

Arkansas State Highway and Transportation Department



*2008 Southeastern States
Pavement Management
and Design Conference*

North Little Rock, Arkansas

June 4, 2008

Use of Pavement Management Data for Planning and Development

Or

Is it Possible for a Pavement
Guy to become a Planning
Engineer?



Back when I started.....





































What do we need to make proper decisions?

- ▣ Condition Rating of the Pavement Today?
- ▣ Performance curves for like pavements?
- ▣ Condition Forecasts on a network level?
 - By type?
 - Functional class?
 - Design?
 - Traffic?

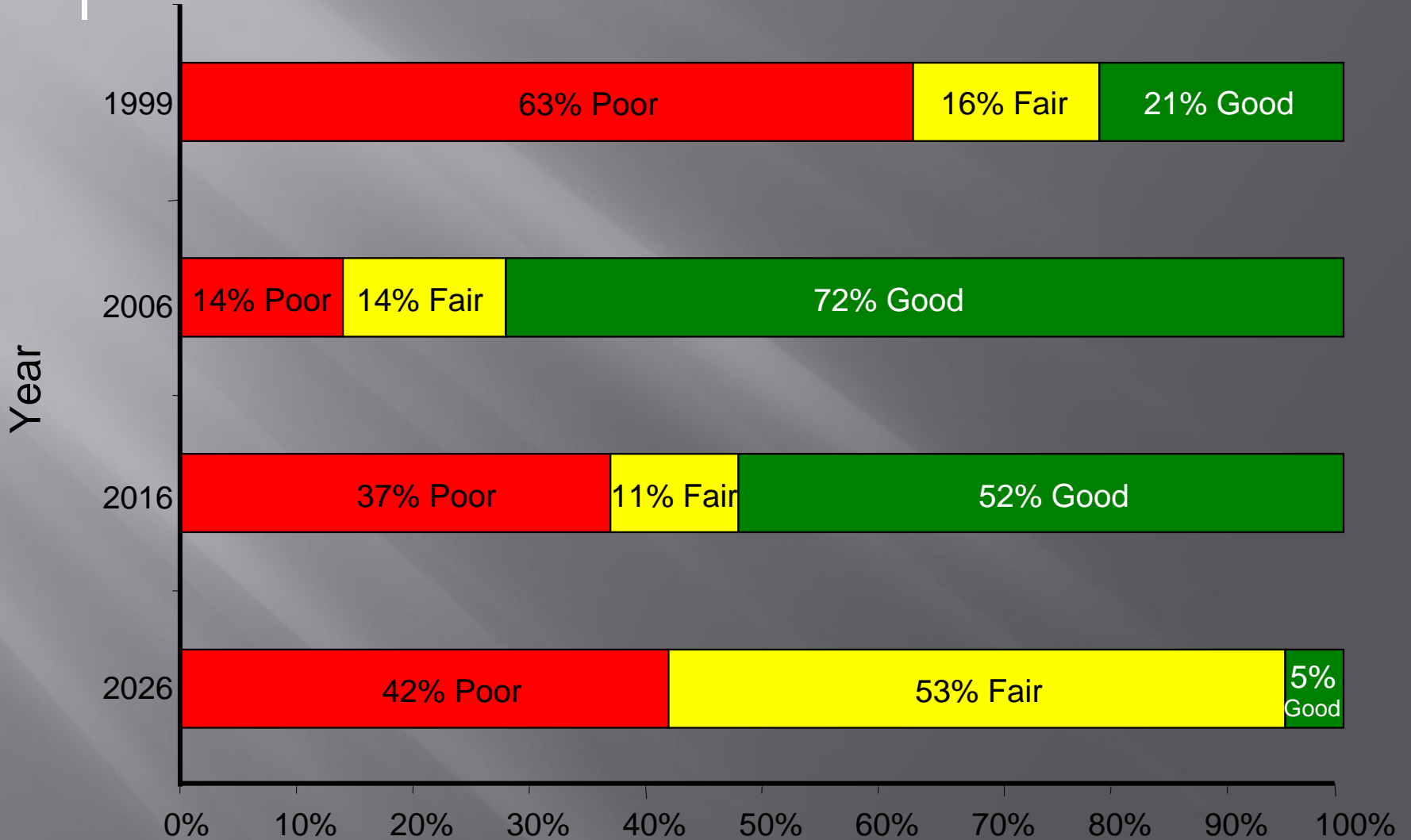
It's a Matter of Opinion



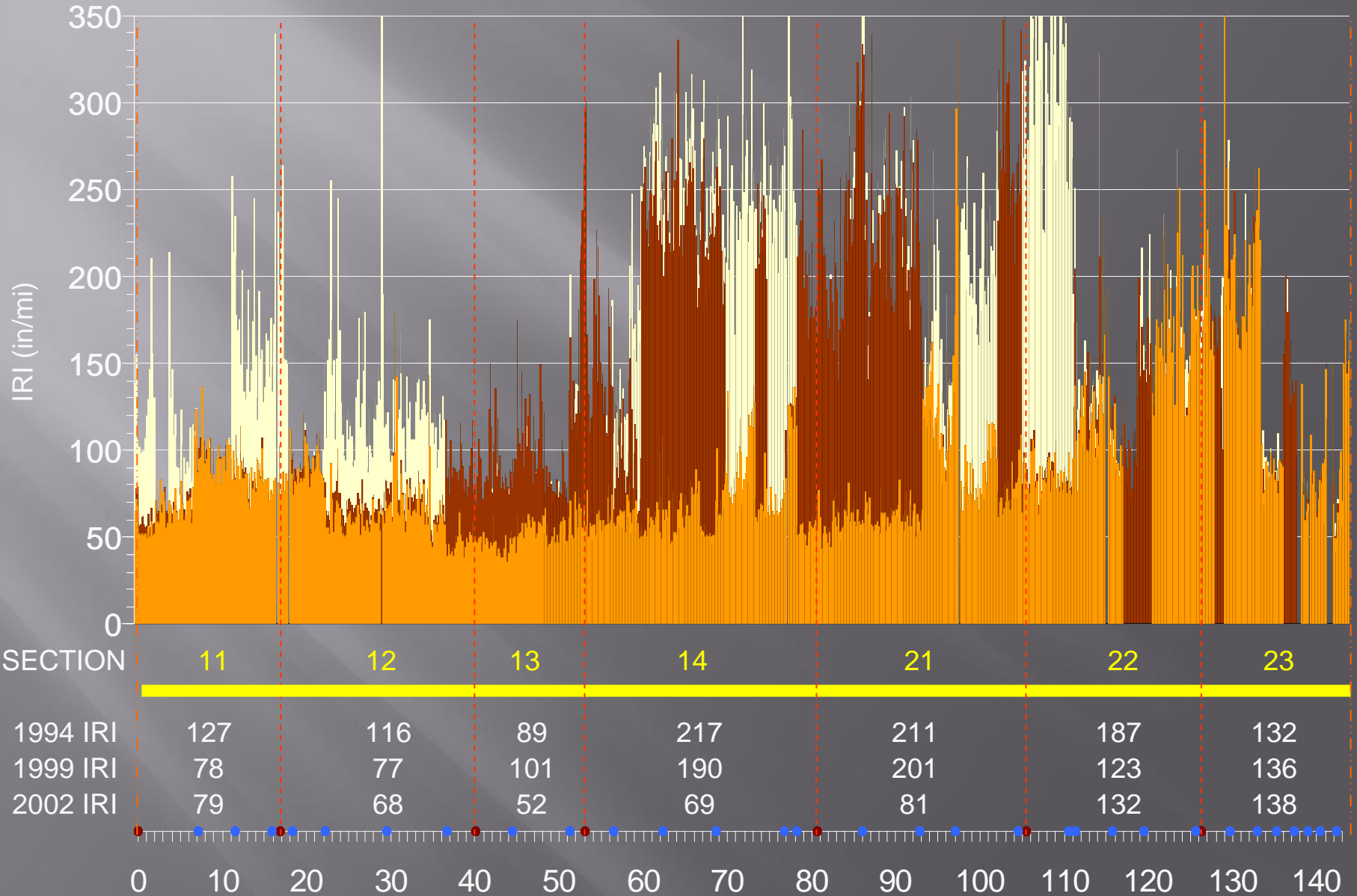
What is Available?

- ▣ IRI within the last two years
- ▣ Rutting data
- ▣ Willing staff

Interstate Condition



Interstate 30



Performance Curves

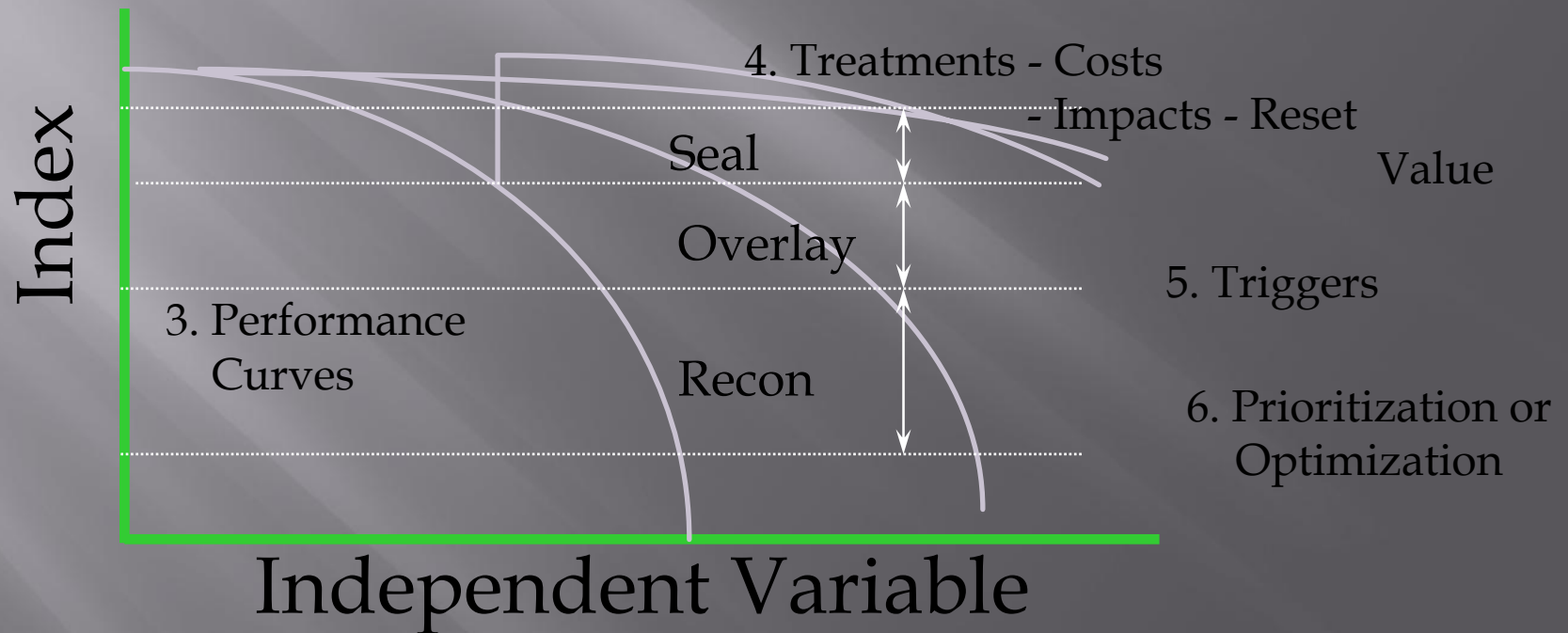
1. Inventory and Condition Data

2. Performance Indexes

PCI

PSR

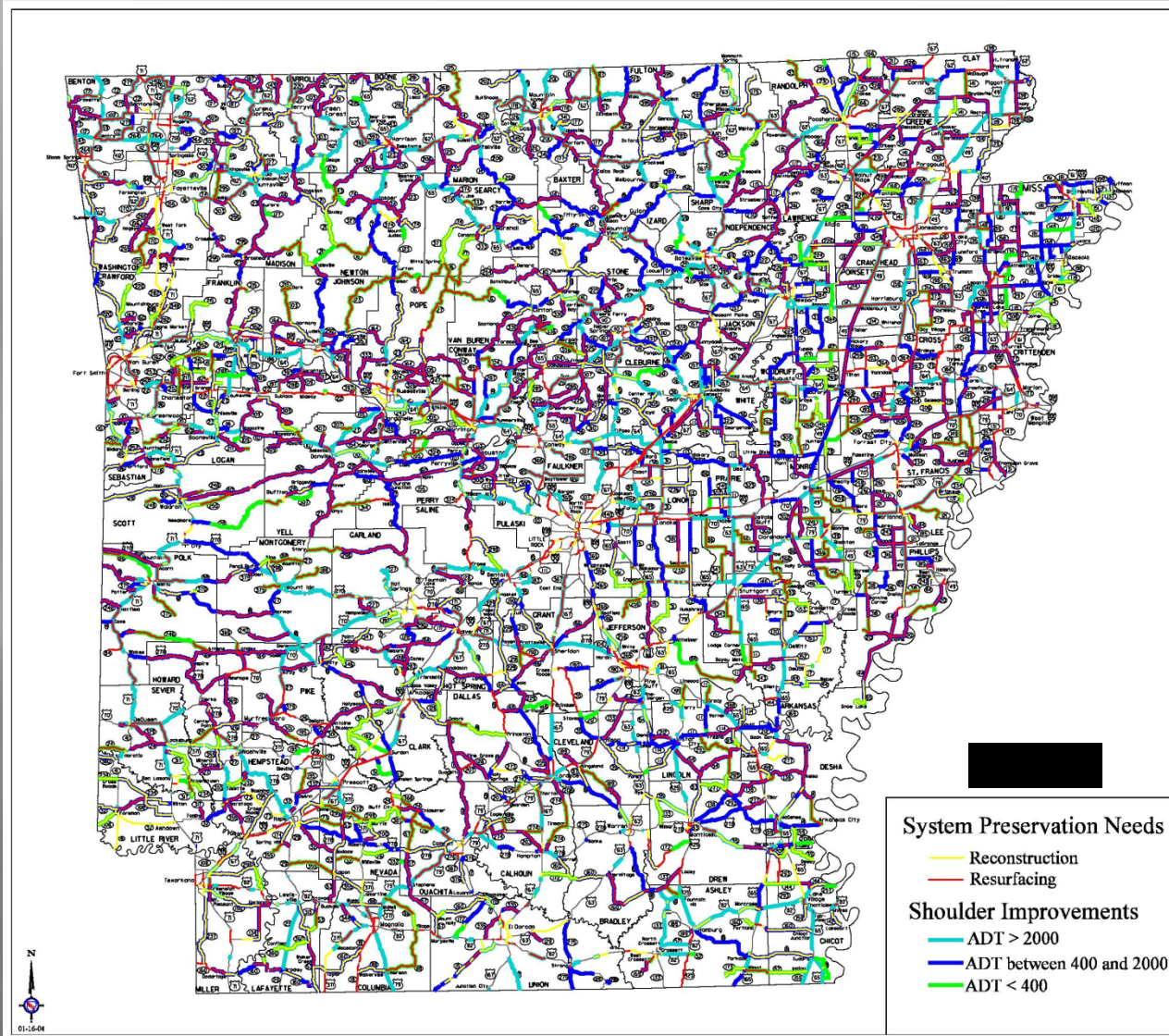
IRI



The plan

- ▣ We “correlated” IRI with earlier pavement condition ratings.
- ▣ We segmented the State Highway System to produce useable ratings.
- ▣ We established threshold values on segments to trigger treatment options such as overlay or reconstruction.
- ▣ We utilized all databases at our disposal to develop the map and determine costs.

Maintaining the System



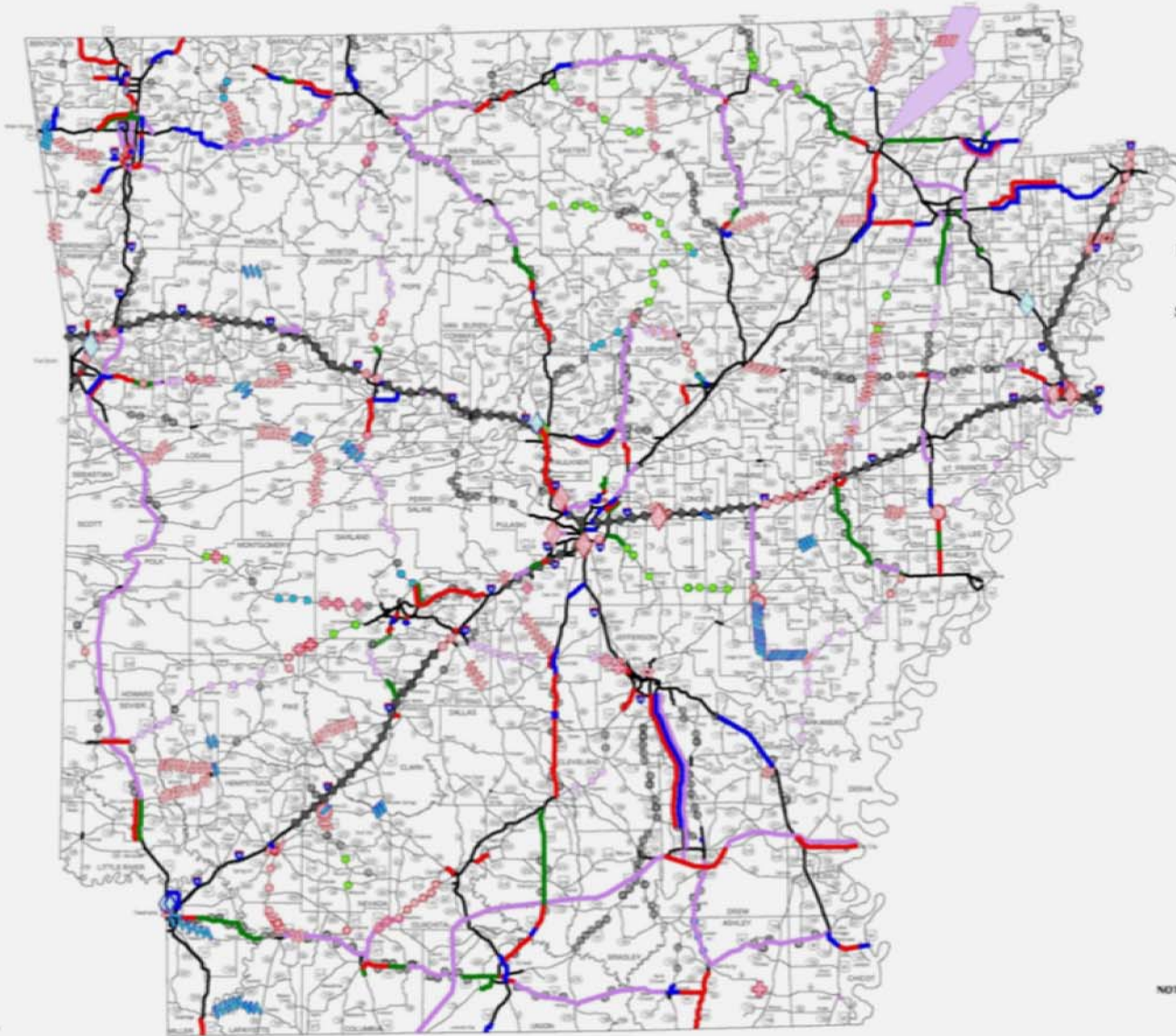
10-Year Highway Needs

Congestion Relief	\$ 3.4 billion
Maintaining the System	\$ 8.8 billion
Congressionally-designated High Priority Corridors	\$ 5.2 billion
Economic Development Connectors	\$ 1.7 billion
Total Needs and Other Improvements	\$ 19.1 billion
Anticipated Funding	\$ 4.1 billion
SHORTFALL	\$ 15.0 billion

System-wide Needs

- **Constantly growing needs**
 - ✓ 1998 - \$14.2B in 10-year highway needs
 - ✓ 2003 - \$16.1B in 10-year highway needs
 - ✓ 2006 - \$19.1B in 10-year highway needs

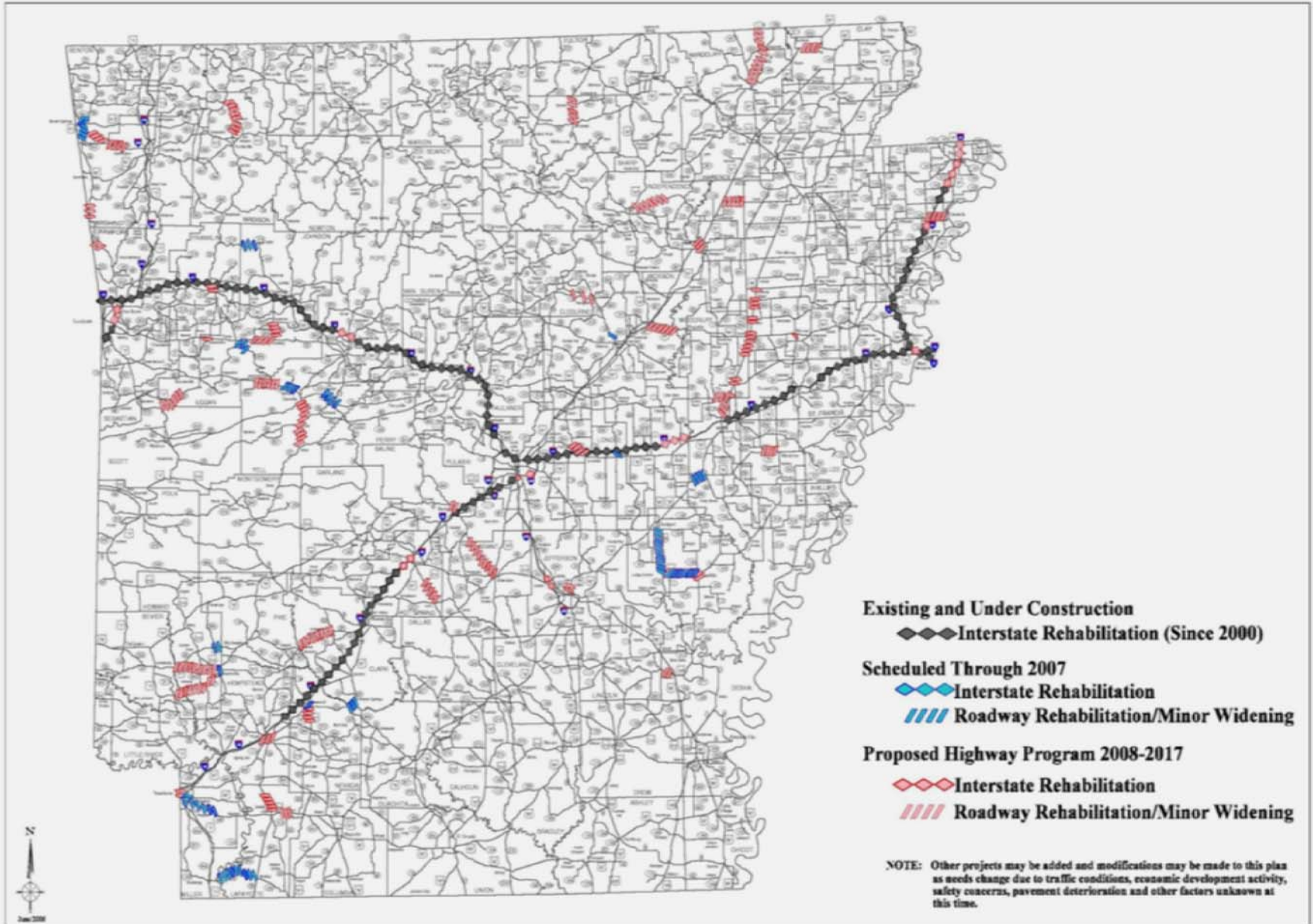




- Existing and Under Construction**
- 4+ Lane
 - ○ ○ Passing Lanes
 - ◆ Interstate Rehabilitation (Since 2000)
- Scheduled Through 2007**
- 4+ Lane
 - ◆ Interchange
 - ○ ○ Passing Lanes
 - ◆ Interstate Rehabilitation
 - /// Roadway Rehabilitation/Minor Widening
- Proposed Highway Program 2008-2017**
- 4+ Lane
 - ◆ Interchange
 - Railroad Overpass
 - ○ ○ Passing Lanes
 - ◆ Interstate Rehabilitation
 - /// Roadway Rehabilitation/Minor Widening
 - ◆ Safety Improvements
 - Resurfacing/Minor Widening (Not Shown on Map) - \$0.25 Billion
 - Bridge Improvements (Not Shown on Map) - \$0.5 Billion
- Proposed Highway Program 2018-2027**
- 4+ Lane
 - ◆ Interchange
 - ○ ○ Passing Lanes
 - ◆ Interstate Rehabilitation (Not Shown on Map) - \$0.8 Billion
 - /// Roadway Rehabilitation/Minor Widening (Not Shown on Map) - \$0.2 Billion
 - Resurfacing/Minor Widening (Not Shown on Map) - \$0.25 Billion
 - Safety Improvements (Not Shown on Map) - \$0.2 Billion
 - Bridge Improvements (Not Shown on Map) - \$0.5 Billion
- Long Range Unfunded Corridor Needs**
- 4+ Lane
 - ○ ○ Passing Lanes

NOTE: Other projects may be added and modifications may be made to this plan as needs change due to traffic conditions, economic development activity, safety concerns, pavement deterioration and other factors unknown at this time.





Improvements needed to provide network level data for program development

- ▣ Pavement Structure Data
- ▣ Cracking data
- ▣ Strength data
- ▣ Performance history
- ▣ Crystal Ball

Current and Emerging Issues

- Managing an Extraordinarily Large Highway System

- ✓ Capacity Improvements
- ✓ System Preservation
- ✓ Corridor Development



- Stable Source of Funding that Includes Growth
- Accommodating Construction Cost Increases
- Meeting Expectations of Arkansas Drivers

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