The Problem

- Urban interstate built 27 yrs ago – in need of major repairs
- Downtown Indianapolis – Indiana’s capital city
- Heavy commuter and thru traffic
- 175,000 vehicles per day – originally designed for 60,000 vehicles per day
- Daily peak hour congestion
- Combined interstates – I-65 & I-70
- Narrow width for traffic maintenance

The Problem

- Deteriorated Pavement
- Joints
- Deteriorated Bridge Decks
- Deteriorated Bridge Superstructure

An Aggressive Problem-Solving Approach

- One construction season – 2003
- Alternate routes available - highways and streets
  - I-65 without lane restrictions
- Access remains available
  - Collector-distributor open
  - Most ramps open
- Type of construction
  - Pavement replacement/patching overlay
  - Bridge deck overlays
- Leadership support
  - Governor’s office
  - INDOT Commissioner Bryan Nicol
  - INDOT Chief Engineer Rick Smutzer
  - Indianapolis Mayor Bart Peterson

Closure Opportunity
The Project

- INTERSTATE PRESERVATION PROJECT
- Rehabilitate 33 bridge decks
- Repair and replace 35 lane miles of pavement
- Two added travel lanes to improve capacity
- Upgrade traffic control and roadside safety devices
- Context sensitive solutions – bridge painting, masonry coating, and bicycle and pedestrian trail retaining wall
The Project

- A+B bidding contract – pay for speed
- Walsh Construction of Illinois
- $34 million with 85-day closure
- 3 phases – pre-closure, full closure, and post-closure
- Incentive/disincentive
- 10.11% DBE participation

Design Timeline

- July 28, 2000 - American Consulting selected by INDOT to work on Hyperfix
- May 16, 2001 - Notice to proceed with project
- July 31, 2002 - Tracings turned in to INDOT (largest set of bridge rehab plans done in INDOT history)
- September 2002 - Henrick, INDOT, and ACE formulate PR effort
- October 2002 - New scope of work for the pavement based on new pavement cores taken by M&T
- November 2002 - At the ongoing weekly meetings with City of Indianapolis, a request was made to modify the slopewall on 10th Street for the future Monon Trail expansion
National Interest
- AASHTO Showcase Project of the Year
- Midwest Construction Magazine Best of 2003
- ACEC Grand Project Award for Indiana and finalist for the national award
- FHWA “Strive for excellence Award”
- ENR ran two articles about Hyperfix
- Presentations across the nation from Kentucky to Minnesota to Boston to Chicago to Washington, D.C., and, of course, Road School at Purdue University

Why a huge success?
- Preparation – 1 year out
- Communication – Brand name
- Coordination
- Incentive – 30-day early finish
- Park and Ride
- Quality and safety

INDOT Response
Full-Closure Plan
- Traditional construction – 180 days – orange barrels and traffic congestion
- Full closure – 85-day schedule w/ 30-day incentive = 55 days without orange barrels and traffic
- Reduces construction time by more than 50% as compared to traditional construction
- Minimizes road user costs > estimated $1 million/day
- Provided highest level of safety for workers and motorists

I-465 Beltway Detour Route
- No mainline lane restrictions for first time in more than a decade.
- Signage ten miles out on all legs of interstate system.

Traffic Mitigation Plan
- Planning - kept as many ramps open as possible
  - Public relations - Hetrick Communications
- Designated alternate route
  - I-465 designated detour route
- Local route improvements - $1.8 million investment
  - CityFix
  - City of Indianapolis, INDOT, ACE, and E&K had many meetings to come to an agreement on how and where to spend money
- Park-and-Ride pilot program
- Emergency response plan using ITS and local police and fire responders

Primary Alternate Routes
Public Relations Campaign
- Contracted local public relations firm, Hetrick Communications, under American Consulting contract with INDOT
- Hetrick developed logo and project name
- Extensive community outreach establishing the brand of “Hyperfix”
  - Meetings with public officials
  - Major employers / business groups
  - Neighborhood associations
  - Downtown organizations
  - Convention and Visitors Bureau
  - Emergency responders

Multiple media releases/events w/ media kits
- Television, radio, and newspaper
- Comprehensive project website (www.hyperfix6570.in.gov)
- 5,000 map pads (250,000 maps)
- Hotels, events, public sites
- Rest stop displays
- Trained INDOT personnel was part of Indianapolis Mayor’s Action Center during Hyperfix

RESULTS:
- 37,000 person trips
- Spiked interest in Park & Ride as transit option
- Service continues for the remainder of 2003

Media/Public Response

$1 Million CMAQ Grant
3 outlying NE Indy locations
4 downtown stops
6:00 a.m. to 7:00 p.m. continuous service

Hyperfix Park & Ride Coach

Commuters look for ways to avoid Hyperfix logo jam

Ready, willing ... not needed

Traffic troubles not so bad, so far

Day 3 of Hyperfix Doesn’t Live Up To Hype
Morning commuter traffic generally

The Indy Channel.com
Media/Public Response

**THE INDIANAPOLIS STAR**

**HYPERFIXED!**
- Work likely to wrap up 30 days early.
- Contractor will get $3.0 million bonus.

Construction Inspection
- **Inspection full-time staff (24 people)**
  - 10 project engineers/supervisors
  - 7 certified technicians
  - 5 engineering interns
  - 2 semi-permanent inspectors
- **Fill-in inspection staff (weekends) (13 people)**
  - 7 project engineers/supervisors
  - 6 certified technicians
- **Consultant inspection full-time staff (excluding weekend replacements) (5 people)**
  - FHWA engineer trainee (1 person)

Long-Distance Award

Longest drive to work on Hyperfix = 75 miles

Pavement Treatment

Patch & SMA Surface
Concrete Pavement Combination

Project Schedule/Results
- Pre-closure work started - March 28, 2003
  - Pre-closure work completed - May 3, 2003
  - 18 days early!
- Full Closure I-65/70 started - May 27, 2003
  - Full Closure I-65/70 completed - July 20, 2003
  - 30 days early!
- Post-closure work started - July 30, 2003
  - Post-closure work completed - August 29, 2003
  - 20 days early!
- Contract completion - October 11, 2003

---

**Long-Distance Award**

- Longest drive to work on Hyperfix = 75 miles

**Project Schedule/Results**

- Pre-closure work started - March 28, 2003
  - Pre-closure work completed - May 3, 2003
  - 18 days early!
- Full Closure I-65/70 started - May 27, 2003
  - Full Closure I-65/70 completed - July 20, 2003
  - 30 days early!
- Post-closure work started - July 30, 2003
  - Post-closure work completed - August 29, 2003
  - 20 days early!
- Contract completion - October 11, 2003

---

**Project Schedule/Results**

- Pre-closure work started - March 28, 2003
  - Pre-closure work completed - May 3, 2003
  - 18 days early!
- Full Closure I-65/70 started - May 27, 2003
  - Full Closure I-65/70 completed - July 20, 2003
  - 30 days early!
- Post-closure work started - July 30, 2003
  - Post-closure work completed - August 29, 2003
  - 20 days early!
- Contract completion - October 11, 2003

---

**Long-Distance Award**

- Longest drive to work on Hyperfix = 75 miles

**Project Schedule/Results**

- Pre-closure work started - March 28, 2003
  - Pre-closure work completed - May 3, 2003
  - 18 days early!
- Full Closure I-65/70 started - May 27, 2003
  - Full Closure I-65/70 completed - July 20, 2003
  - 30 days early!
- Post-closure work started - July 30, 2003
  - Post-closure work completed - August 29, 2003
  - 20 days early!
- Contract completion - October 11, 2003

---

**Long-Distance Award**

- Longest drive to work on Hyperfix = 75 miles

**Project Schedule/Results**

- Pre-closure work started - March 28, 2003
  - Pre-closure work completed - May 3, 2003
  - 18 days early!
- Full Closure I-65/70 started - May 27, 2003
  - Full Closure I-65/70 completed - July 20, 2003
  - 30 days early!
- Post-closure work started - July 30, 2003
  - Post-closure work completed - August 29, 2003
  - 20 days early!
- Contract completion - October 11, 2003

---

**Long-Distance Award**

- Longest drive to work on Hyperfix = 75 miles

**Project Schedule/Results**

- Pre-closure work started - March 28, 2003
  - Pre-closure work completed - May 3, 2003
  - 18 days early!
- Full Closure I-65/70 started - May 27, 2003
  - Full Closure I-65/70 completed - July 20, 2003
  - 30 days early!
- Post-closure work started - July 30, 2003
  - Post-closure work completed - August 29, 2003
  - 20 days early!
- Contract completion - October 11, 2003
Pay for Speed
Incentive/Disincentive

- Pre- and post-closure work - $10,000 / day – up to 40 days
  RESULT = 38 days = $380,000
- Full-closure work - $100,000 / day – maximum 30 days
  RESULT = Contractor completed full closure in 30 days = $3 million
- Contract Days - $5,000 / day – up to 40 days
  RESULT = Contract will be completed 40 days early ~ $200,000

$3.6 Million Total Incentives
Pay for Speed

Day 51 – July 16, 2003

Pay for Speed

Second day after opening – July 22, 2003

Lessons Learned

- Pre- and post-closure work – toughest part
  - orange barrels
- Murphy's Law – Drunk driver
- Communication all the time
- Local buy in – key

Lessons Learned

- Risk / reward
- Unexpected successes
- Quality still counts
- Safety

Finished Product

Opening Ceremony – July 20, 2003

Finished Product

Minutes before opening – July 20, 2003
Based in Chicago, Illinois, with offices throughout the United States

- 100-year-old, family-owned business
- One of the top 25 construction firms in the US
- Local office in LaPorte, Indiana, since 1989
- Indiana office generates $100 million in revenues per year
Construction Summary

Phases I – III
- North split reconstruction
- Allowed 50 days by contract
- Bonus potential of 20 days x $10,000/day = $200,000

Phase I
- Temporary asphalt widening of north split for maintenance of traffic
- Work completed in one weekend working around the clock, which minimized effect to traveling public

Phases II and III
- Six bridge deck reconstructions
  - Mill existing latex overlay
  - Complete partial and full-depth bridge deck patches
  - Remove and replace abutment backwalls and bridge approaches
  - Construct new latex overlay and concrete bridge approach
- Roadway Reconstruction
  - Milled and removed existing asphalt overlay
  - Completed full depth pavement patches
  - Constructed new asphalt overlay over existing concrete pavement
- All work completed behind temporary concrete barrier
- Maintained single lane traffic throughout phases

Phase IV
- Complete closure of the I-65/I-70 merge
- Allowed 85 days by contract
- Bonus potential of 30 days x $100,000/day = $3,000,000
- Included 27 bridges and 30 lane miles of concrete pavement

Phase IV – Bridges
- Two bridges with complete deck removal and replacement

Phase IV – Bridges
Phase IV – Bridges

- Two bridges widened for additional I-70 ramp lane
- Drove shell pile and built substructure for additional lane to bridge
- Remaining bridges were latex overlay removal and replacement
- Included deck end, expansion joint, and mudwall replacement
- Completed 32,000 SY of latex overlay
Phase IV – Roadwork

- 30 lane miles of 12” QA/QC concrete pavement

Phase IV – Roadwork

- Removal of existing concrete pavement
- Approximately 90,000 SY of pavement removal
- Old concrete material hauled to local recycling facility for reuse

Phase IV – Roadwork

- On-site batch plant
- Produced 35,000 CY of concrete

Phase IV – Asphalt Pavement

- Put down 25,000 tons of asphalt

Phase IV – Bridge Painting

- Repainted several existing bridges throughout project
- Existing bridges contained lead-based paint that needed to be contained

Phase IV – Bridge Painting

- Painted several existing bridges throughout project
- Existing bridges contained lead-based paint that needed to be contained
Phase IV – Intelligent Traffic Systems
- Installed new vehicle and speed detection equipment
- Installed new data collection sites

Phase IV – Guardrail
- Installed 18,000 ft of new guardrail
- Installed new overhead box trusses and signs

Phases VI and VII
- Reconstruction of south split
- Added travel lane for southbound I-65
- No bridge work
- Roadwork included:
  - 9" QA/QC pavement
  - Shoulder construction
  - Full-depth pavement patches
  - Asphalt resurfacing
- All work completed under traffic, behind barrels
- Allowed 59 days by contract
- Bonus potential of 20 days x $10,000/day = $200,000

Construction Benefits
- SAFER to both employees and traveling public
- Presented more options during construction
- More efficient working environment
- The challenge and the reward

An Aggressive Problem-Solving Approach