



9th International Conference on MANAGING PAVEMENT ASSETS (ICMPA9)

Data Driven Decision Making in Arkansas

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Data Driven Decision Making in Arkansas

- Brief History of AHTD Pavement / Asset Management
- Purpose of Asset Management
- Arkansas Highway System Overview
- Maintenance Budgeting and Purpose
- Project Prioritization / Recommendations
- Communication

Arkansas History



MMHIS

The screenshot displays the MMHIS software interface. The main window shows a perspective view of a road with a blue sky and white clouds. A data bar at the top of the road view displays: 01 068 001 11B 1 TF 1 0.811 73.6 2012-07-10 27A07200.1M0. A circular logo is visible in the top right corner of the road view.

The left sidebar contains a table with the following data:

Category	Item	Value
GPS	Latitude	34.460221
GPS	Longitude	-90.762193
Roadway	Roadway Data Date	9/20/2012
Roadway	District	0
Roadway	County	07_PRAIRIE
Roadway	Log Mile	0.400 mile
Roadway	Section	018
Roadway	Beginning Log Mile	0.000 mile
Roadway	Ending Log Mile	0.800 mile
Roadway	Length	0.800 mile
Roadway	Number of Lanes	0
Roadway	Speed Limit	Signal
Roadway	Functional Class...	4
Roadway	MSIS System Class...	Not MSIS
Roadway	Surface Type	Asphalt
Roadway	Surface Width	70 ft
Roadway	Lane Width	11 ft
Roadway	Median Width	25 ft
Roadway	Right Shoulder Co...	Asphalt
Roadway	Right Shoulder W...	0 ft
Roadway	Left Shoulder Sur...	Asphalt
Roadway	Left Shoulder Width	0 ft
Roadway	Job Number	
Roadway	Year Built	
Forward	Average Daily Tra...	2009
Forward	MSIS Data Date	2012
Forward	PI - Left Wheel P...	61.95 inches
Forward	PI - Right Wheel P...	61.72 inches
Forward	Rolling Left Side	0.168 inches
Forward	Rolling Right Side	0.216 inches
Forward	Grade	0.5%
Forward	Fault Count	0
Forward	Average Fault	0.00
Forward	Maximum Fault	0
Bridge	Bridge Data Date	N/A
Bridge	Structure Number	N/A
Bridge	Facility On Structure	N/A
Bridge	Highway/Structure	N/A
Bridge	Year Built	N/A
Bridge	Main Span Type	N/A
Bridge	Approach Span T...	N/A
Bridge	Number of Appro...	N/A
Bridge	Maximum Span Le...	N/A
Bridge	Structure Length	N/A
Bridge	Clearance-Curb Width	N/A
Bridge	Clearance-Deck Width	N/A
Bridge	Deck Condition	N/A
Bridge	Substructure Con...	N/A
Bridge	Operating Rating	N/A
Bridge	Bridge Posting	N/A
Bridge	Inspection Inspector	N/A
Bridge	Designated Shape...	N/A
Bridge	Year Reconstructed	N/A
Bridge	Deck Type	N/A
Bridge	Surface Type	N/A
Bridge	Sufficiency Rating	N/A
Bridge	Replacement Plan	N/A
Job Status	Job Status Data	N/A
Job Status	Job Number	N/A
Job Status	Project Length	N/A
Job Status	Mileage Order No...	N/A
Job Status	Mileage Order Date	N/A
Job Status	Lot Date	N/A

Purpose of Asset Management

- “State DOTs increasingly use asset management plans to make decisions about where and when to invest State and Federal funds in highway infrastructure improvements...”

-FHWA Proposed Rules of Asset Management Plan

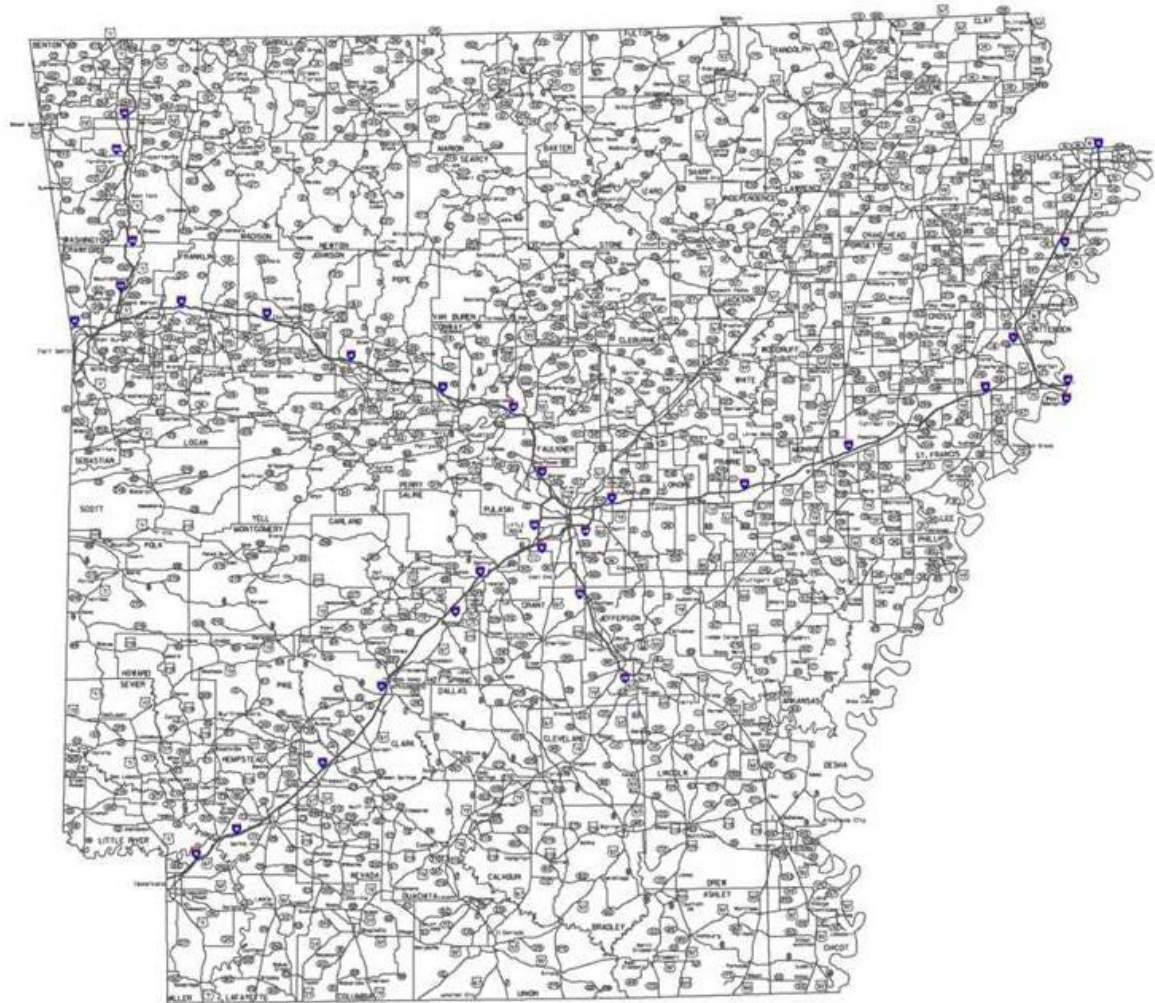
- “Projects are selected by field personnel whose expertise is in addressing immediate needs. The concept of project selection based on an asset life cycle is unknown to many of them.”

-FHWA Proposed Rules of Asset Management Plan

Arkansas Highway System

Networks

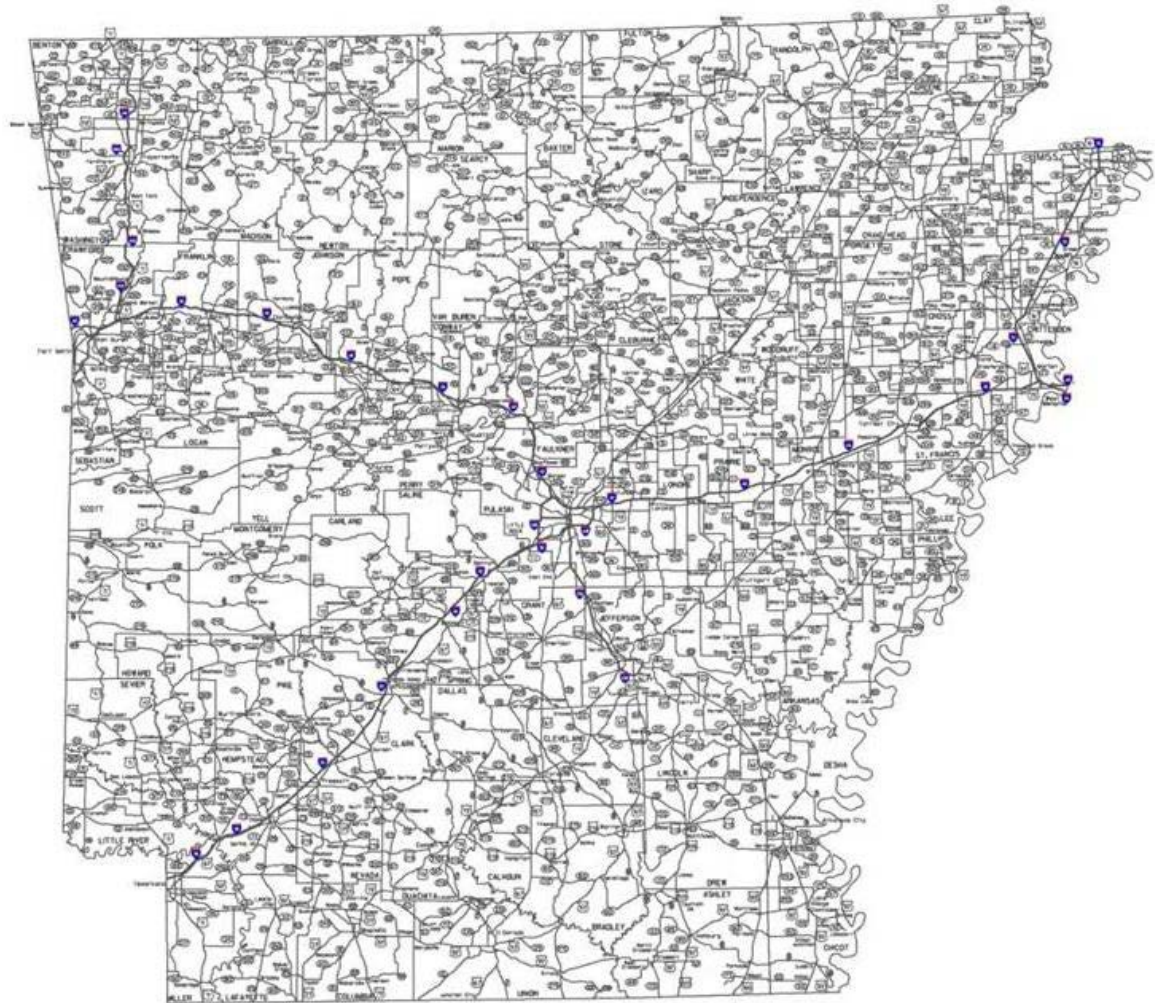
- Total System
 - 16,398 Miles
- 12th Largest
 - Illinois
 - California
 - New York
 - Tennessee
 - Florida
- Rank 28th in Land Area



Arkansas Highway System

Networks

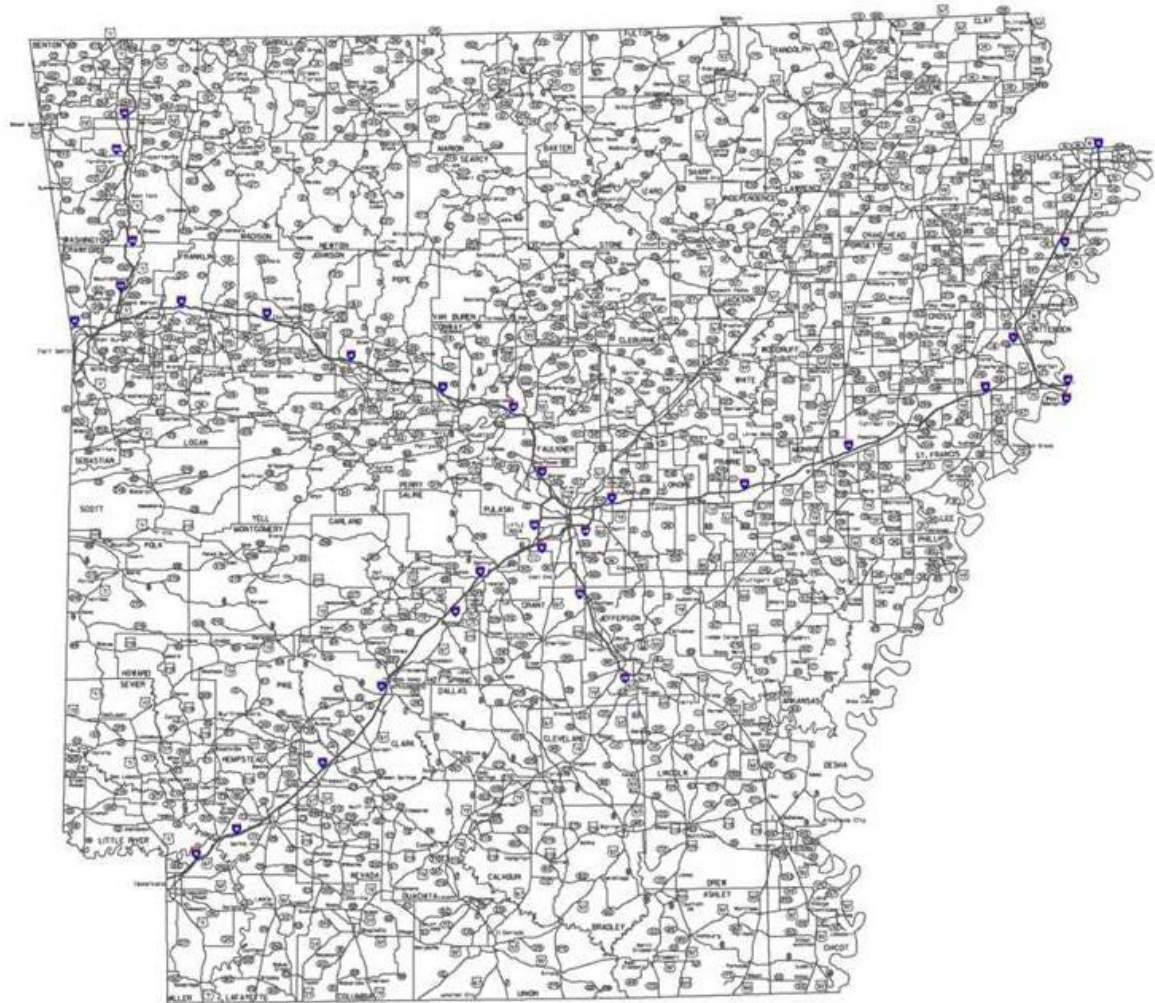
- Interstate
 - 667 Miles
- NHS
 - 3,667 miles
 - Includes IHS
- State
 - 12,731 Miles



Arkansas Highway System

Networks

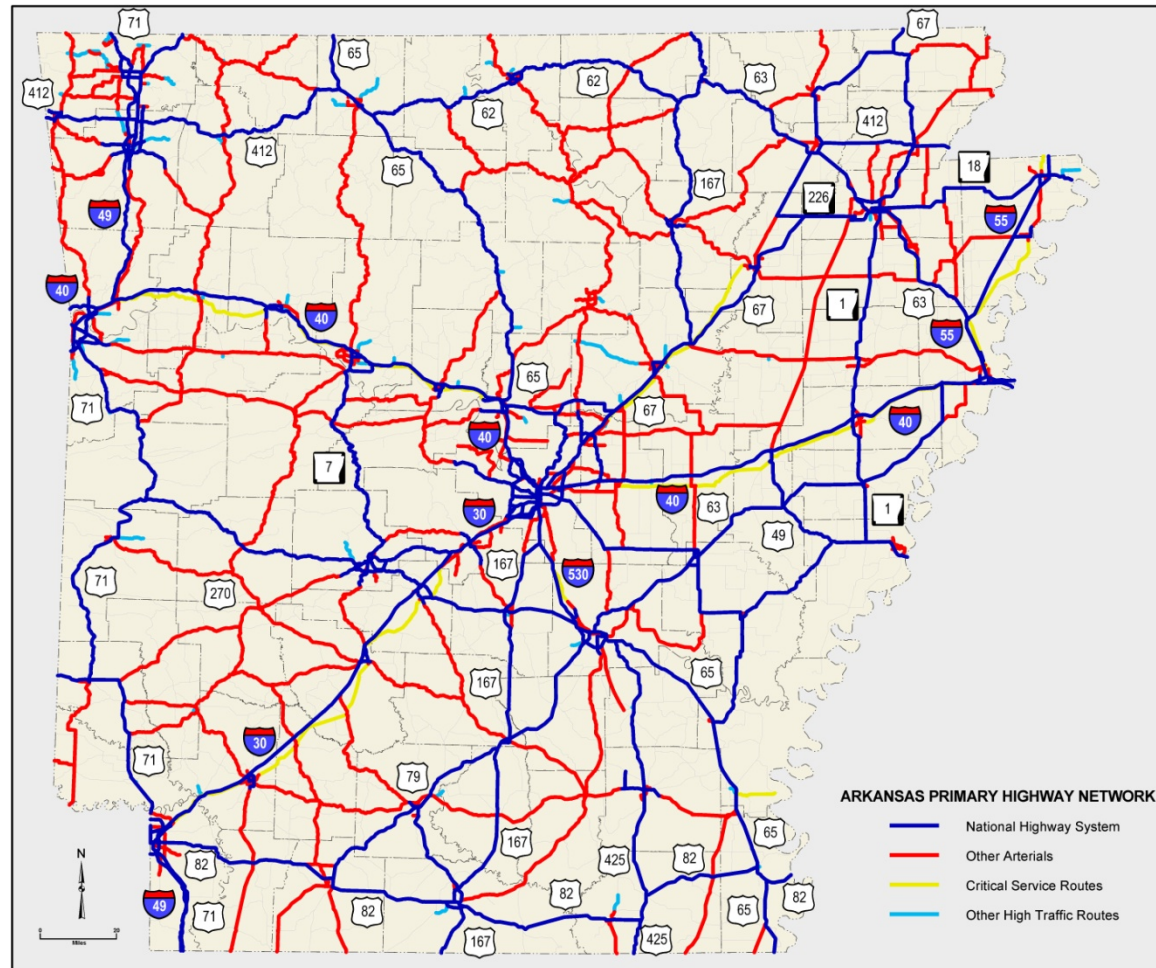
- APHN
 - 7,819 Miles
 - 47.7%
- Non-APHN
 - 8,579 Miles



Arkansas Highway System

Networks

- APHN
 - 7,819 Miles
 - 47.7%
- Non-APHN
 - 8,579 Miles



Maintenance

Stats

- 12th
Largest System
- 44th
Highway
Revenue
Per Mile



Maintenance

Programs

- \$130 Million Annual Budget
- 250 Miles ACHM Overlay
- 400 Miles Sealing
- 100 Miles Leveling



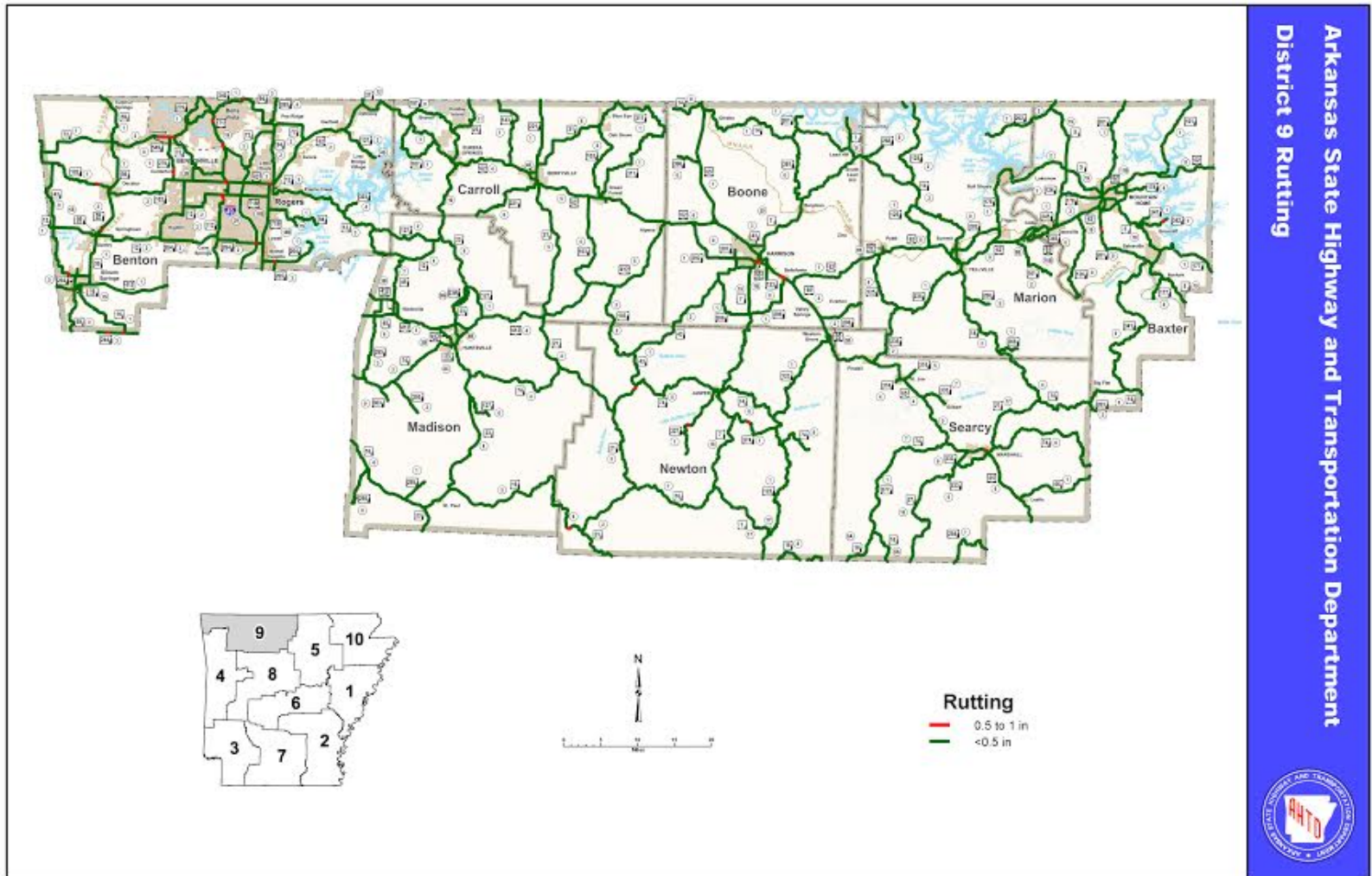
Data

District	County No	County Name	Route	Section	Begin LM	End LM	Rutting(in)	IRI(in/mi)	Cracking(UCI)	ADT
9	4	BENTON	112	020	0.00	0.10	0.28	154	39	5800
9	4	BENTON	112	020	0.10	0.20	0.31	89	30	5800
9	4	BENTON	112	020	0.20	0.30	0.35	98	27	5800
9	4	BENTON	112	020	0.30	0.40	0.23	86	28	5800
9	4	BENTON	112	020	0.40	0.50	0.19	76	28	5800
9	4	BENTON	112	020	0.50	0.60	0.16	88	25	4600
9	4	BENTON	112	020	0.60	0.70	0.12	83	23	4600
9	4	BENTON	112	020	0.70	0.80	0.18	75	20	4600
9	4	BENTON	112	020	0.80	0.90	0.21	94	25	4600
9	4	BENTON	112	020	0.90	1.00	0.15	72	28	4600
9	4	BENTON	112	020	1.00	1.10	0.13	73	26	4600
9	4	BENTON	112	020	1.10	1.20	0.21	86	27	4600
9	4	BENTON	112	020	1.20	1.30	0.23	82	20	4600
9	4	BENTON	112	020	1.30	1.40	0.33	99	14	4600
9	4	BENTON	112	020	1.40	1.50	0.13	100	18	4600
9	4	BENTON	112	020	1.50	1.60	0.11	96	24	4600
9	4	BENTON	112	020	1.60	1.70	0.13	94	24	4600
9	4	BENTON	112	020	1.70	1.80	0.12	97	19	4600
9	4	BENTON	112	020	1.80	1.90	0.14	111	18	4600
9	4	BENTON	112	020	1.90	2.00	0.17	114	25	4600

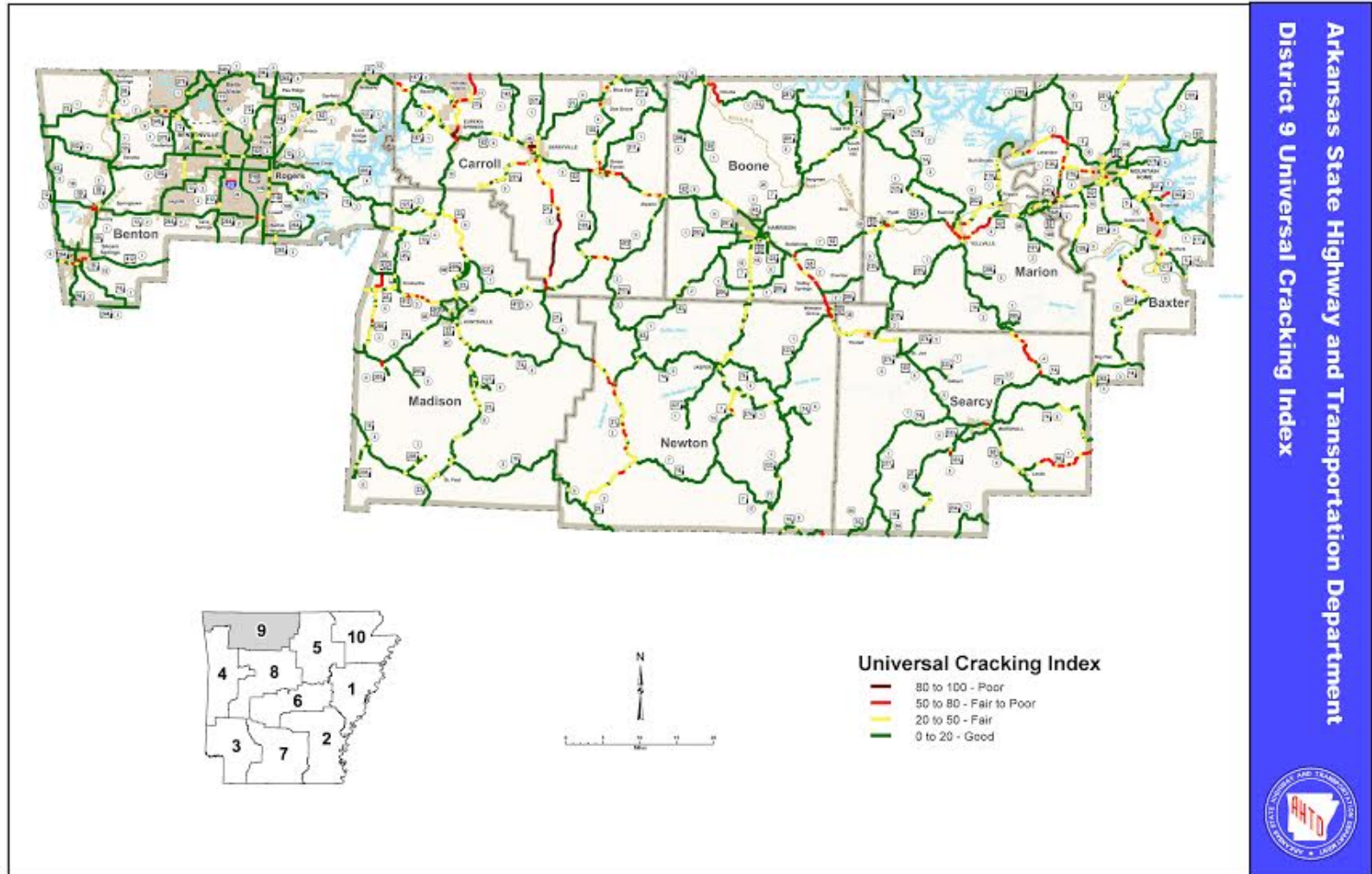
ADT
Low
Medium
High

Condition
Good
Fair
Poor

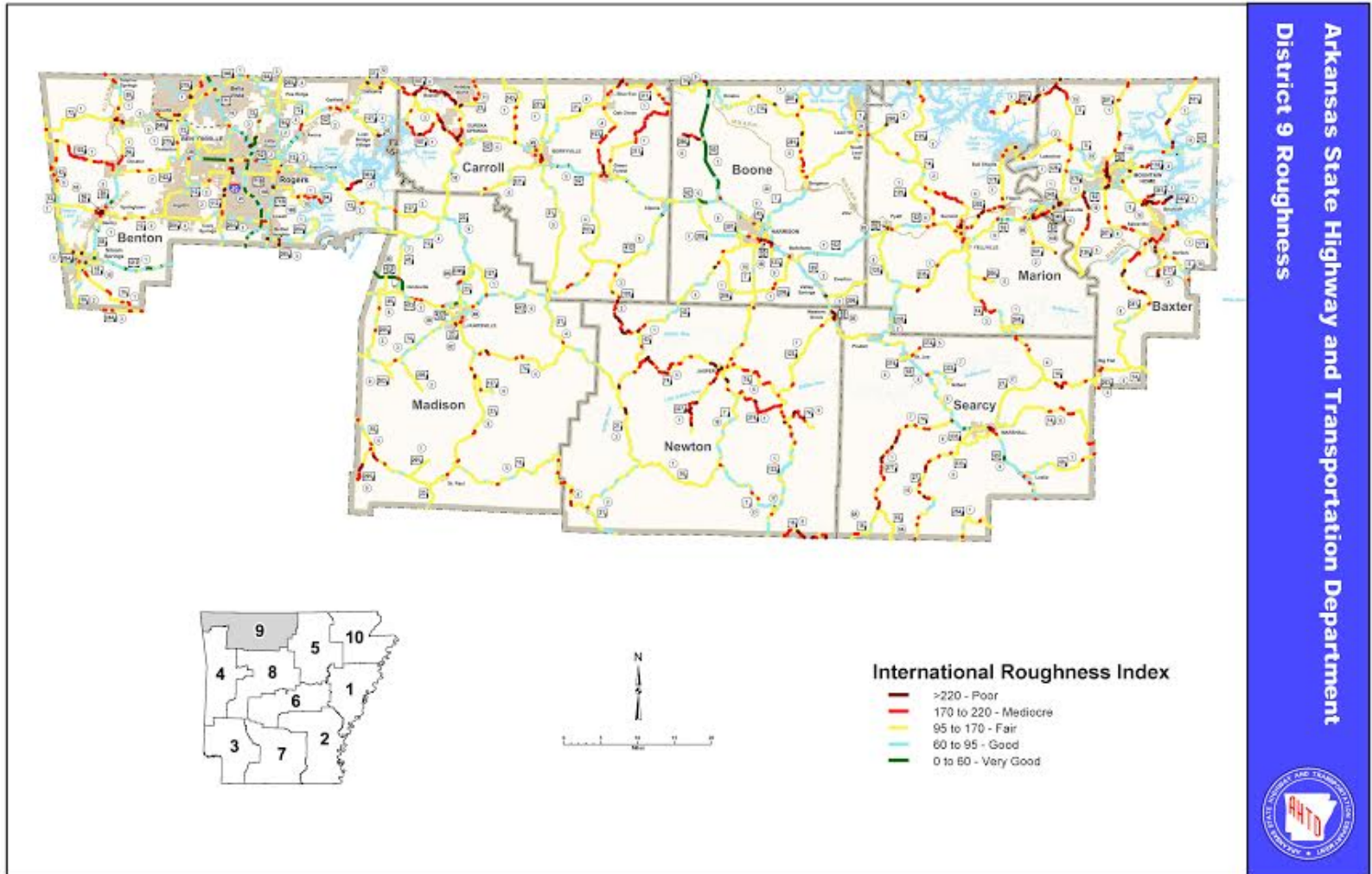
Data



Data



Data



Rating System

State Highway System Grading Scale (PCI)		
Grade	High PCI	Low PCI
A	100	85
B	85	70
C	70	55
D	55	40
F	40	0

Project Selection

Dist.	County	Route	Sect.	Begin_YM	End_YM	Length	AvgPQI	Q	Year/Notes	ADT	Truck_Pct	System	Number of lanes	Surface Type	Q mode	Treatment Cost	Project Cost
9	BENTON	22	030	4.4	8.1	1.8	51.74	55.95	1994	3,400	0.05	ARHN	2	Asphalt	F	\$ 305,000.00	\$ 1,057,000.00
9	BENTON	72	030	0.0	1.2	1.2	55.15	55.55	1995	4,900	0.04	ARHN	2	Asphalt	F	\$ 305,000.00	\$ 732,000.00
9	BOONE	592	030	9.0	10.4	1.4	54.55	54.95	1970	7,015	0.04	ARHN	2	Asphalt	F	\$ 305,000.00	\$ 854,000.00
9	BENTON	72	030	5.1	8.2	3.1	57.55	51.91	1992	4,700	0.04	ARHN	2	Asphalt	F	\$ 305,000.00	\$ 1,591,000.00
9	BAXTER	52	125	0.0	1.7	1.7	57.75	54.55	1991	15,000	0.04	ARHN	4	Asphalt	F	\$ 305,000.00	\$ 2,074,000.00
9	CARROLL	105	040	14.8	17.2	2.4	40.19	45.35	1951	1,052	0.04	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 442,000.00
9	CARROLL	25	110	0.0	6.8	6.4	40.20	49.15	1997	3,400	0.04	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 1,156,000.00
9	BAXTER	3	190	12.1	14.4	2.3	40.55	49.05	1990	2,555	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 581,200.00
9	SEARCY	55	050	9.5	10.4	1.1	41.05	55.57	2000	6,200	0.17	NHS	4	Asphalt	D	\$ 150,000.00	\$ 572,000.00
9	BAXTER	3	150	4.4	12.0	7.2	41.25	45.90	1994	3,500	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 1,854,400.00
9	CARROLL	52	050	10.5	11.8	1.3	41.59	49.95	1995	4,750	0.07	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 517,200.00
9	CARROLL	52	050	6.1	9.5	1.5	41.57	45.97	1991	3,900	0.04	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 414,800.00
9	MARION	52	050	0.0	4.5	4.5	41.52	51.57	2001	7,400	0.05	NHS	2	Asphalt	D	\$ 150,000.00	\$ 1,196,000.00
9	MARION	175	030	3.7	11.5	7.8	42.14	47.11	1978	2,755	0.03	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 1,526,000.00
9	NEWTON	7	150	15.5	17.9	1.2	42.91	47.35	1995	2,400	0.07	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 517,200.00
9	MARION	52	050	10.7	15.2	2.5	43.25	49.90	2001	3,051	0.1	NHS	2	Asphalt	D	\$ 150,000.00	\$ 650,000.00
9	BAXTER	52	105	0.1	2.0	1.9	43.55	45.55	1974	1,500	0.05	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 525,000.00
9	BAXTER	125	030	1.4	2.5	1.2	43.55	45.19	2001	2,700	0.04	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 304,000.00
9	BAXTER	3	190	5.4	6.5	1.2	43.94	49.11	2005	3,000	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 541,600.00
9	SEARCY	55	040	0.9	5.5	4.5	44.05	52.95	1991	4,500	0.21	NHS	2	Asphalt	D	\$ 150,000.00	\$ 1,196,000.00
9	BENTON	59	030	0.5	1.5	1.0	44.20	49.04	1992	2,517	0.19	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 344,000.00
9	BENTON	52	030	5.5	11.4	2.9	44.20	51.55	1991	9,100	0.05	NHS	2	Asphalt	D	\$ 150,000.00	\$ 506,000.00
9	BAXTER	175	040	5.5	4.5	1.0	44.25	45.22	1975	1,500	0.04	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 170,000.00
9	NEWTON	7	150	15.1	15.2	2.5	44.44	45.05	1995	2,400	0.07	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 756,400.00
9	BENTON	59	030	5.2	7.5	2.1	44.52	49.49	1992	3,100	0.19	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 581,200.00
9	CARROLL	25	110	7.2	11.0	3.8	44.54	44.59	1997	1,523	0.04	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 546,000.00
9	NEWTON	7	150	6.7	11.5	4.5	44.70	45.52	2004	1,454	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 1,122,400.00
9	BAXTER	175	030	0.0	3.7	3.5	44.55	45.10	1979	3,500	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 902,600.00
9	CARROLL	52	050	0.2	3.2	2.5	45.01	45.45	1974	1,900	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 752,000.00
9	BENTON	252	030	0.0	1.0	1.0	45.53	47.24	NULL	9,500	0.04	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 344,000.00
9	MADISON	15	040	5.5	6.5	2.5	45.52	44.59	1977	1,100	0.05	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 505,200.00
9	MARION	14	050	7.4	10.5	2.5	45.55	44.59	1987	1,400	0.07	ARHN	2	Asphalt	D	\$ 122,000.00	\$ 707,600.00
9	BENTON	275	030	0.0	2.5	2.7	45.44	44.54	1990	1,400	0.05	Non-ARHN	2	Asphalt	D	\$ 85,000.00	\$ 495,000.00

Project Selection

10 056 063 08B 1 FS 001 2.111 64.0 2013-04-03 34307200.1M0



Highway 63 – Section 8B
System: APHN

Rutting: 0.29 inches

IRI: 190 inches / mile

UCI: 66

PCI: 33

ADT: 7,600

Excellent Good Fair Poor

Project Selection

10 011 067 20C 1 FD 001 0.100 34.9 2013-10-02 3A205200.1M0



Rutting: 0.56 inches

IRI: 320 inches / mile

UCI: 63

PCI: 18

ADT: 180

Excellent Good Fair Poor

**Highway 67 – Section 20
System: Non-APHN**

Acknowledgements

Maxx Leach

Sharon Hawkins