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

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
**Project Description**

Looking South

Looking North

**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

**Project Close-up (Roadway Closed)**

Added travel lane in north split

Before
The Project

Railroad Bridge Painting

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 - Hetrick, 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

Design Timeline

- December 6, 2002 - revised tracings turned in to INDOT to keep the job on a January Letting
- January 16, 2003 - Bryan Nicol has a press conference to announce Hyperfix to the public
- January 22, 2003 - at the INDOT letting Walsh is the lowest bidder by over $2 million
- January 2003 - PR effort kicks in high gear with ACE attending all the public meetings with Hetrick Communications
- Meet with everyone from homeowners associations, downtown businesses, police officers and firefighters, Mayor’s Special Task Force, and the Indianapolis Motor Speedway
**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, DC, 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

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Park & Ride Pilot

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

RESULTS:

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

Media/Public Response

- Headlines to start at midnight
  - Downtown businesses hope for ways to avoid Hyperfix logjam

Media/Public Response

- Ready, willing... not needed
  - The Indy Channel
  - Day 3: Hyperfix doesn’t live up to hype
  - Morning commuter from Greenwood

Media/Public Response

- Cover story
  - The Indianapolis Star
  - Traffic troubles not so bad, so far
  - Cover story

Media/Public Response

- The Indianapolis Star
  - Headlines to start at midnight
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  - Cover story
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Media/Public Response

**THE INDIANAPOLIS STAR**

**HYPERFIXED!**

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

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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)

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Long-Distance Award

Longest drive to work on Hyperfix = 75 miles

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Pavement Treatment

- Patch & SMA Surface
- Concrete Pavement
- Combination

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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
  - 30 days early
- Full Closure I-65/70 completed - July 20, 2003
  - 30 days early
- Post-closure work started - July 30, 2003
  - 20 days early
- Contract completion - October 11, 2003

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Notes:

- Hyperfix = 32 days
- Long-Distance Award = 55 days
- Project Schedule/Results = 30 days
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

Full-closure work - $100,000 / day – maximum 30 days
RESULT = Contractor completed full closure in 30 days = $3 million

Pay for Speed

Contract Days - $5,000 / day – up to 40 days
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$3.6 Million Total Incentives
Day 51 – July 16, 2003

Pay for Speed

Second day after opening – July 22, 2003

Pay for Speed

Lessons Learned
- Pre- and post-closure work – toughest part
- Murphy’s Law – Drunk driver
- Communication all the time
- Local buy in – key

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

May 29, 2003 – Day 3

Opening Ceremony – July 20, 2003

Lessons Learned

Finished Product

Minutes before opening – July 20, 2003

Finished Product
North Split – Looking South

Finished Product

South Split – Looking North

Finished Product

New Added Travel Lane – Pine Street On Ramp

Finished Product

New Added Travel Lane – South Split Area

Finished Product

Bridge Painting / Masonry Coating

Context-Sensitive Solutions

Walsh Construction

- 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 approaches
- 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

Phase IV – Bridges

- 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 – 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 50 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**

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**HYPERFIX**

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