



HYPERFIX<sup>65</sup><sub>70</sub>

## Speakers

- Gary Mrocza, Chief, Design Division, INDOT
- Sean Porter, overall Project Manager for American Consulting
- Tim Conarroe, Project Engineer for INDOT and head of all construction inspection
- Dan Rogers, Area Engineer, INDOT
- Brad Koester, Senior Project Manager, Walsh Construction
- JR Collard, Project Manager, Walsh Construction
- Acknowledgement for Bryan Nicol and Rick Smutzer for their leadership on making this job a success



## 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

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## The Problem



Deteriorated Pavement



Deteriorated Pavement Joints



Deteriorated Bridge Decks



Deteriorated Bridge Superstructure

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## An Aggressive Problem-Solving Approach



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## Closure Opportunity

- One construction season - 2003
- Alternate routes available - highways and streets
  - I-465 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





## The Project



After



Retaining wall on 10<sup>th</sup> Street for Monon Trail Extension



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 10<sup>th</sup> 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



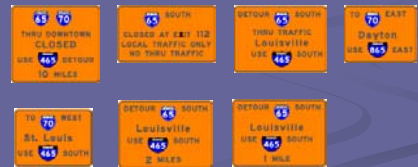
## INDOT Response Full-Closure Plan

- 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



## Public Relations Campaign

- Multiple media releases/events w/ media kits
  - Television, radio, and newspaper
- Comprehensive project website ([www.hyperfix6570.in.gov](http://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



## 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:

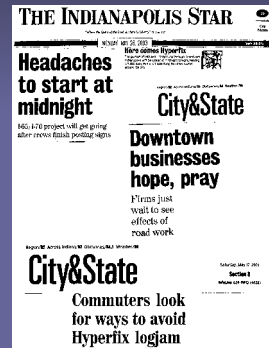
- 37,000 person-trips
- Spiked interest in Park & Ride as transit option
- Service continues for the remainder of 2003



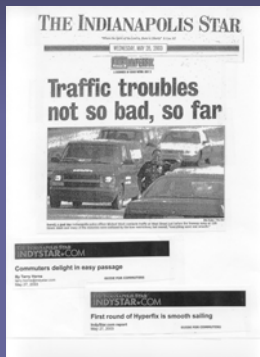
Hyperfix Park & Ride Coach



## Media/Public Response



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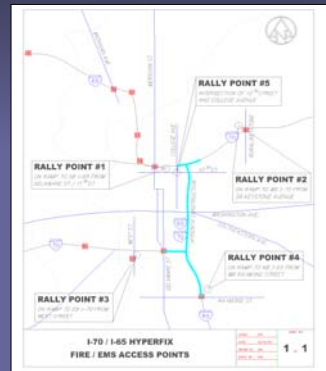
## Construction Inspection

- 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)



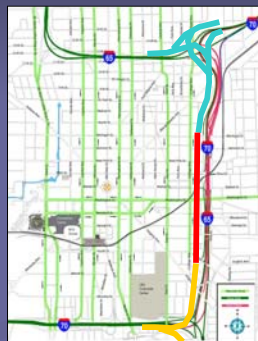
## Long-Distance Award

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 } 32 days
- Pre-closure work completed - May 3, 2003 } 18 days early!
- Full Closure I-65/70 started - May 27, 2003 } 55 days
- Full Closure I-65/70 completed - July 20, 2003 } 30 days early!
- Post-closure work started - July 30, 2003 } 30 days
- 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 55 days! 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**



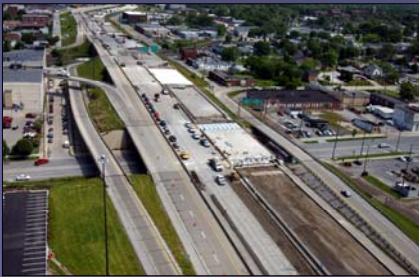
## Pay for Speed



Day 2 of Hyperfix



## Pay for Speed



Day 3 – May 29, 2003



## Pay for Speed



Day 14 – June 9, 2003



## Pay for Speed



Day 22 – June 17, 2003



## Pay for Speed



Day 28 – June 23, 2003



## 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



May 29, 2003 – Day 3



## Finished Product



Opening Ceremony - July 20, 2003



## 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



## Context-Sensitive Solutions



Bridge Painting / Masonry Coating



## 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 approach
- Roadway Reconstruction
  - Milled and removed existing asphalt overlay
  - Completed full-depth pavement patches
  - Construct 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 – Bridges



## Phase IV – Bridges





## 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





## Phase IV – Intelligent Traffic Systems

- Installed new vehicle and speed detection equipment
- Installed new data collection sites



## Phase IV – Guardrail

- Installed 18,000 lft 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

