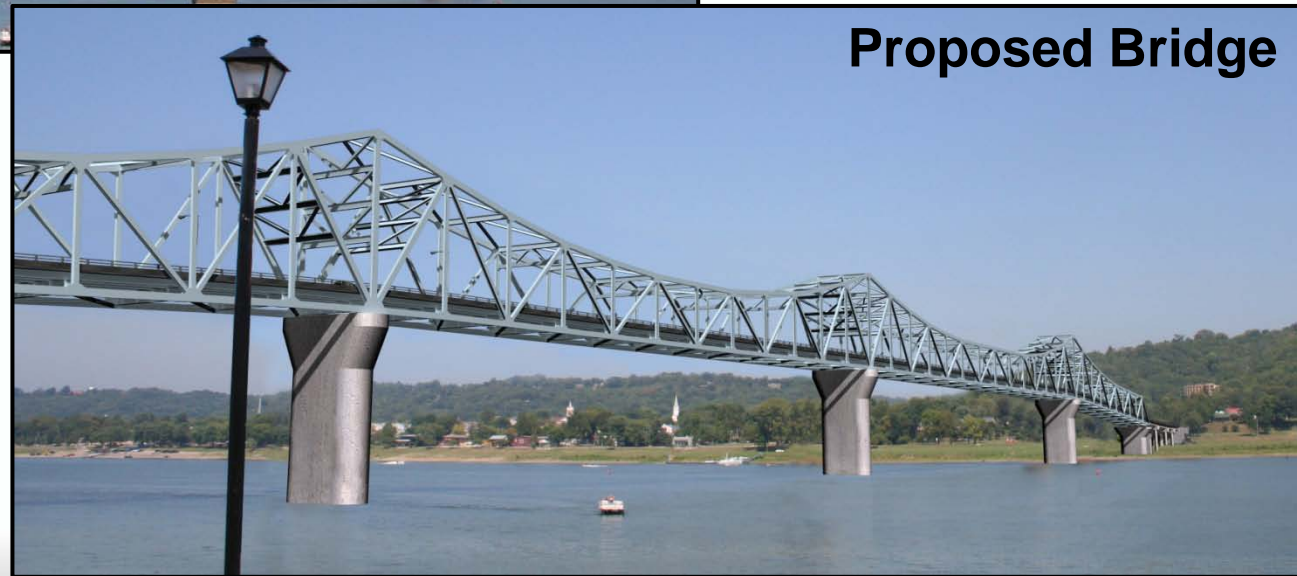
Typical Section

- Existing 20 ft curb to curb – Becomes 40 ft
- 5 ft pedestrian walkway
- 8 ft shoulders will accommodate bicyclists





Selected Alternative





Bridge Construction Process



Design – Build Letting Summary

- **September 22, 2010**
- **Five Contractors submitted bids**
- **Formula for Effective Bid Price**
 - lowest effective bid wins
- **[A + B – Adjustment]**
 - A = construction cost (*\$102-\$127 million*)
 - B = closure days x \$25,000/day. (*365 days max*)
 - Adjustment = \$3.75 million for early opening (*Sept 2012 or May 2013*)



Project Partners



Walsh Construction



BURGESS & NIPLE

Baker

CDM WilburSmith
ASSOCIATES



Construction Overview

- **Strengthen existing piers**
- **Innovative construction process:**
 - Build a new truss on downstream piers while the existing bridge remains open to traffic
 - Remove old truss and slide the new truss onto the strengthened existing piers
- **Shorten closure periods (*approx 10 days*)**

Construction Sequence

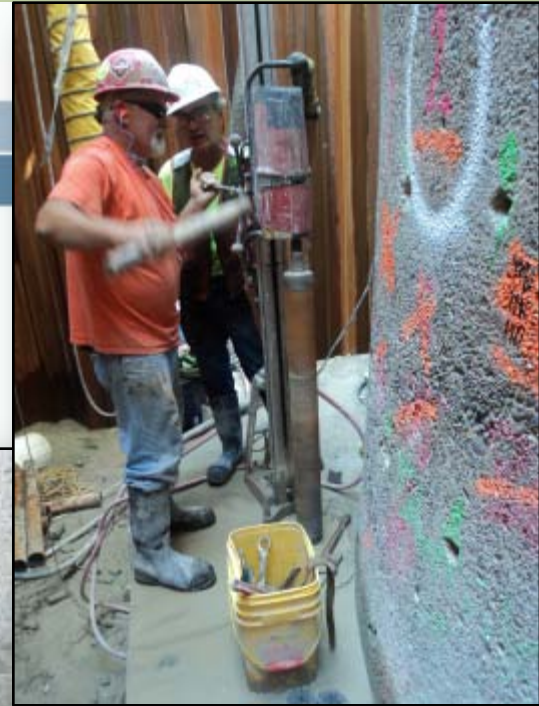
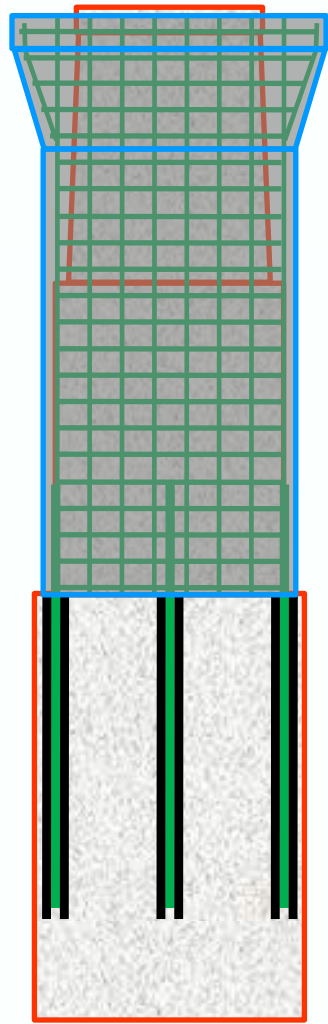
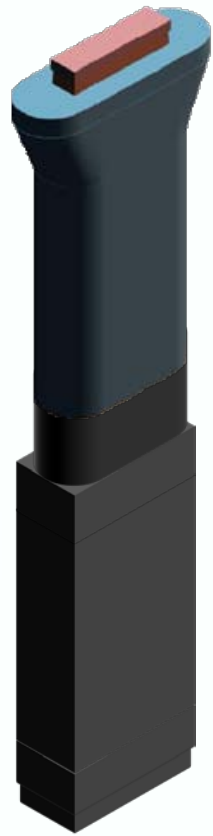


Step 1

- Pier strengthening and widening begins
- Detour approach ramps are built on Vaughn Dr and KY 36
 - Existing bridge remains open to traffic



Pier Strengthening







Madison Temporary Access Ramp





Milton Temporary Access Ramp



Construction Sequence



Step 2

- Bridge closed to traffic for 5 days
- Approach ramps are connected to existing bridge
- Existing bridge reopens to traffic using approach ramps
- Pier strengthening work continues





Closure – Started off with a bang...





Truss Erection on Barges





Truss Assembly Yard



Span 2 Nearing Completion



Construction Sequence



Step 3

-Downstream bridge piers are constructed

-Truss Erected on Downstream Piers





Temporary Towers - P3 & P4





Sliding Girders





Construction Sequence



Step 3

- Downstream bridge piers are constructed
- Truss Erected on Downstream Piers**

M

Span 2 Truss Float Out



Span 2 Lift (*Animation*)



MILTON-MADISON
BRIDGE PROJECT



M

Span 2









Span 3 Lift – 9/10/12



M Jacking Platform





Sidewalk Superintendents



Span 3 Float (Animation)



Span 3 Lift (*Animation*)







Construction Sequence



Step 4

- Downstream bridge is connected to US 421
- Traffic is rerouted onto downstream bridge

Construction Sequence



Step 5

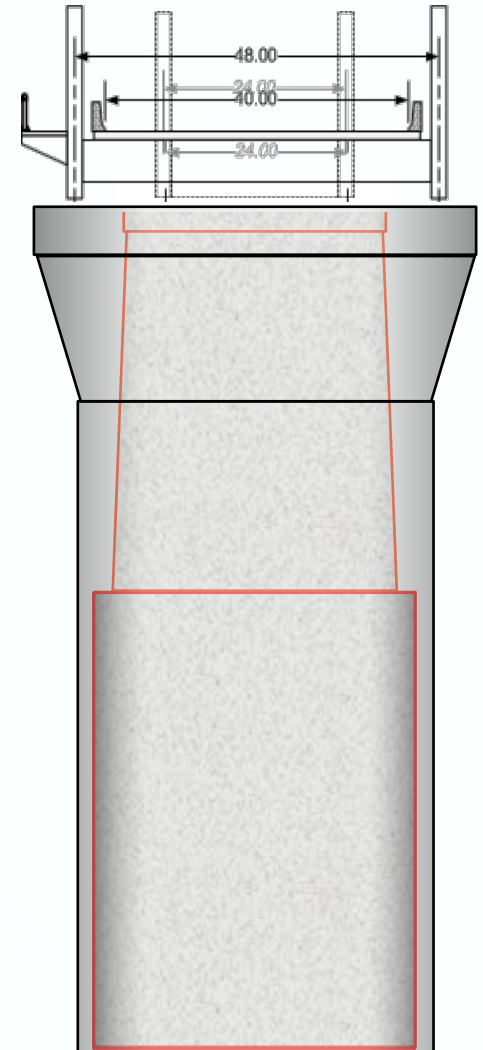
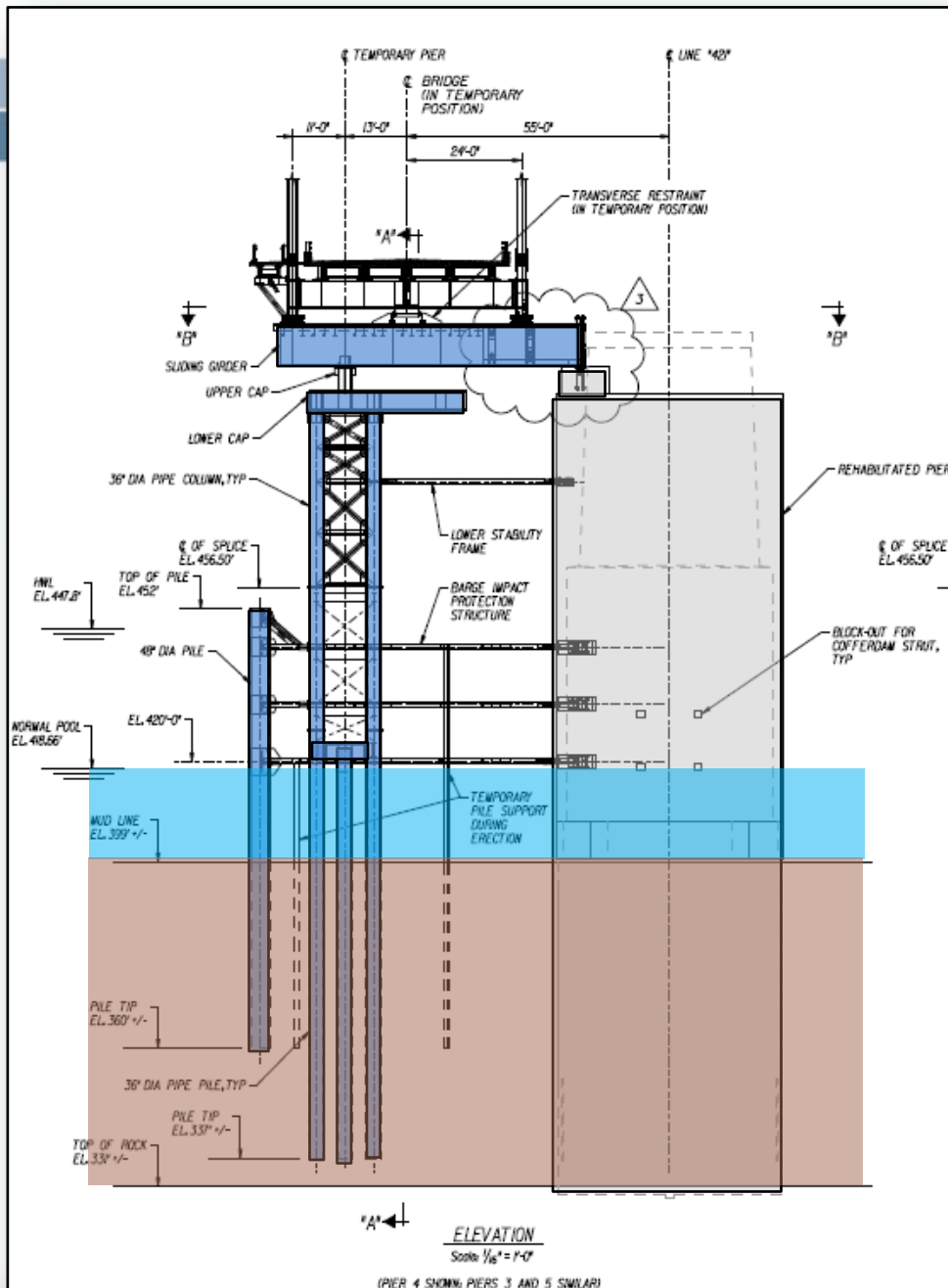
Existing bridge is demolished

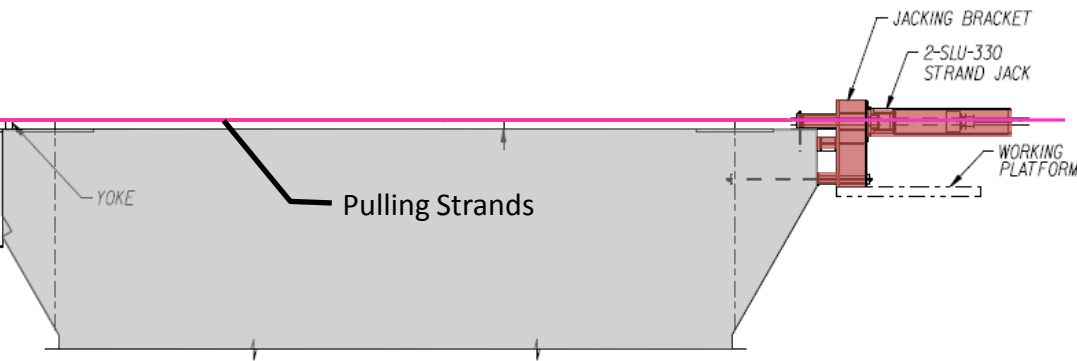
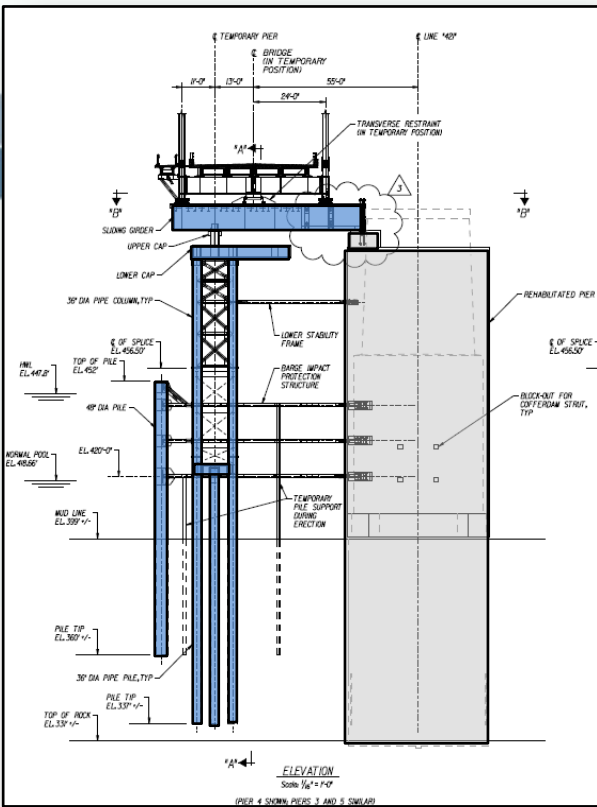
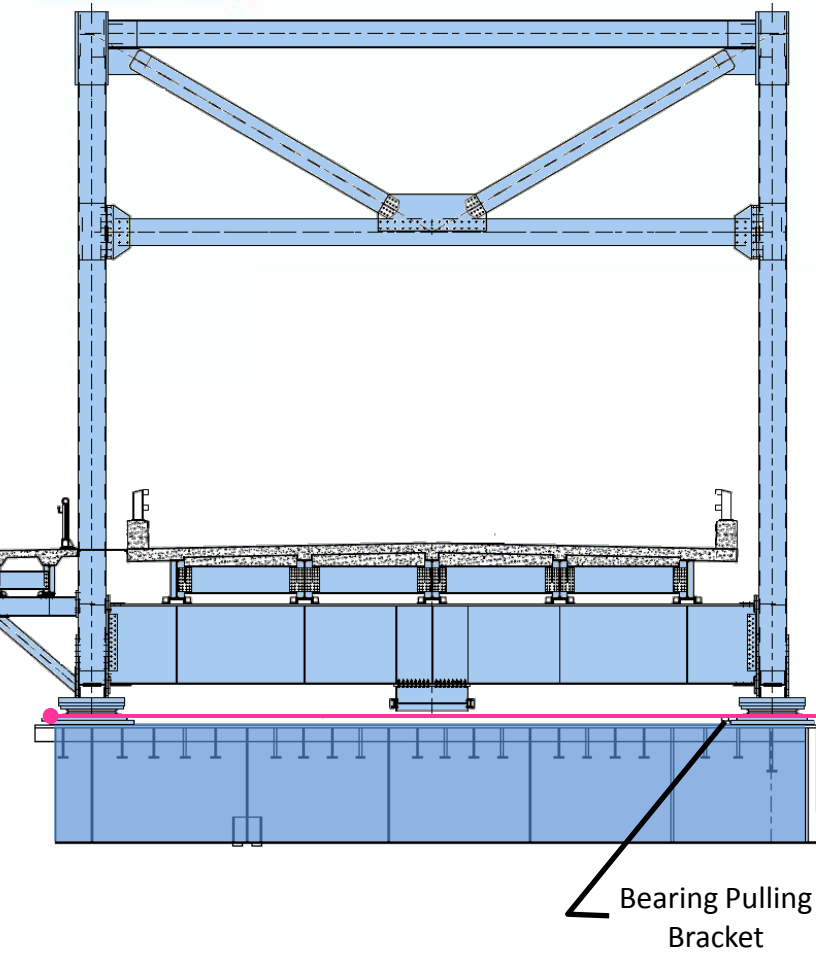
- Detour approach ramps are removed
- Pier strengthening and widening is completed

Construction Sequence Bridge Slide



- Step 6**
- bridge closed for 5 days
 - new truss superstructure is moved from downstream piers to its permanent place
 - **New Milton-Madison Bridge opens to traffic**
 - Downstream piers are removed







Project Challenges



Record
Rainfall

8 flood events
131 Flood Days
20 days/yr allowed for in contract

Spring 2011 Flooding





Project Successes



Temporary Ramps Completed



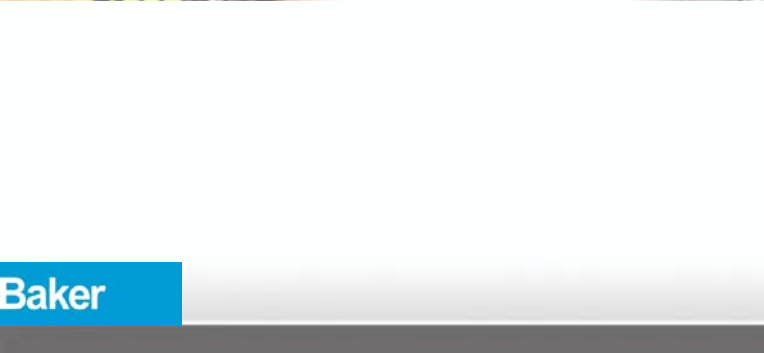


MILTON-MADISON
BRIDGE PROJECT

Lifts of Span 2 and Span 3



Peregrine Falcons Hatched



Next Steps?

Stick Build out the end spans

Complete the Approach Spans

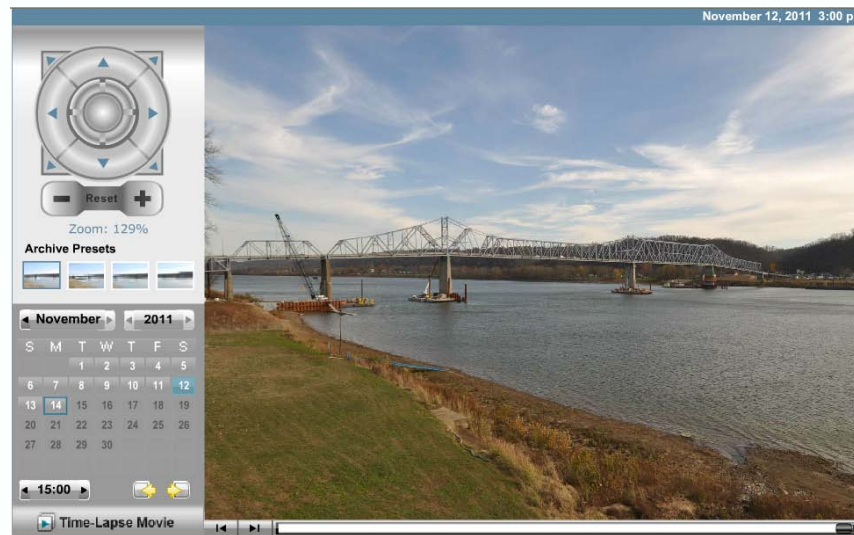
Cast the Deck

Switch Traffic to new Bridge

For More Information

Visit the project website

www.miltonmadisonbridge.com



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