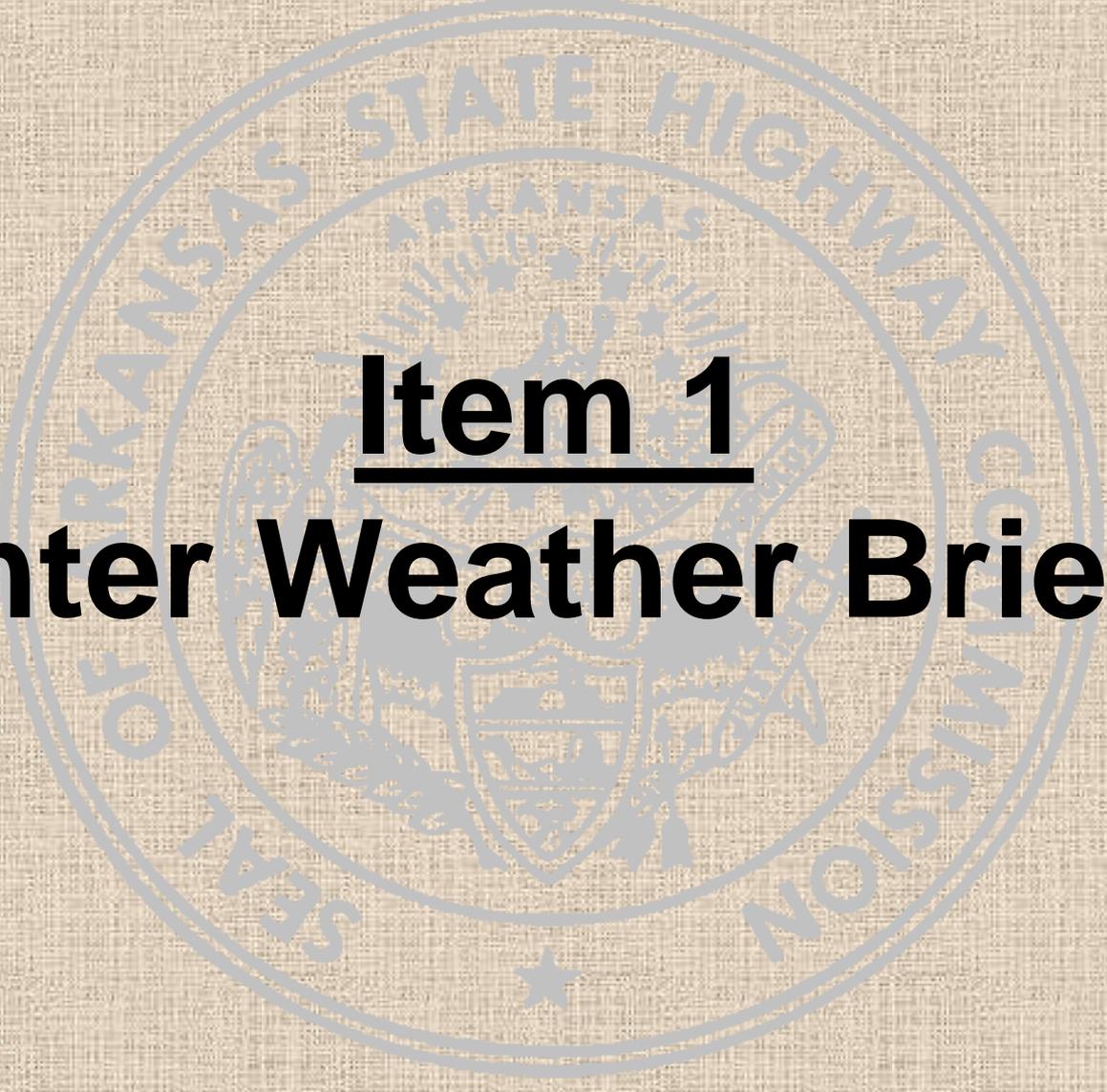


The background features a large, faint, circular seal of the Arkansas State Highway Commission. The seal contains the text "ARKANSAS STATE HIGHWAY COMMISSION" around the perimeter and a central emblem with a star and other symbols.

Arkansas State Highway Commission Meeting

Tuesday, March 11, 2014

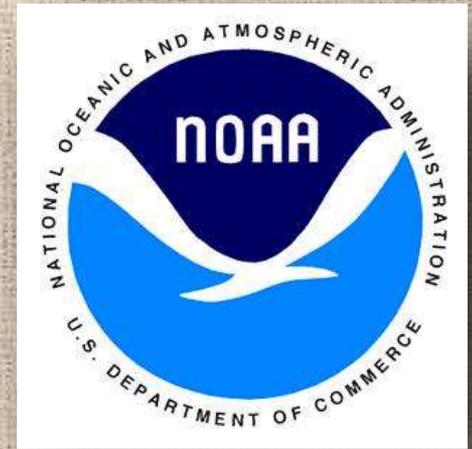
The background of the slide features a large, faint, circular seal of the Arkansas State Highway Commission. The seal contains the text "ARKANSAS STATE HIGHWAY COMMISSION" around the perimeter and a central emblem with a shield and a star.

Item 1

Winter Weather Briefing



Weather Forecast



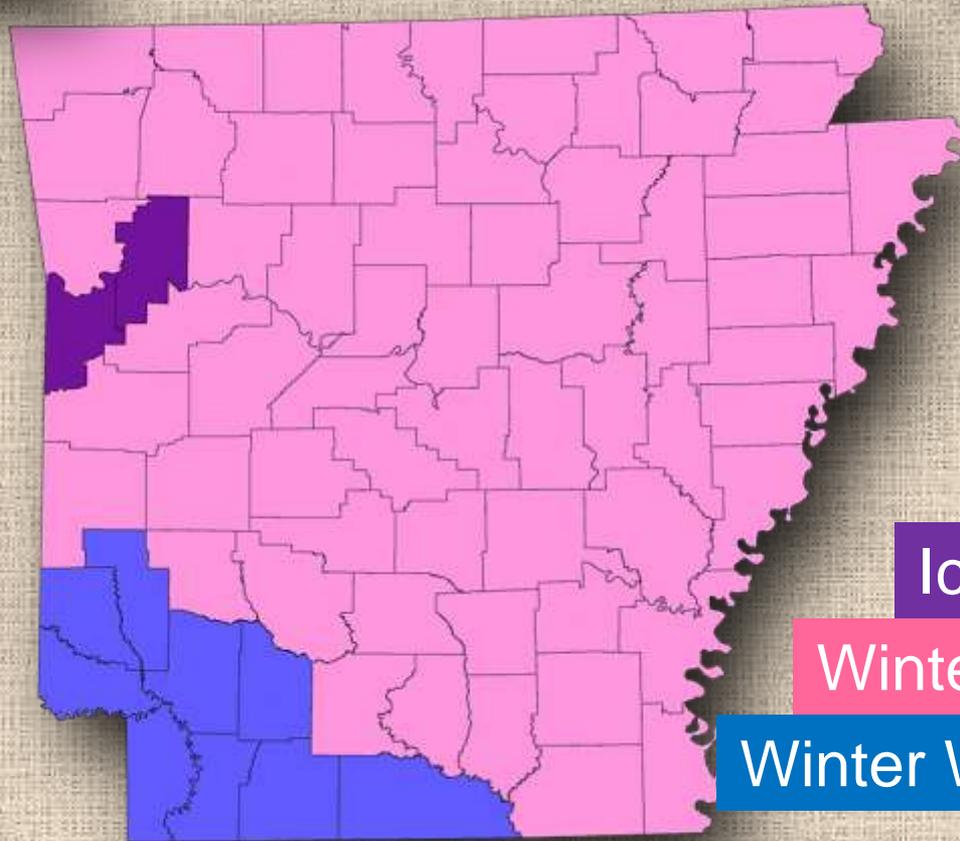
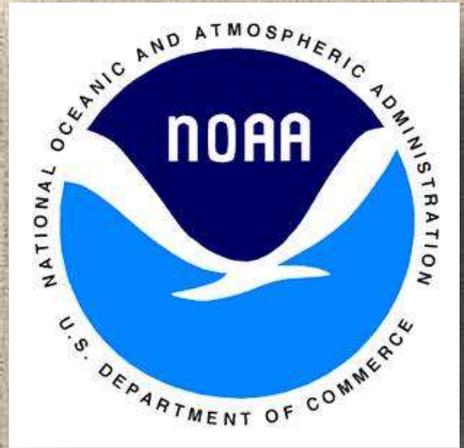
Wednesday: Good chance of wintry precipitation in northern Arkansas in the form of freezing rain and sleet Sunday night. Uncertain whether it will extend into central Arkansas. Rain only in south Arkansas.

Thursday: More certainty about icy precipitation in north Arkansas from midday Sunday, ending Monday morning. Possible freezing rain in central Arkansas for awhile Sunday night. Only rain in south Arkansas.

Friday: Winter Storm Watches for north Arkansas, greater probability of freezing precipitation in central Arkansas Sunday night, slight chance of freezing precipitation in south Arkansas late Sunday night.



Weather Advisories



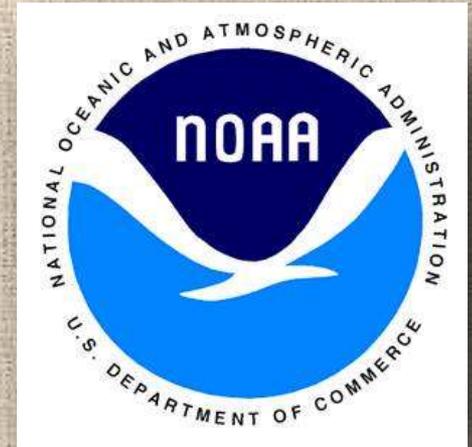
Ice Storm Warning

Winter Storm Warning

Winter Weather Advisory

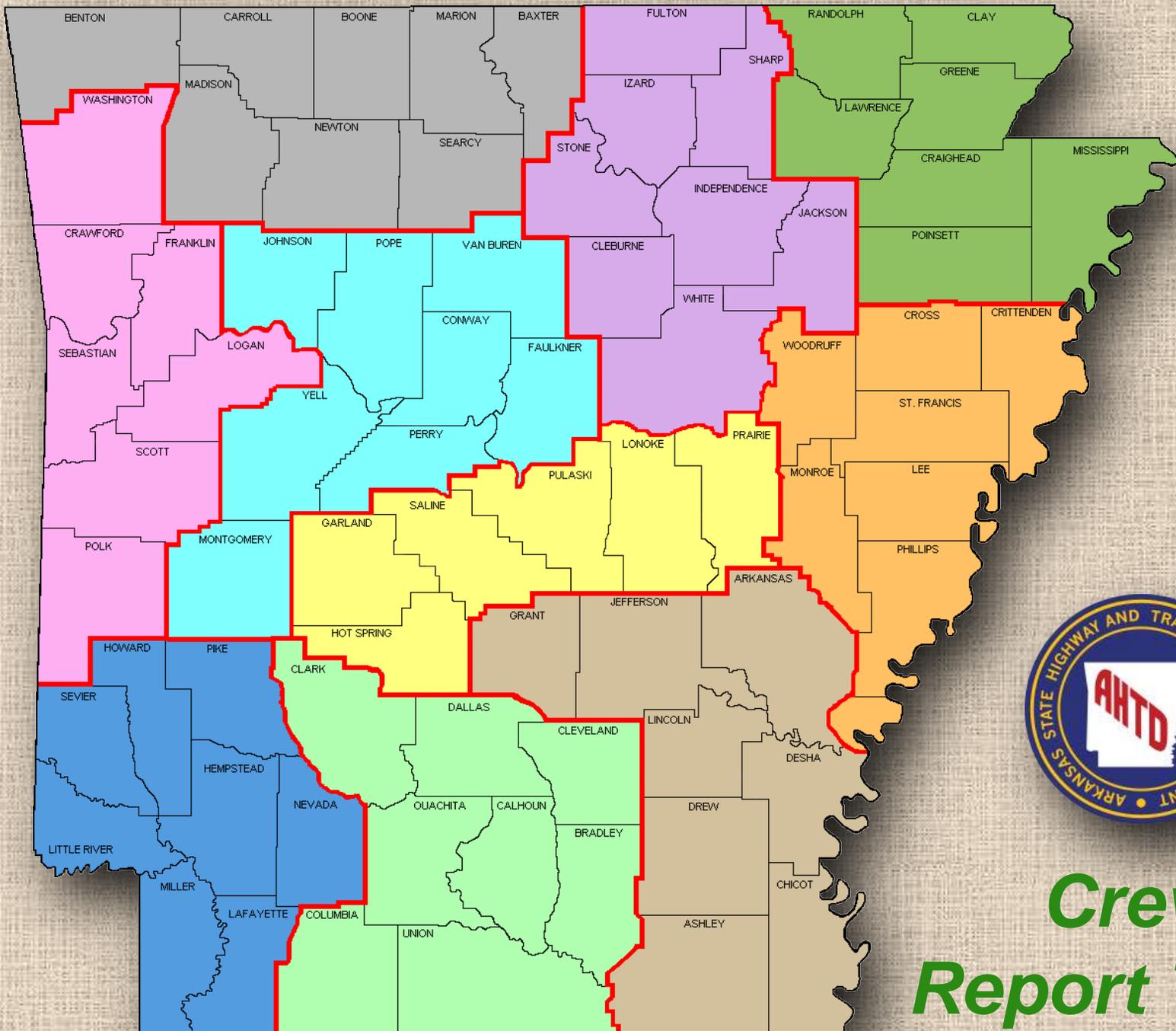


Weather Forecast

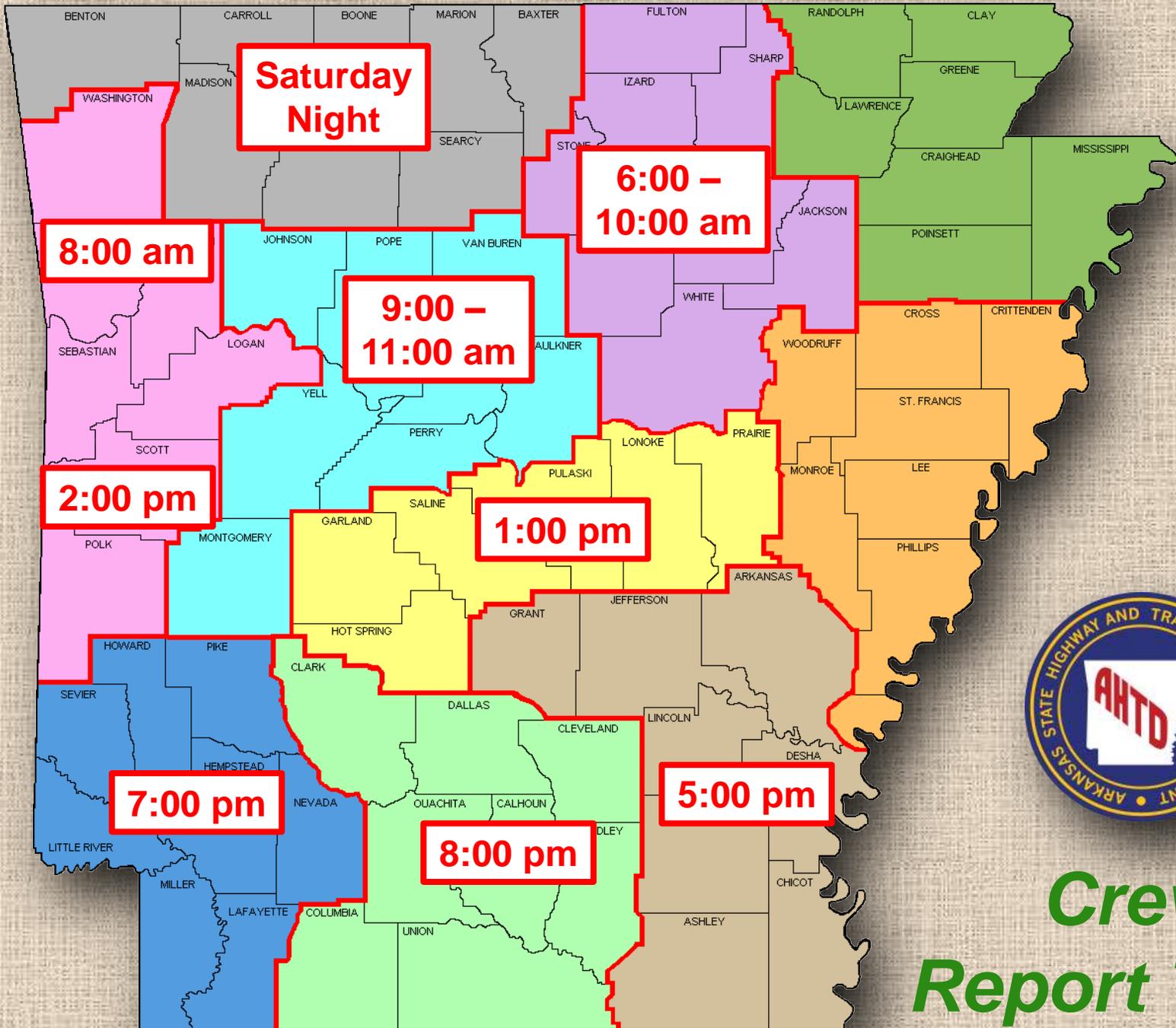


Saturday: “There is likely to be a band of heavy sleet, probably somewhere in the northern third of the state, where sleet could pile up 1 to 2 inches. This would be an unusually large amount.”

Sunday: “Amazingly low temperatures in all parts of the state for the next few days and nights.”



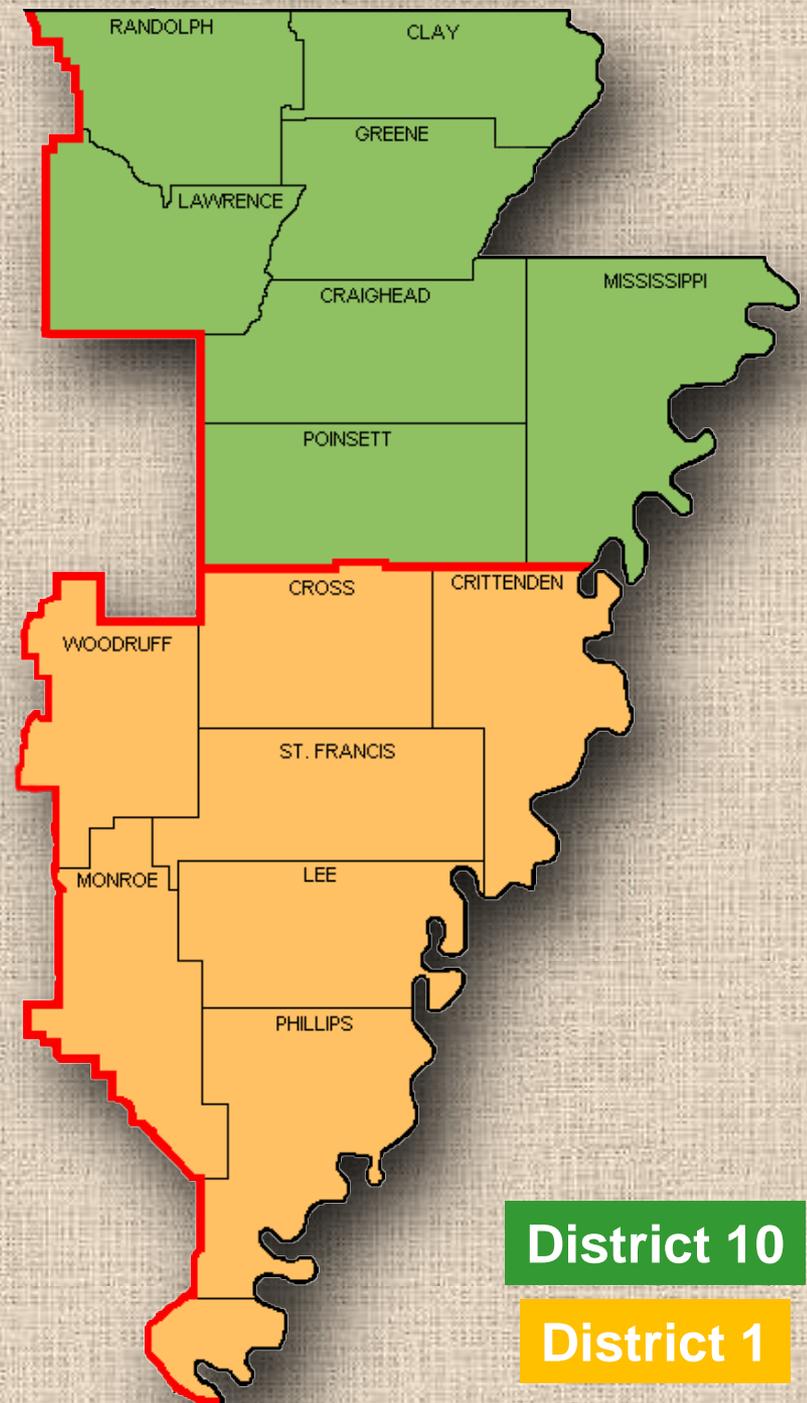
Crew Report Times



**Crew
Report Times**



County by County *Crew Report Times Sunday*

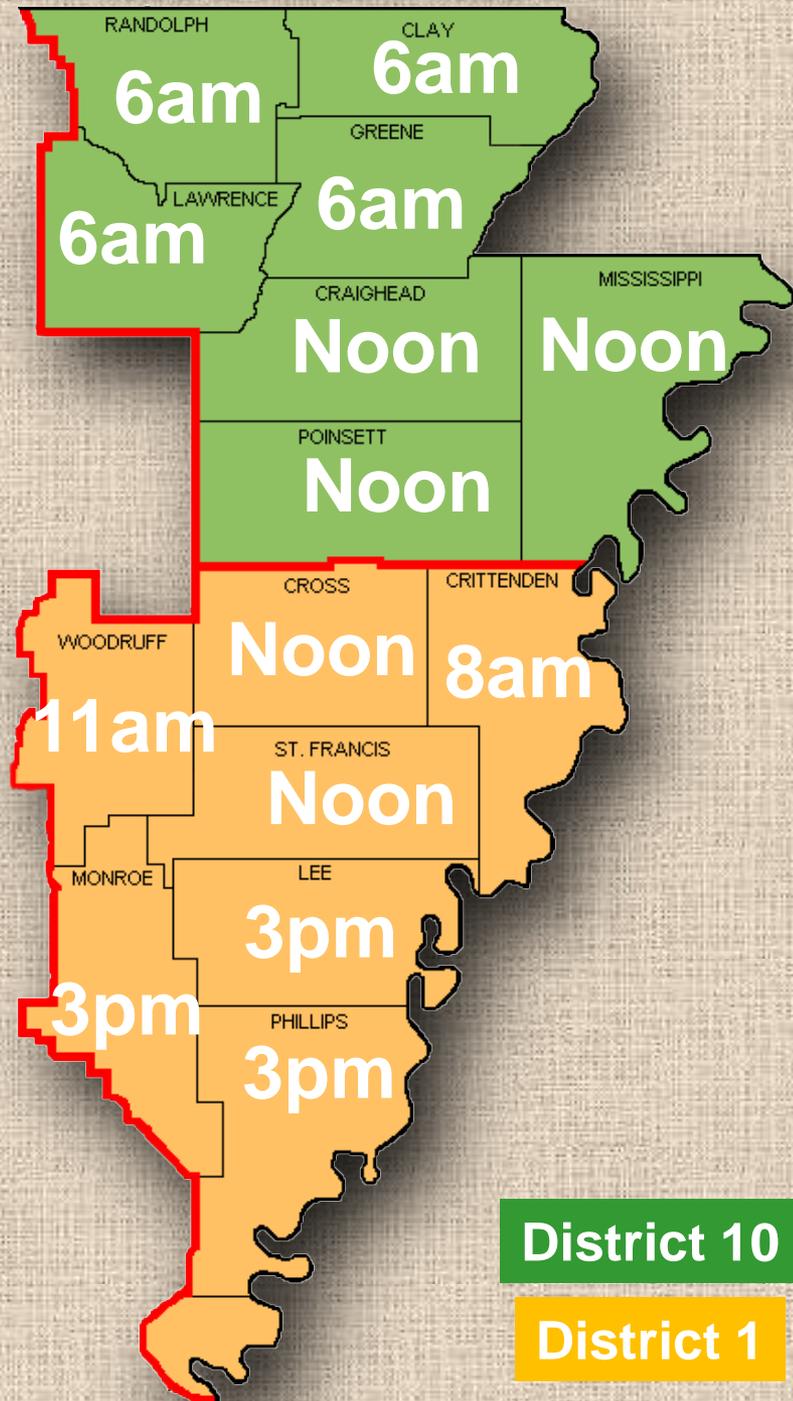


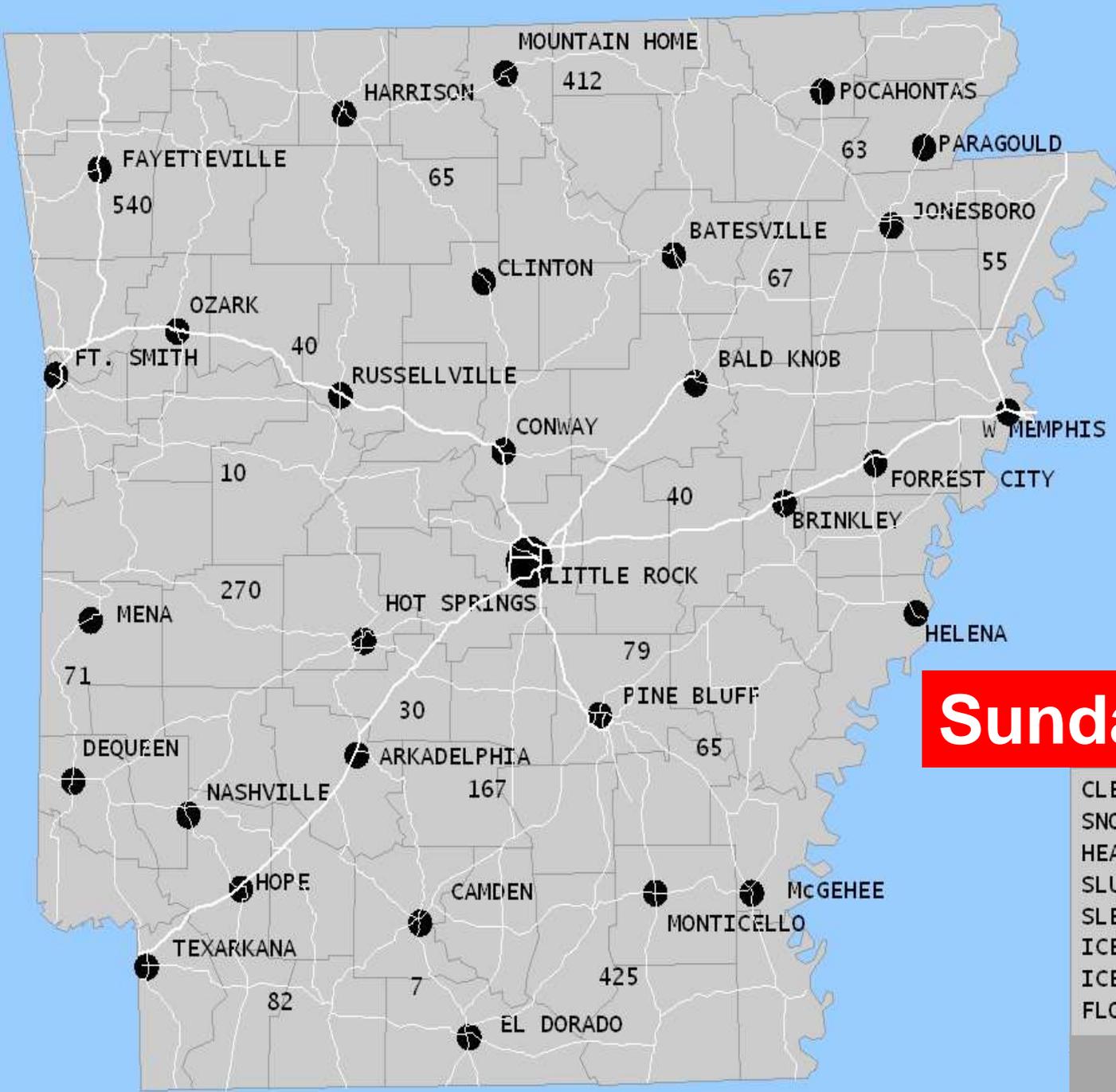
District 10

District 1



County by County Crew Report Times Sunday

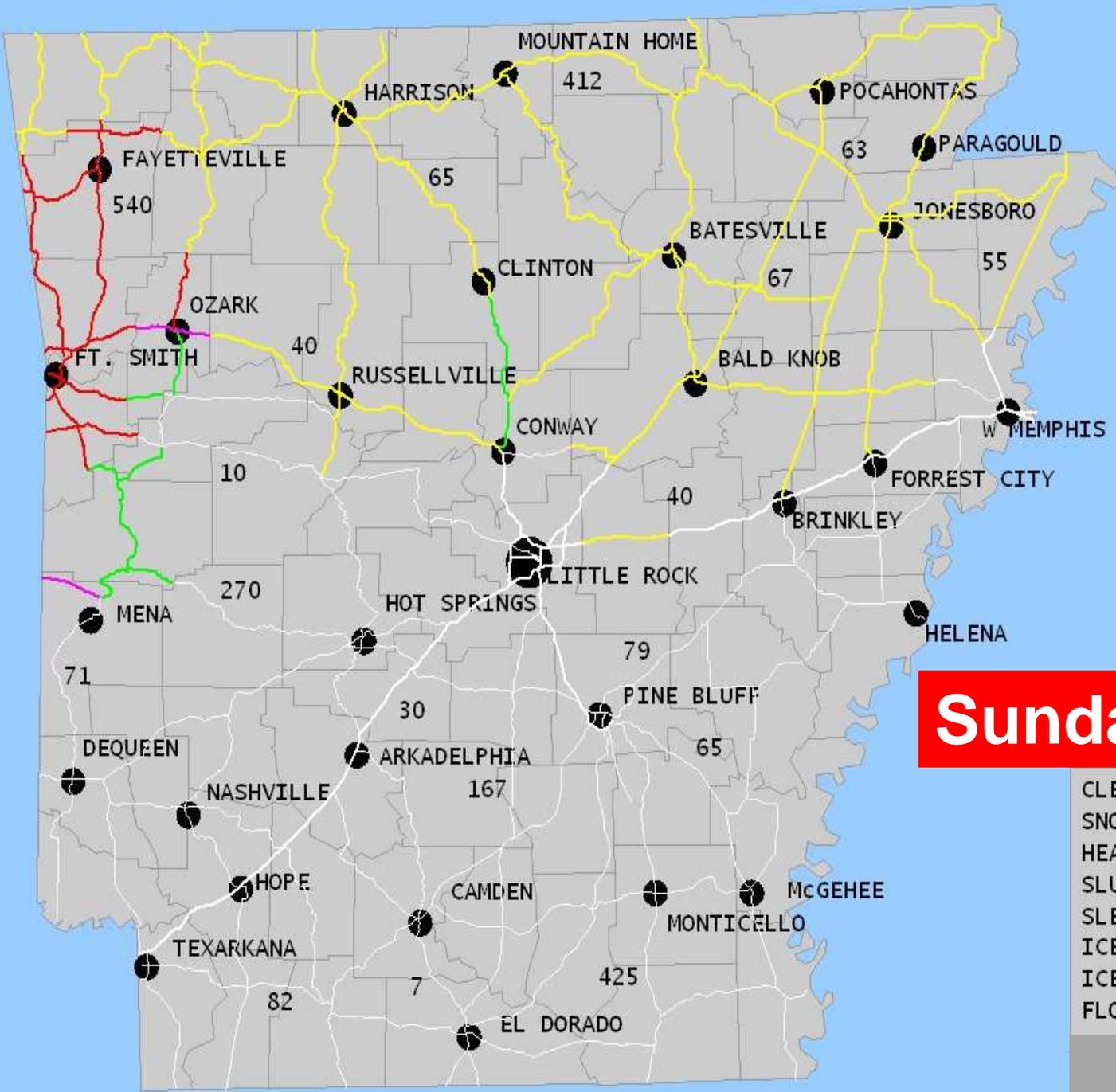




Road Conditions:
(501) 569-2374

Sunday 6:00 a.m.

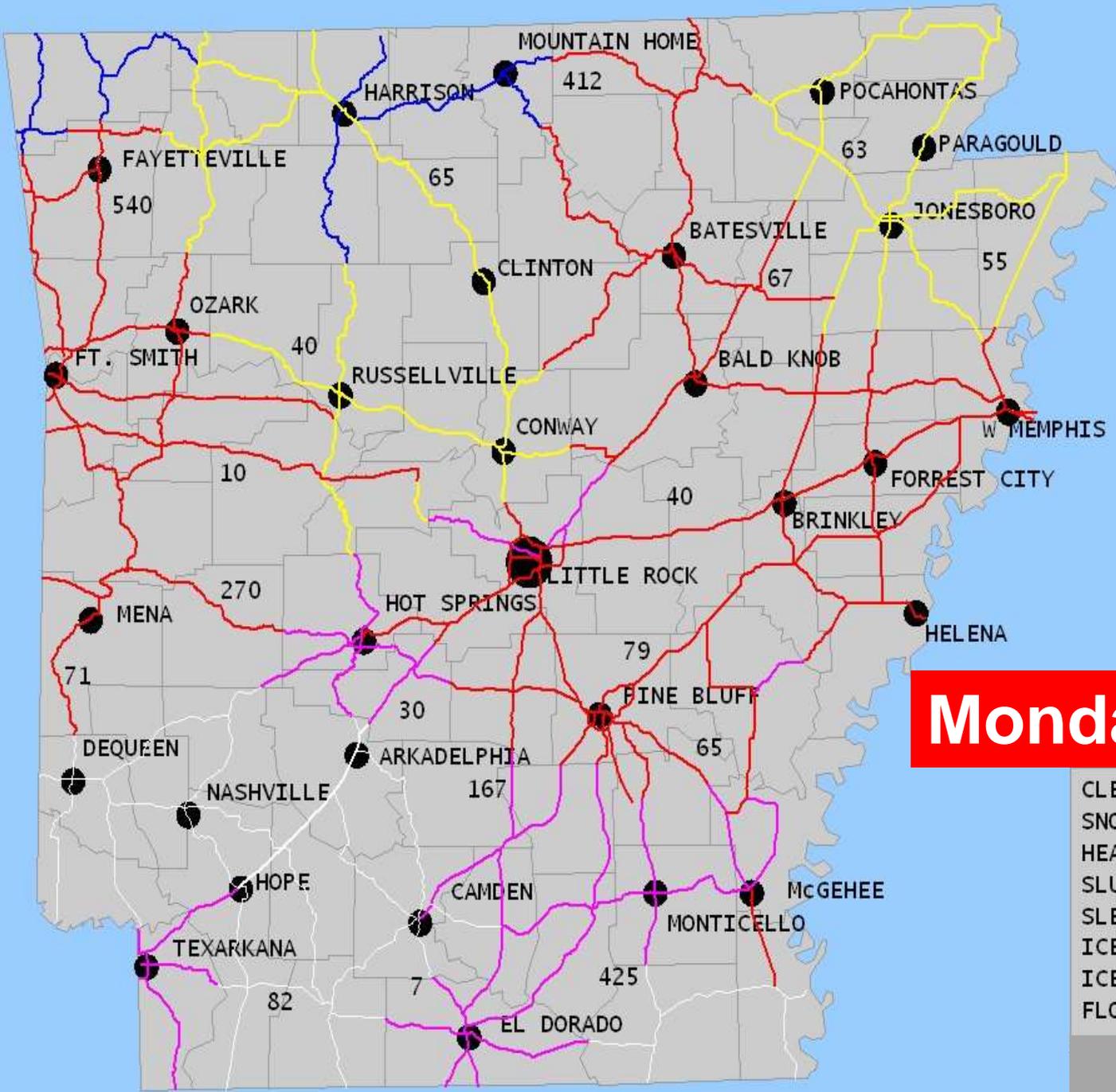
CLEAR	—
SNOW	—
HEAVY SNOW	—
SLUSH	—
SLEET	—
ICE	—
ICE PATCHES	—
FLOODED	—



Road Conditions:
(501) 569-2374

Sunday 6:00 p.m.

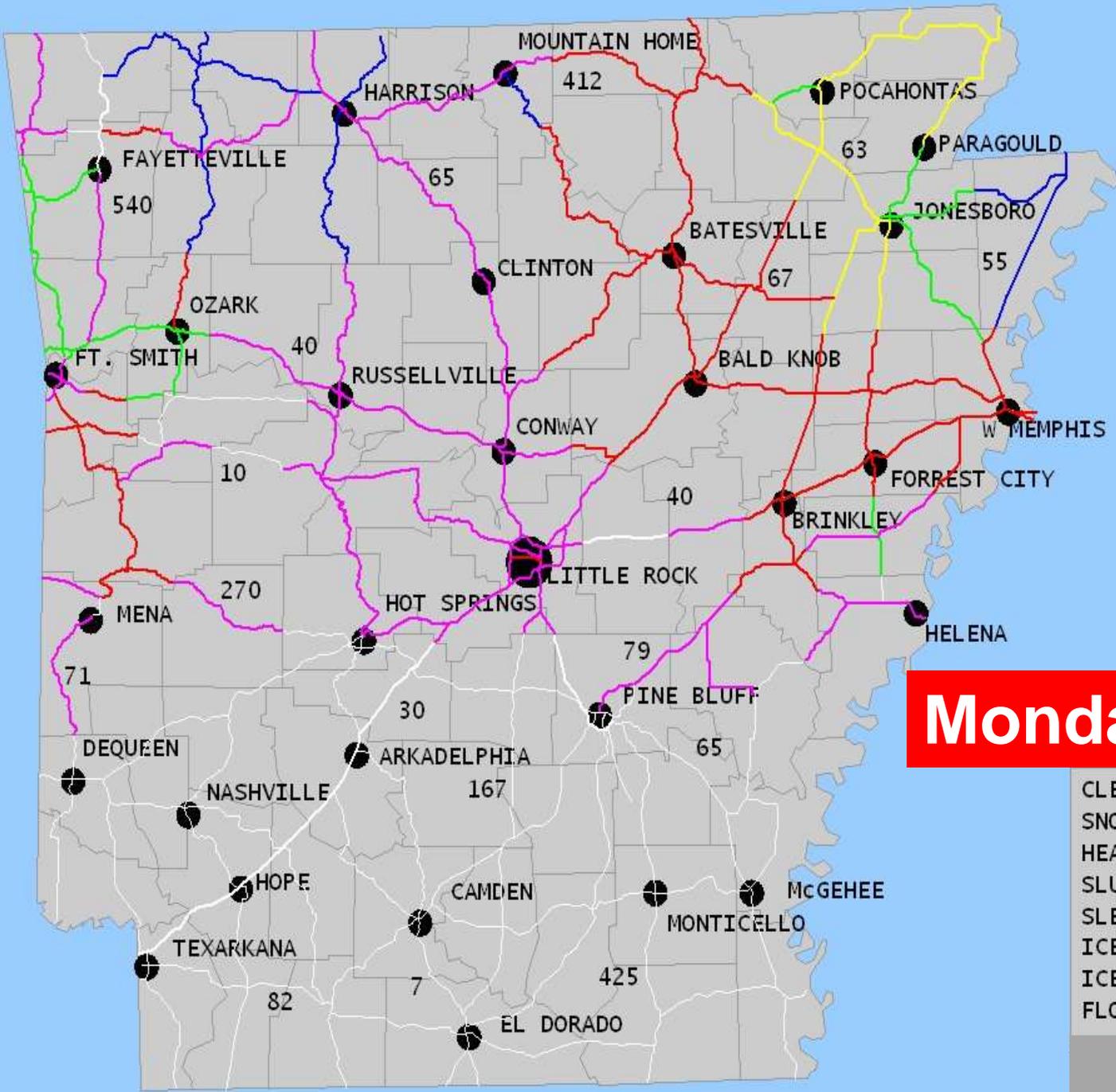
CLEAR	—
SNOW	—
HEAVY SNOW	—
SLUSH	—
SLEET	—
ICE	—
ICE PATCHES	—
FLOODED	—



Road Conditions:
(501) 569-2374

Monday 6:00 a.m.

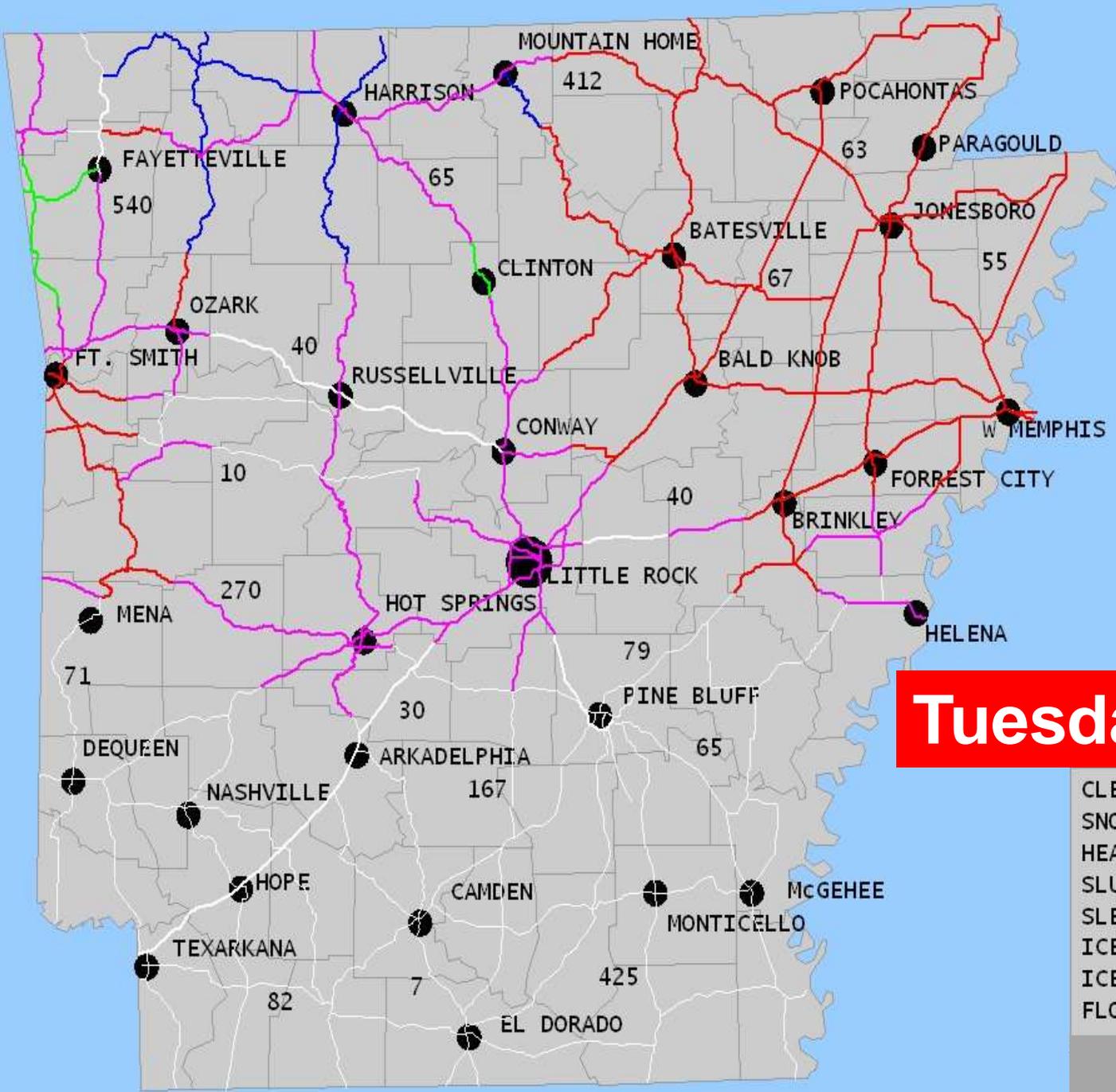
CLEAR	
SNOW	
HEAVY SNOW	
SLUSH	
SLEET	
ICE	
ICE PATCHES	
FLOODED	



Road Conditions:
(501) 569-2374

Monday 6:00 p.m.

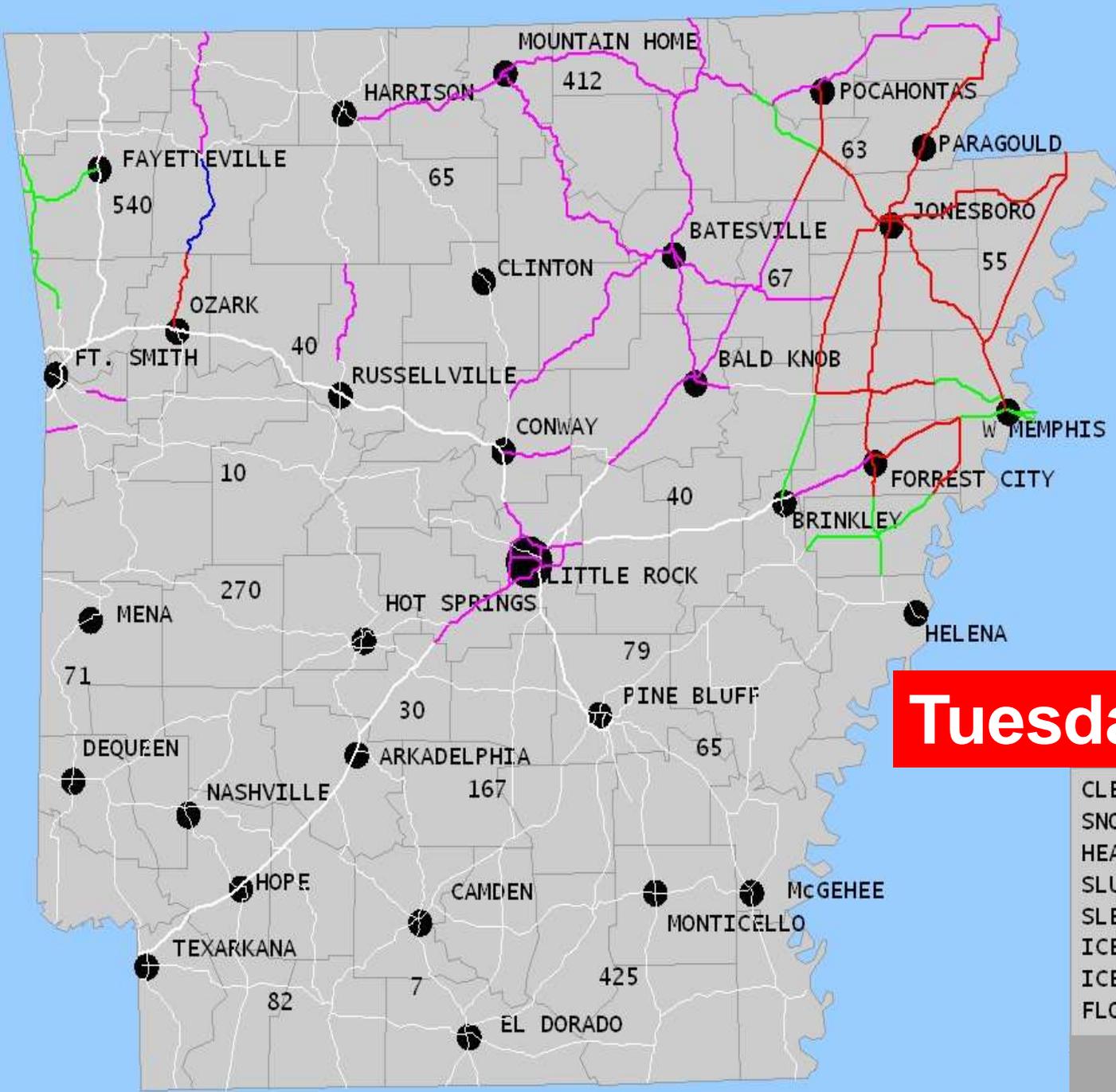
CLEAR	—
SNOW	—
HEAVY SNOW	—
SLUSH	—
SLEET	—
ICE	—
ICE PATCHES	—
FLOODED	—



Road Conditions:
(501) 569-2374

Tuesday 6:00 a.m.

CLEAR	
SNOW	
HEAVY SNOW	
SLUSH	
SLEET	
ICE	
ICE PATCHES	
FLOODED	

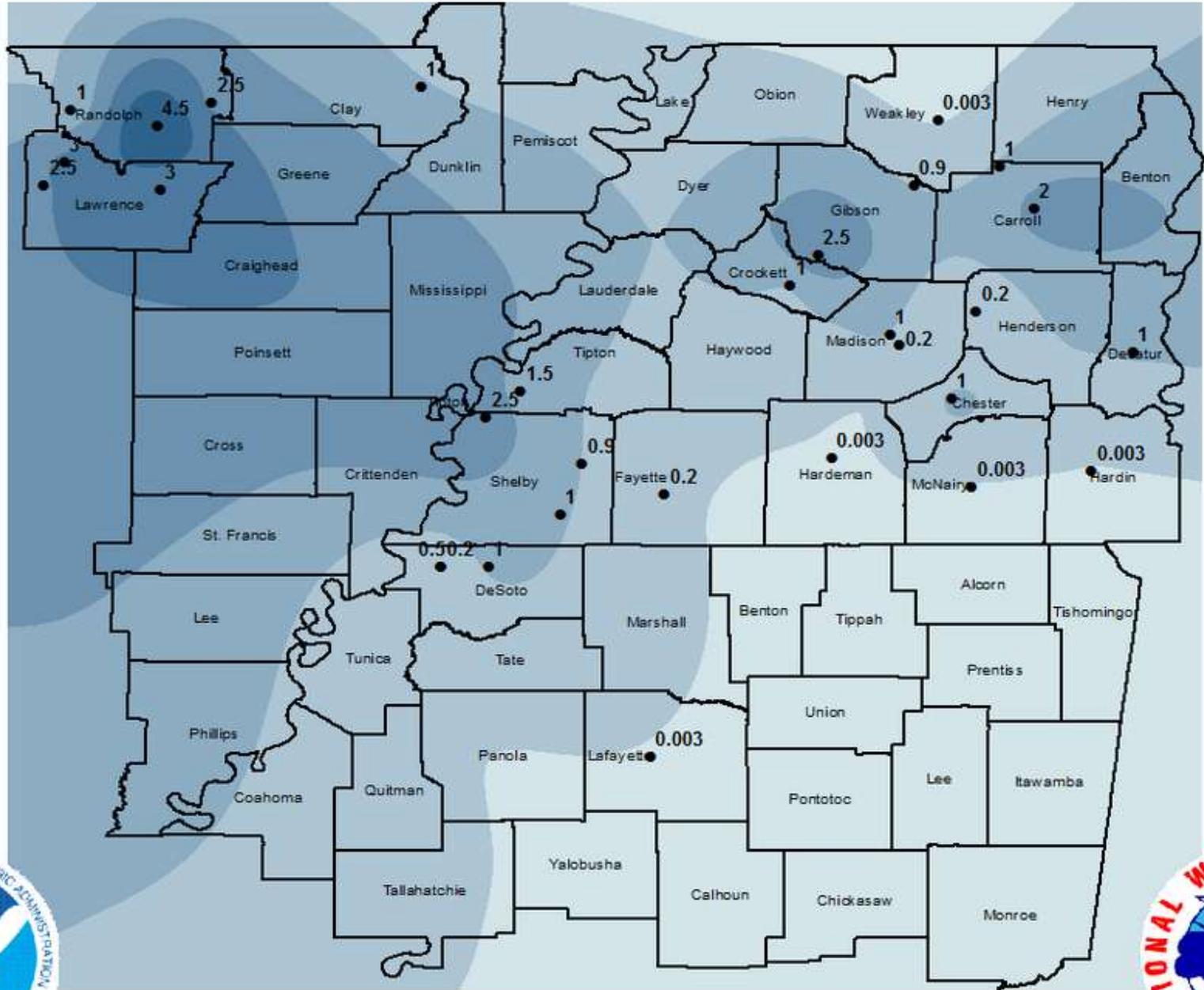


Road Conditions:
(501) 569-2374

Tuesday 6:00 p.m.

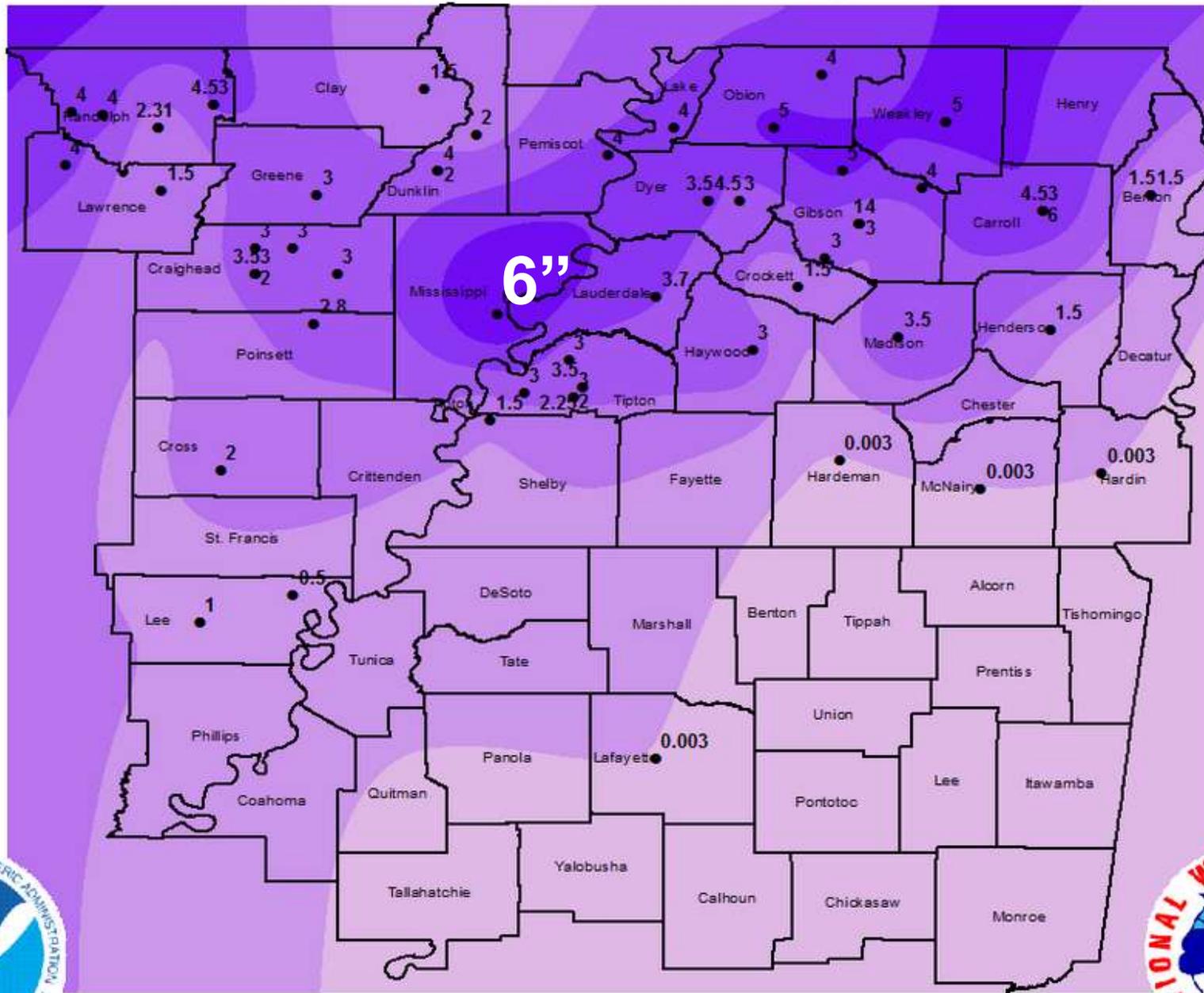
CLEAR	
SNOW	
HEAVY SNOW	
SLUSH	
SLEET	
ICE	
ICE PATCHES	
FLOODED	

Total Snowfall Accumulation :: March 2 - 3, 2014



This preliminary map was created by the National Weather Service Office in Memphis, Tennessee using reports from Emergency Managers, COOP Observers, and members of the public.

Total Sleet Accumulation :: March 2 - 3, 2014



This preliminary map was created by the National Weather Service Office in Memphis, Tennessee using reports from Emergency Managers, COOP Observers, and members of the public.



Sunday

- 6:23 a.m. – 36 degrees and light rain in Jonesboro.
- 11:39 a.m. – Randolph Co. ice issues, one accident.
- 3:24 p.m. – Icy conditions on several highways.
Nothing on 40 or 55 in east or northeast Arkansas.
- 8:21 p.m. – Ice on Interstates 40 & 55, including W. Memphis.
- 9:58 p.m. – 6 inches of snow and ice on I-55.
- 10:59 p.m. – I-55 getting worse in Miss County. Very deep sleet & ice. Traffic moving slowly. Tow trucks unable to move on sleet.



Monday

- 12:33 a.m. – I-55 8mm shut down, vehicles stuck.
- 1:51 a.m. – I-55 in Miss Co. covered with several inches of sleet. Very dangerous. Plows having trouble.
- 2:21 a.m. – I-40 east truck stuck on Missouri St. Overpass.
- 4:50 a.m. – Vehicles moving on Missouri St. Overpass
- 6:42 p.m. – I-55 in Miss Co. shut down at 41 mm.
Multiple accidents. Multiple trucks need removal.
- 10:13 p.m. – I-55 covered in ice. Traffic at standstill.
Accidents at 41 and 36 mm.
- 11:06 p.m. – NB I-55 at 41mm re-opened.



Tuesday

- 1:36 a.m. – I-55 in Miss Co. NB & SB moving from 55 mm. Waking truckers.
- 3:12 a.m. – Semi broke down on I-55 SB at 48 mm within construction zone.
- 3:36 a.m. – I-55 SB shutdown as wrecker removes semi.
- 4:23 a.m. – I-55 SB traffic shutdown again north of 48 mm. Semi jackknifed and stuck. Another one at 51mm. We are out of wreckers. One coming from J-boro.
- 5:49 a.m. – I-55 shutdown from Missouri.



Tuesday

- 9:29 a.m. – I-55 NB & SB slowly moving in Miss. County. Numerous vehicles in ditches.
- 10:00 a.m. – AHTD enlists help from contractor on I-55. AHTD & contractor work through const. zone.
- 11:25 a.m. – Governor enlists help from National Guard.
- 11:37 a.m. – I-40 WB at 267mm overturned tractor trailer.
- 12:42 p.m. – MO & TN close I-155 from Hayti to Dyersburg due to six inches of ice on the highway.
- 1:06 p.m. – MODOT: We have I-55 SB and I-155 EB closed. All traffic is forced back north or west in Missouri.



Tuesday

- Afternoon – AHTD sends crews from Pine Bluff to Forrest City and Little Rock to West Memphis.
- 2:41 p.m. – I-40 WB 250mm at dead stop.
- 5:40 p.m. – I-55 NB & SB Traffic slow and stopping in Miss. Co. 1 lane passable from Missouri to Burdette.
- 5:41 p.m. – I-40 at 248 mm in St. Francis Co. shutdown as AHTD works on bridges.
- 6:00 p.m. – Trucks stuck in both directions on Hwy 148 overpass near Burdette. Wreckers called. Arrived at 9:00 p.m. Trucks removed by 10:00 p.m.



Tuesday

- 5:26 p.m. – I-40 EB & WB back open.
- 10:24 p.m. – One lane blocked at I-40 WB at 166 mm in St. Francis County due to overturned semi.
- 11:13 p.m. – I-55 NB at 21mm at a standstill.

Wednesday

- 1:48 a.m. – I-55 open in both directions. Traffic moving.
- 4:43 a.m. – I-40 WB at 166mm moving after truck is removed.
- 4:57 a.m. – I-55 N of 21mm looks good. Waking truckers.
- Afternoon – AHTD sends crews from Batesville to Osceola.

Ice Removal Costs



Annual Snow & Ice *Removal Costs*

Year	Amount
2014	\$18,064,699.90
2013	\$4,983,550.96
2012	\$1,612,364.18
2011	\$12,319,883.30
2010	\$11,572,338.88
2009	\$6,115,738.51
2008	\$4,750,376.87



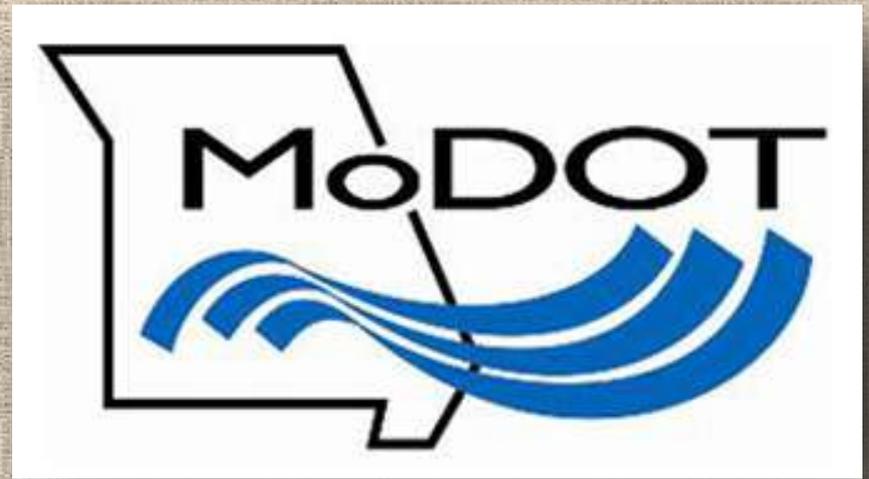
- ✓ Crews were sent from Sikeston and Kewanee areas to work solely on I-55 from Hayti south.
- ✓ 8 belly plow trucks with 14' front plows and 12 cubic yard spreaders were dedicated to the 30 miles north of the state line. These trucks did not work any other highways.



- ✓ Missouri had one truck for every 15 lane miles on that section of Interstate 55.
- ✓ Missouri's volume of equipment and materials allowed them to hit a given location once every 36 minutes.
- ✓ It took Missouri 31 hours to clear Interstate 55.

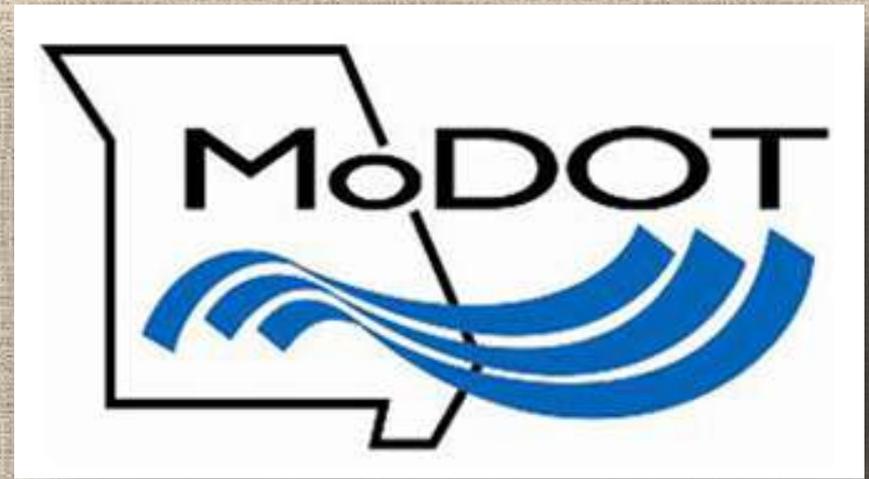


- ✓ We have a total of 8 trucks in Mississippi County
- ✓ None of the trucks have belly plows
- ✓ 8 trucks responsible for 418 lane miles
- ✓ That equates to 52 lane miles per truck
- ✓ With trucks and area of responsibility, we could only hit a given area once every 125 minutes



In comparison:

- ✓ There are 46 counties in Missouri's southern two highway districts that border Arkansas
- ✓ They have 570 belly plows those two districts
- ✓ Arkansas has almost 700 trucks statewide, BUT
- ✓ Arkansas only has 6 belly plows



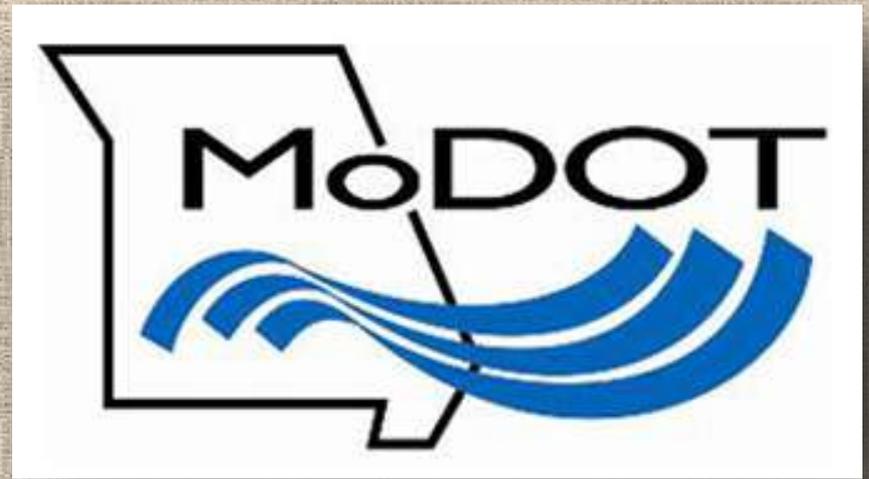
In comparison:

- ✓ **Missouri has 5100 employees**
- ✓ **Arkansas has 3600 employees**
- ✓ **Missouri receives \$20,000 more revenue per mile**
- ✓ **Missouri's annual budget is \$2.8 billion**
- ✓ **Arkansas' annual budget is \$1.0 billion**



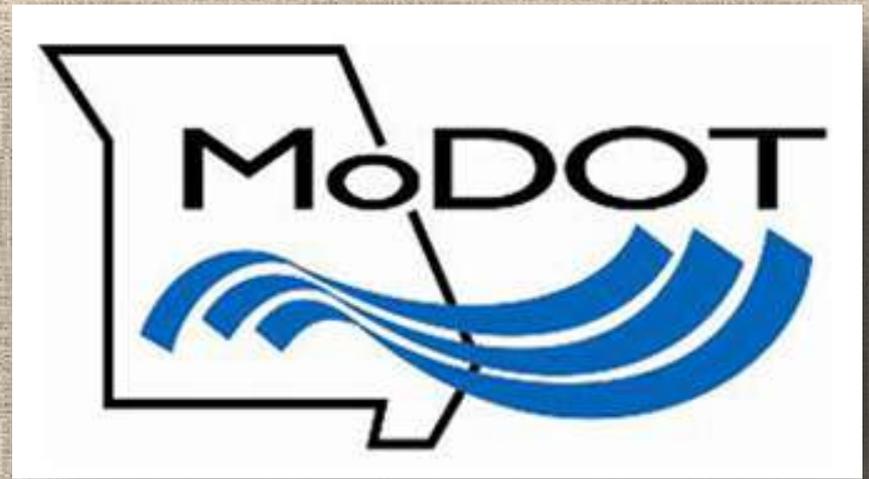
New Belly Plow





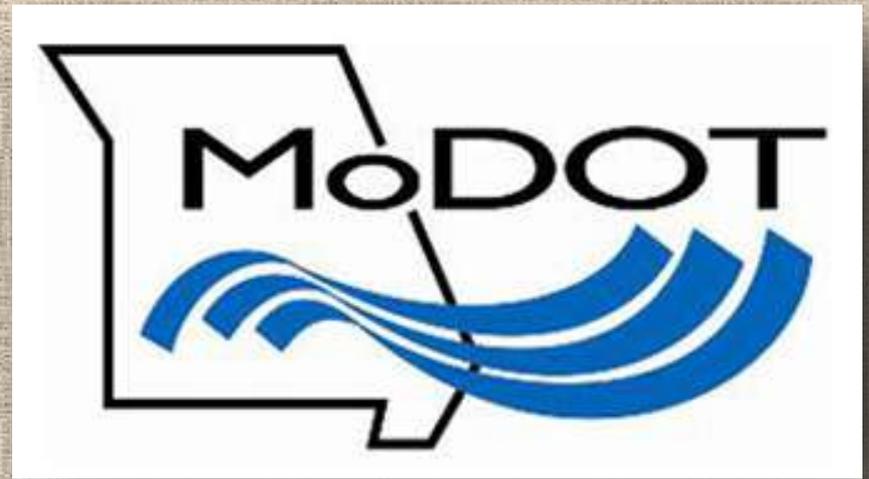
In comparison:

- ✓ Missouri belly plows have spreaders that are operated and calibrated from cab
- ✓ Arkansas spreaders are turned on and off at rear of truck
- ✓ Missouri has 1,250 people to operate plows in south
- ✓ Arkansas has 1,400 people available statewide



What we have learned from meeting

- ✓ Missouri has comprehensive snow & ice removal plan
- ✓ Goal is to clear highways in as short a time as possible after precipitation ends
- ✓ Must be aggressive early to stay ahead of storm
- ✓ Publicize A, B, and C routes and clear them in that order
- ✓ A = Continuous Operation Routes (ADT's above 2,500)
- ✓ B = Non-Continuous Operation Routes
- ✓ C = Cleared after A & B Routes

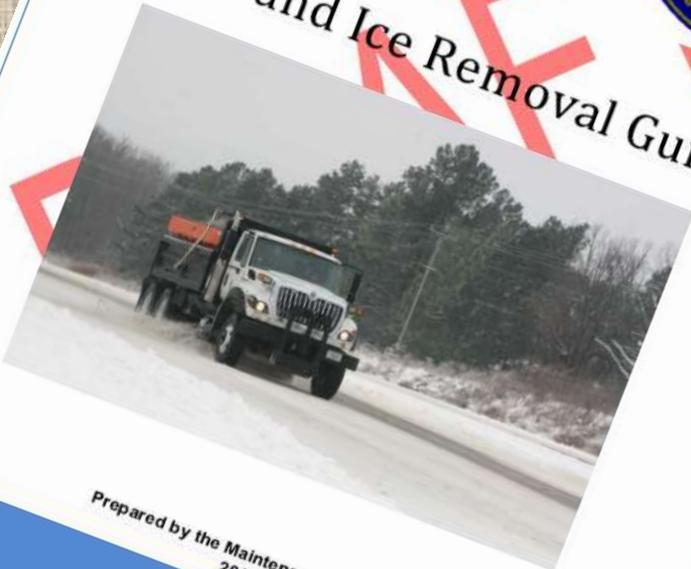


What we have learned from meeting

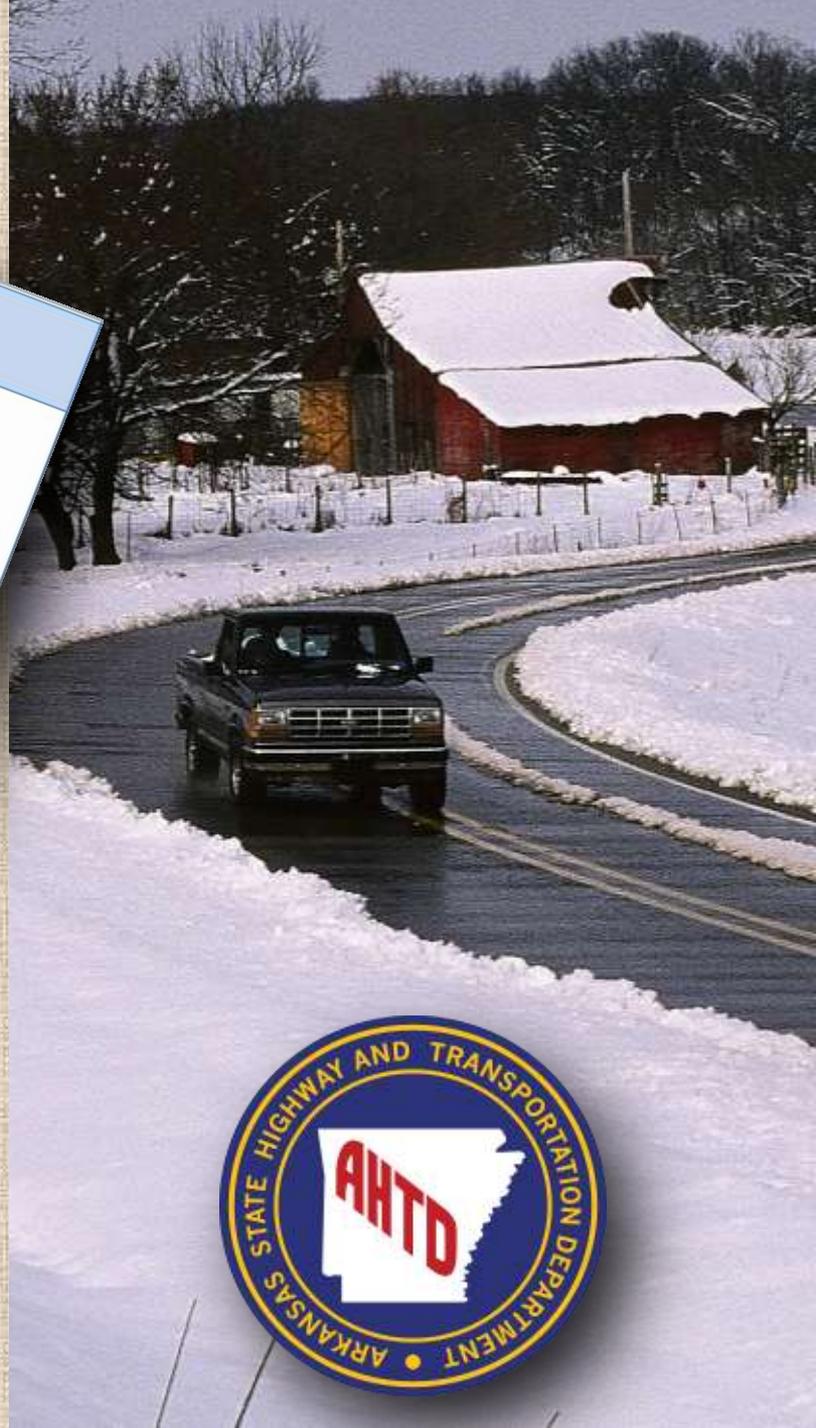
- ✓ **Aggressive in moving people and equipment**
- ✓ **Use greater amounts of salt (often use it straight)**
- ✓ **Salt is pre-treated with beet juice**
- ✓ **Private weather service provides hourly forecasts**
- ✓ **Workers below a Resident Engineer can drive plow**
- ✓ **Hire seasonal employees during winter months**
- ✓ **Statewide snow drill in early November**



Snow and Ice Removal Guide



Prepared by the Maintenance Division
2014



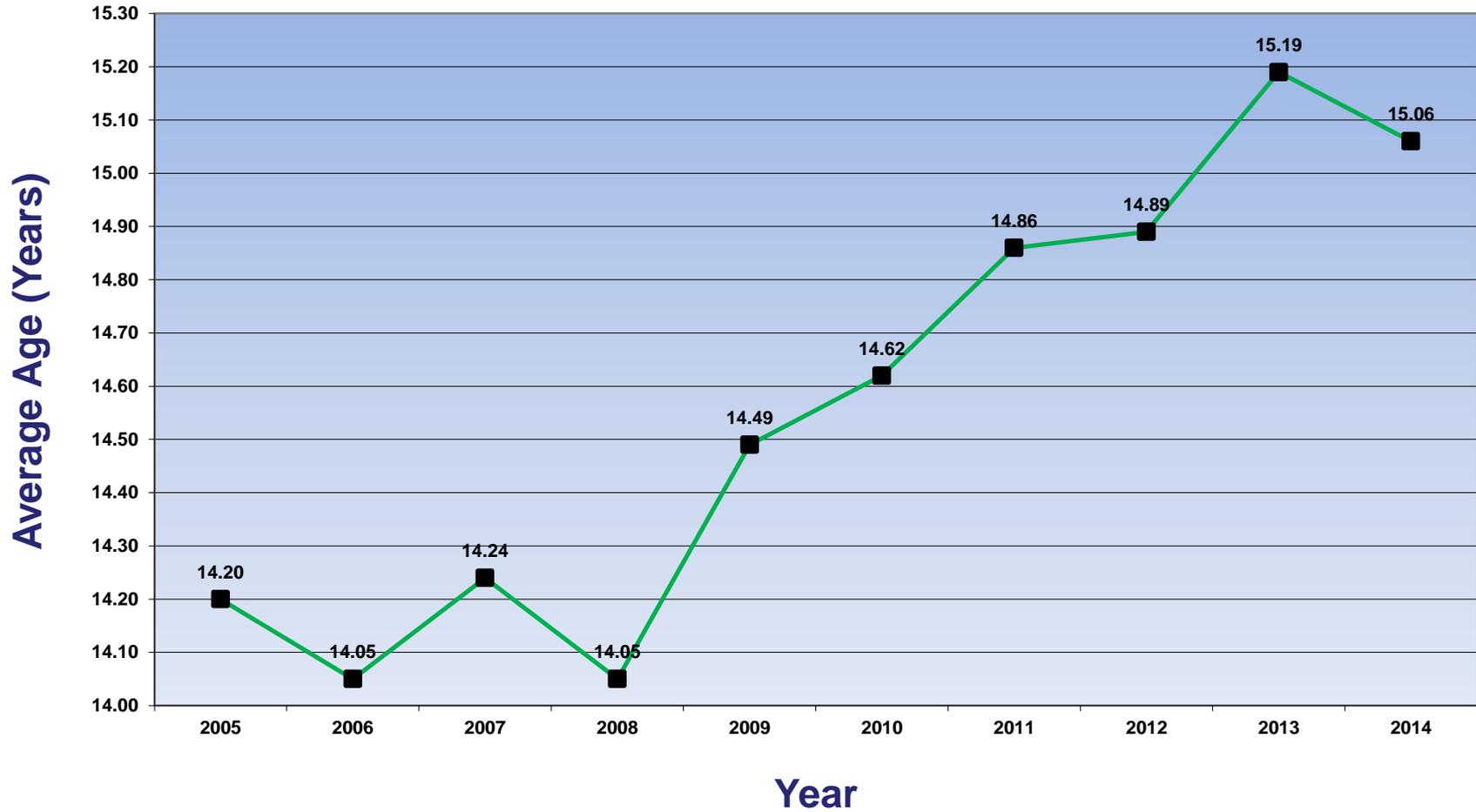


Snow & Ice Removal Guide

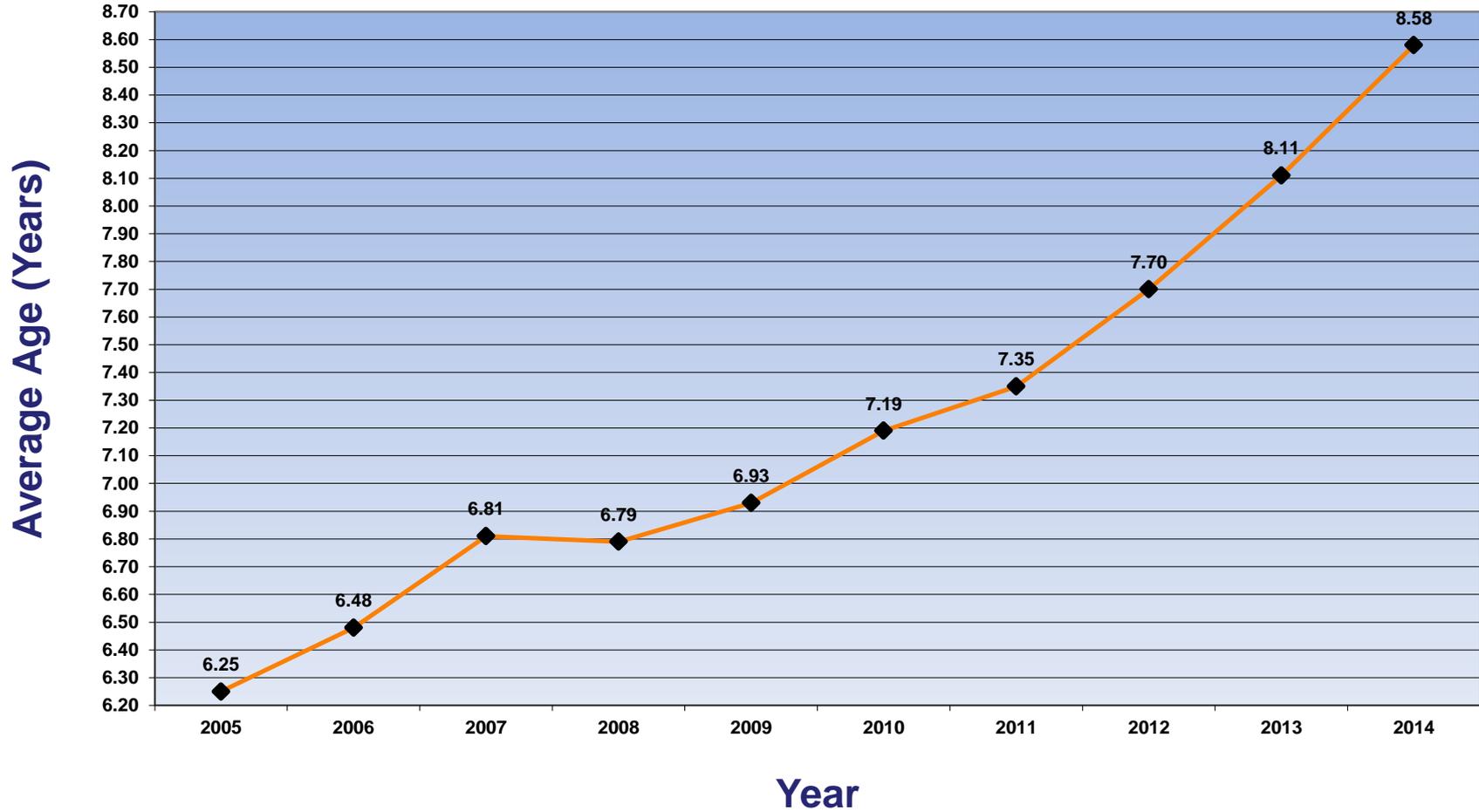
Implementation Needs

	Trucks	Plows	Spreaders	Salt	Personnel
Needed for Implementation	614	614	614	32,000 tons per storm	1750
Current Inventory	692*	362	420	TBD	1400
Balance of Needs	TBD	252	194	TBD	350

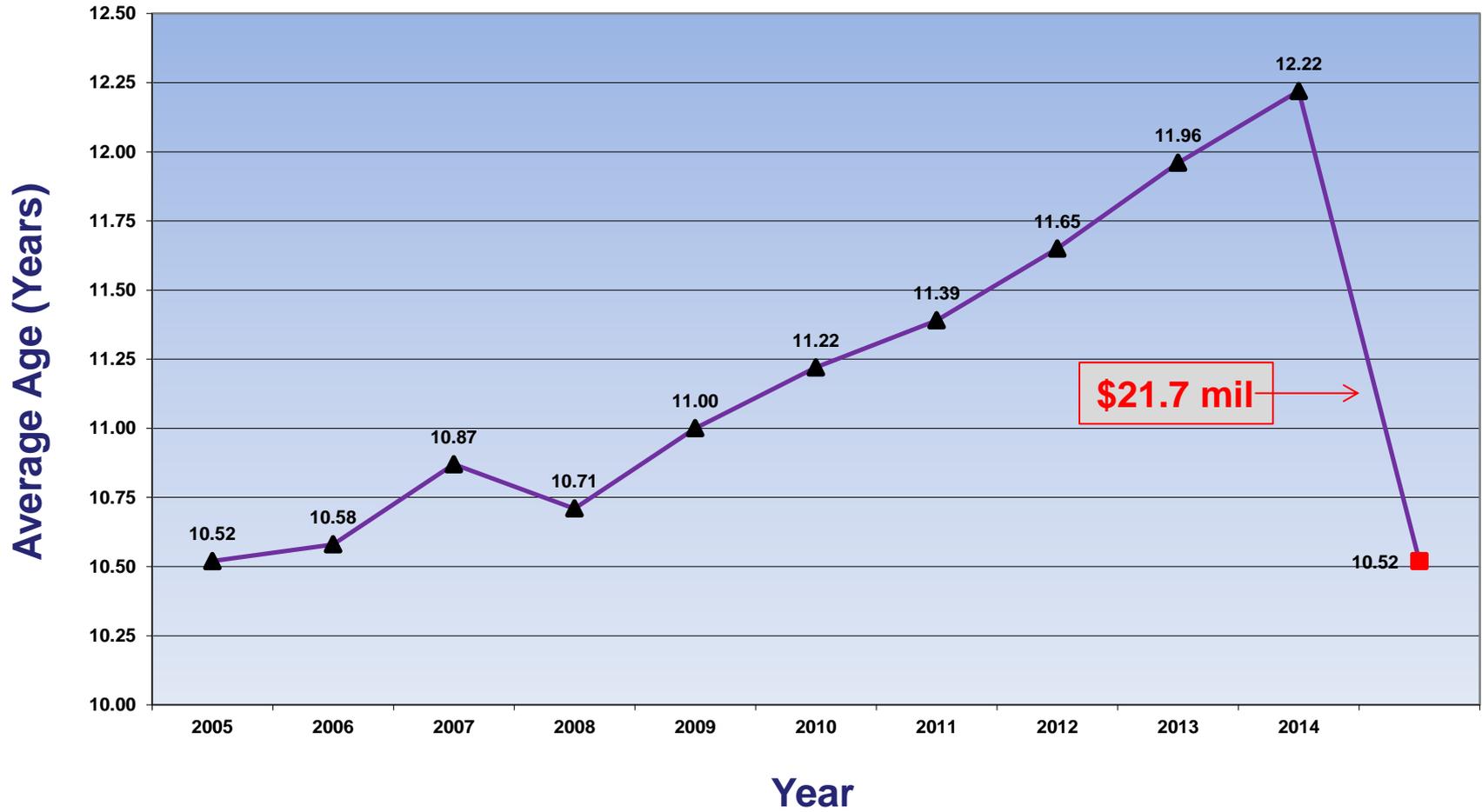
Average Age of AHTD Off-Road Equipment



Average Age of AHTD On-Road Equipment



Average Age of AHTD Equipment Fleet



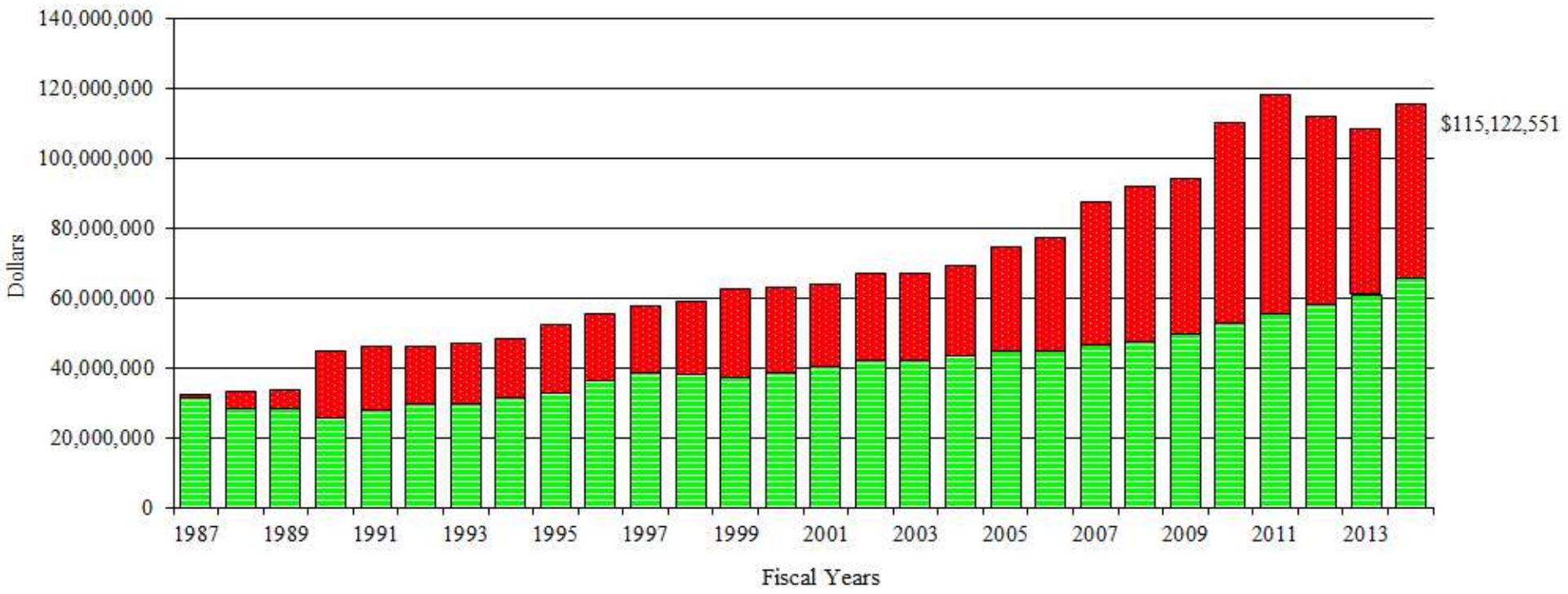
Maintenance Budget *Allotments vs. Needs*

	Normal	Difference	Normal	
Years	Maintenance Expense Allotted	Between Allotment & Requested	Maintenance Expense Request	Percentage of Previous Year
1985	\$25,887,000	0	\$25,887,000	
1986	\$28,512,000	0	\$28,512,000	
1987	\$31,328,000	\$1,014,357	\$32,342,357	9.88
1988	\$28,181,750	\$5,005,930	\$33,187,680	-10.04
1989	\$28,185,000	\$5,346,294	\$33,531,294	0.01
1990	\$25,355,000	\$19,241,316	\$44,596,316	-10.04
1991	\$27,800,000	\$18,063,518	\$45,863,518	9.64
1992	\$29,672,000	\$16,400,070	\$46,072,070	6.73
1993	\$29,672,000	\$17,322,530	\$46,994,530	0.00
1994	\$31,157,000	\$16,970,228	\$48,127,228	5.00
1995	\$32,841,000	\$19,313,996	\$52,154,996	5.40
1996	\$36,036,500	\$19,439,291	\$55,475,791	9.73
1997	\$38,561,000	\$18,821,219	\$57,382,219	7.01
1998	\$38,129,079	\$20,860,224	\$58,989,303	-1.12
1999	\$37,010,788	\$25,270,469	\$62,281,257	-2.93

Maintenance Budget *Allotments vs. Needs*

	Normal	Difference	Normal	
Years	Maintenance Expense Allotted	Between Allotment & Requested	Maintenance Expense Request	Percentage of Previous Year
2000	\$38,647,500	\$24,164,934	\$62,812,434	4.42
2001	\$40,145,041	\$23,489,894	\$63,634,935	3.87
2002	\$42,203,050	\$24,620,204	\$66,823,254	5.13
2003	\$42,152,250	\$24,758,551	\$66,910,801	-0.12
2004	\$43,498,547	\$25,598,219	\$69,096,766	3.19
2005	\$44,860,153	\$29,627,850	\$74,488,003	3.13
2006	\$44,860,153	\$32,039,114	\$76,899,267	0.00
2007	\$46,603,160	\$40,896,979	\$87,500,139	3.89
2008	\$47,540,096	\$44,016,576	\$91,556,672	2.01
2009	\$49,507,000	\$44,386,930	\$93,893,930	4.14
2010	\$52,477,420	\$57,691,234	\$110,168,654	6.00
2011	\$55,399,000	\$62,667,141	\$118,066,141	5.57
2012	\$58,168,950	\$53,522,275	\$111,691,225	5.00
2013	\$61,078,500	\$47,068,470	\$108,146,970	5.00
2014	\$65,353,995	\$49,768,556	\$115,122,551	7.00

Maintenance Budget *Allotments vs. Needs*



Allotted Needs

Lessons Learned

- ✓ Communications from roadway to districts & Administration must improve
- ✓ Be more aggressive in moving equipment & personnel
- ✓ Be more aggressive when considering closing major highways

Lessons Learned

- ✓ Require cross-training of employees so more can operate snow plows
- ✓ Major highways are priority, but secondary roads can't be neglected
- ✓ Extended cold temps will complicate a manageable snow & ice event

Lessons Learned

- ✓ There is no magic potion:
 - Beet Juice
 - Potato Mash
 - Salt
 - Salt Brine
 - Calcium Chloride
- ✓ It takes muscle (equipment & people)



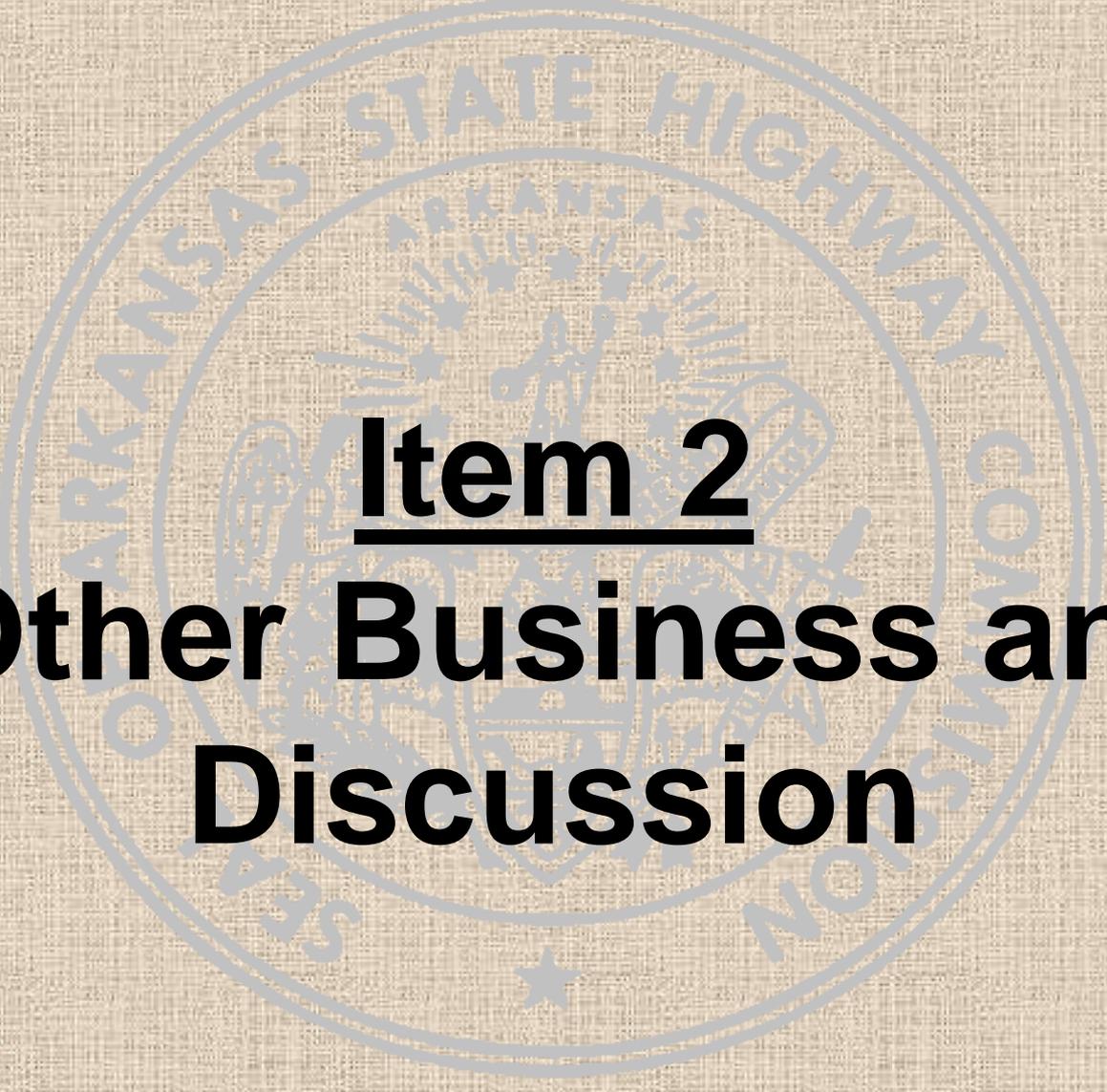
Where do we go from here?





Where do we go from here?

- ✓ Repair existing winter damage
- ✓ Foster & expand a culture of mutual assistance
- ✓ Purchase 12 belly plow trucks
- ✓ Construct regional salt storage facilities
- ✓ Pursue equipment upgrades
- ✓ Snow & Ice line item in budget
- ✓ Assist with humanitarian aid

The background features a large, faint, circular seal of the Arkansas State Highway Commission. The seal contains the text "ARKANSAS STATE HIGHWAY COMMISSION" around the perimeter and a central emblem with a figure and stars.

Item 2
**Other Business and
Discussion**

The background features a large, faint, circular seal of the Arkansas State Highway Commission. The seal contains the text "ARKANSAS STATE HIGHWAY COMMISSION" around the perimeter and a central emblem with a shield and stars.

Arkansas State Highway Commission Meeting

Tuesday, March 11, 2014