Arkansas’ Interstate Rehabilitation Program

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Background of the Interstate System in Arkansas
Background

• First Section – Interstate 55 in West Memphis
  – Opened to traffic in 1959
  – JCP

• Last Section – Interstate 530 in Pine Bluff
  – Opened to traffic in 1997
  – JCP
Original Interstate Construction in Arkansas

Interstate 30
Initial Construction
1958 - 1973

Interstate 40
Initial Construction
1961 - 1973

Interstate 540
Initial Construction
1965 - 1979

Interstate 55
Initial Construction
1959 - 1964

Interstates 430, 440, 630
Initial Construction
1969 - 1985

Interstate 530
Initial Construction
1962 - 1999

Interstate 30
Initial Construction
1958 - 1973

Interstate 540
Initial Construction
1981 - 1998
The Interstate System in Arkansas

- 1999 - 543 Centerline Miles
  - 40th of 50 in Total Length

- 2005 - 657 Centerline Miles
  - 35th of 50 in Total Length
  - Addition of
    - I-530
    - I-540 North of I-40
Typical Pavement Design – Original Interstate

• Jointed PCCP
  – Primarily mesh reinforced PCCP
  – 9” to 10” slab thickness
  – 6” granular base typical
  – Dowelled construction joints @ 45’
  – Sawn warping (control) joints @ 15’
    • Undowelled

• Continuously Reinforced Concrete
  – 8” slab thickness
  – 6” to 8” soil cement or lime treated base

(12’ slab widths with bituminous shoulders typical)
Typical Section of Original Interstate

- 6'-0" 12'-0" 12'-0" 10'-0"
- 0.04 0.015 0.04
Why the IRP?
Original Interstate

- In 1999 the average age of an Arkansas Interstate segment was 35 Years

- Typical rural segment designed for
  - 7% - 10% Trucks
  - 10,000 – 15,000 ADT

- Many segments had met their design traffic within 7 years
Interstate Condition

• In 1994, using IRI “condition” data, Arkansas’ Interstate system ranked one of the 5 worst

• Ranked one of the worst states according to the trucking industry

• Arkansas typically rehabilitates 10 – 15 miles of Interstate pavements per year
Bond Information

- Approved by Arkansas voters in June 1999
  - 4:1 Margin

- $575 Million in bonds

- $950 Million in Improvements
  - Originally programmed - 379 miles
  - Actually let to contract – 359 miles
Bond Information

• Bonds were sold over three years
  – 2000 - 2002

• Work was scheduled to be completed within 5 years

• Program would rehabilitate 54% of the Arkansas Interstate system
Major Design Issues

- Pavement Selection and Design
- Bridge Rehabilitation (*not covered here*)
- Maintenance of Traffic
Pavement Selection and Design
-- Rehabilitation Types --
Interstate Rehabilitation Program Overview

Interstate locations to be rehabilitated under the IRP.
Rubblize and Overlay

-- 276 Miles --

• 4” ACHM Surface Course (½ ”)
  – Placed in two lifts

• 3” ACHM Binder Course (1 ”)

• 4” ACHM Base Course (1 ½ ”)

• 9” – 10” Rubblized PCCP
Jointed Concrete Pavement
-- 40 Miles --

- 14” Portland Cement Concrete Pavement
- 1” ACHM Binder Course (3/8 ”)
- 6” Cement Stabilized Base Course
- Existing concrete pavement removed
  - Widened slab in truck lane to 14 feet
  - Dowels at all joints
Mill and Inlay
-- 64 Miles --

- Cold mill existing ACHM surface
- 2” ACHM Surface Course (1/2 “)
- 4” ACHM Binder Course (1 ”)
Rubblization

- Edge drain installation
Rubblization

Resonant Head Breaker

Multi-Head Breaker
Rubblization
Rubblization
Maintenance of Traffic
Before Construction Began

• Public relations campaign using
  – Television infomercials
  – Radio spots
  – Internet web site
  – Newspaper spots
During Construction

• Motorists were made aware using
  – Television infomercials
  – Radio broadcasts
  – Internet web site
  – Newspaper spots
  – Billboards
  – Traffic control
    • Highway Advisory Radio (HAR)
    • Changeable message boards
    • Iowa Weave
“Pave the Way” Web Site

Welcome and thank you for taking the time to visit our web site about the Interstate 40 Construction in Arkansas.

We hope this web site will give you an overview of the construction program and spell out the various ways you can plan ahead to make your journey through Arkansas easier.

Please come back and visit often since we will update this site continuously. It is the most complete reference to all of the information resources available to you about construction and delay updates.

And, please remember to Think Ahead — in order to make travel safer for you, your passengers and other motorists.

Traffic Zone | Safety Zone | Info Zone | Fun Zone | Site Map | Home
Highway Advisory Radio

ROAD CONSTRUCTION
NEXT 16 MILES
FOR INFORMATION
TUNE TO 1680 AM

“Pave The Way” Interstate Signage and
Highway Advisory Radio Networks

This image and corresponding press release are available via the press kit at www.ArkansasInterstates.com
Changeable Message Boards
The Weave
FOR A SMOOTHER RIDE

THANK YOU FOR YOUR PATIENCE!

ANOTHER PROJECT COMPLETED!

ARKANSAS HIGHWAY COMMISSION
Results of the IRP in Arkansas
# Projects Let To Date

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<th>ROUTE</th>
<th>NUMBER OF PROJECTS</th>
<th>TOTAL MILES</th>
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## Projects Under Construction

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## Totals

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From Bond Job Status Report (5/1/2005)
Interstate Lane Miles By Surface

1999 – Pre IRP
• 2703 Total Lane Miles
  – PCCP
    • 1999 Miles
  – ACHM
    • 704 Miles
• 74% PCCP
• 26% ACHM

2005 – Post IRP
• 2756 Total Lane Miles
  – PCCP
    • 991 Miles
  – ACHM
    • 1765 Miles
• 36% PCCP
• 64% ACHM

ORIGINAL INTERSTATE 100% PCCP
**Interstate 40**

- **1994 IRI** – 155 in/mi
- **1999 IRI** – 155 in/mi
- **2005 IRI** – 71 in/mi

### Table of IRI Values

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OVERALL INTERSTATE IRI

1994 IRI -- 153
1999 IRI -- 137
2005 IRI -- 82
IRI “CONDITION” SCALE

- POOR – IRI ≥ 170 (in/mi)
- MEDIocre – 170 > IRI ≥ 120 (in/mi)
- FAIR – 120 > IRI ≥ 95 (in/mi)
- GOOD – IRI < 95 (in/mi)
Interstate System IRI

- **1994**
  - 28%
  - 17%
  - 16%

- **1999**
  - 37%
  - 17%
  - 13%

- **2006**
  - 33%
  - 33%
  - 9%
  - 6%
  - 12%
  - 73%