ARKANSAS DEPARTMENT OF TRANSPORTATION

Little Rock, Arkansas

October 5, 2017

MEMORANDUM

TO: Highway Commission

SUBJECT: Draft 2017 Speed Limit Review of Arkansas Highways

Pursuant to the passage of Act 1097 to “Amend the Law Concerning Speed Limits” by the 91st General Assembly of the Arkansas State Legislature, the Department has conducted an engineering and traffic investigation to determine the feasibility of increasing the speed limits on state highways. The investigation reviewed four groups of highways, and recommends the following speed limits:

✓ Rural Interstates – 75 miles per hour (mph)
✓ Urban Interstates – 65 mph
✓ Rural Multi-Lane Highways – 65 mph, unless an engineering study determines the need for a lower speed limit.
✓ Other Rural Highways – 55 mph, with the option to increase the speed limit to 60 mph on individual highways where an engineering study determines that a higher speed limit is warranted.

At the October 18 Commission Meeting, we plan to submit a Minute Order for your consideration to allow the Department to publish the attached report for public comment. Upon close of the public comment period, we will submit the final report to you for your approval. Should you have any questions or comments, please advise.

Scott E. Bennett, P.E.
Director

Attachment (1)

c: Deputy Director and Chief Operating Officer
Deputy Director and Chief Engineer
Assistant Chief Engineer – Planning
Assistant Chief Engineer – Operations
Transportation Planning & Policy
Maintenance
ARKANSAS’ HIGHWAYS

SPEED LIMIT

REVIEW AND RECOMMENDATIONS

September 2017 - DRAFT

Prepared by The Arkansas Department of Transportation.
In response to the 91st General Assembly Regular Session Passage of Act 1097 “To Amend the Law Concerning Speed Limits.”
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Executive Summary

Pursuant to the direction given the Arkansas Department of Transportation (ArDOT) with the passage of Act 1097 by the 91st General Assembly of the Arkansas State Legislature (see Appendix), ArDOT has conducted an engineering and traffic investigation to determine the feasibility of increasing the speed limits on state highways. The investigation reviewed four groups of highways, and recommends the following speed limits:

- Rural Interstates – 75 miles per hour (mph)
- Urban Interstates – 65 mph
- Rural Multi-Lane Highways – 65 mph, unless an engineering study determines the need for a lower speed limit.
- Other Rural Highways – 55 mph, with the option to increase the speed limit to 60 mph on individual highways where an engineering study determines that a higher speed limit is warranted.
**Introduction**

Since the repeal of the National Maximum Speed Law in 1995, the authority to establish speed limits on state highway systems has rested with each of the individual states. During the 2017 Regular Session of the Arkansas State Legislature, the 91st General Assembly passed Act 1097 (see Appendix), authorizing the Commission to increase the speed limits on controlled-access highways to 75 miles per hour (mph) “upon an engineering and traffic investigation”. This Act also increased the maximum allowable speed limit on all facilities other than controlled-access highways to 65 mph.

In response to this legislation, the Arkansas Department of Transportation (ArDOT) formed a team to conduct engineering and traffic investigations and present pertinent data concerning vehicular speeds and speed limits. The investigation considered crash histories, speed trends, highway design, and other states’ practices for the following four groups of highways:

- Rural Freeways
- Urban Freeways
- Rural Multi-lane Highways
- Other Rural Highways

Presently, rural freeways are posted at 70 mph, while urban freeways are typically posted at 60 mph. Rural multi-lane highways are posted at 55-65 mph, and all other rural highways are posted at 55 mph.

The purpose of this study is to provide an evaluation of existing speed limits, speed trends, and those factors that might be effected by changes in the existing speed limits, so that the administration can make an informed decision as to whether or not the speed limits should be increased as authorized by the Legislature.

**Current National and Regional Speed Limits**

Figure 1 shows the maximum speed limits on rural Interstates nationwide. Table 1 lists the current maximum speed limits allowed by law in each state. The data was compiled and published by the Insurance Institute for Highway Safety in August of 2017. Figure 2 shows the results of a poll of Arkansas’ surrounding states regarding the actual posted speed limits on the four types of facilities considered in this study.
Figure 1

Maximum Speed Limits Allowed by Law on Rural Interstates

Source: Insurance Institute for Highway Safety, August 2017
## TABLE 1
State Speed Limits by Facility Type

Source: Insurance Institute for Highway Safety, August 2017

<table>
<thead>
<tr>
<th>State</th>
<th>Rural Interstates (mph)</th>
<th>Urban Interstates (mph)</th>
<th>Other Limited Access Roads (mph)</th>
<th>Other Roads (mph)</th>
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</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>70</td>
<td>65</td>
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<tr>
<td>Alaska</td>
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<td>55</td>
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<td>65</td>
<td>65</td>
<td>65 (trucks: 65)</td>
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<td>75 (1)</td>
<td>75 (1)</td>
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<td>California</td>
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<td>65; trucks: 55</td>
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<td>75; 80 on specified segments of road (3)</td>
<td>75; 80 on specified segments of road (3)</td>
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<td>Illinois</td>
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<td>55</td>
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<td>60</td>
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<td>65</td>
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<tr>
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<td>75</td>
<td>75</td>
<td>60 (trucks: 65)</td>
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<td>65</td>
<td>65</td>
<td>55 (trucks: 65)</td>
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<tr>
<td>Michigan</td>
<td>70 (65 trucks); 75 (65 trucks) on specified segments of road</td>
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<td>55</td>
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<td>Minnesota</td>
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<td>65</td>
<td>65</td>
<td>60 (trucks: 65)</td>
</tr>
<tr>
<td>State</td>
<td>Rural Interstates (mph)</td>
<td>Urban Interstates (mph)</td>
<td>Other Limited Access Roads (mph)</td>
<td>Other Roads (mph)</td>
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<td>Mississippi</td>
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<td>North Dakota</td>
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<td>Ohio</td>
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<tr>
<td>Oklahoma</td>
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<td>Oregon</td>
<td>65; 70 on specified segments of road trucks: 55; 65 on specified segments of road</td>
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<td>Pennsylvania</td>
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<td>70</td>
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<td>South Carolina</td>
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<td>South Dakota</td>
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<td>80 (8)</td>
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<td>70</td>
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<td>Tennessee</td>
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<td>70</td>
<td>65</td>
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<td>Texas</td>
<td>75; 80 or 85 on specified segment of road (9)</td>
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<td>75</td>
<td>75</td>
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<tr>
<td>Utah</td>
<td>75; 80 on specified segments of road (10)</td>
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<td>75</td>
<td>65</td>
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<tr>
<td>Vermont</td>
<td>65</td>
<td>55</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Virginia</td>
<td>70</td>
<td>70</td>
<td>65</td>
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# TABLE 1 Continued

State Speed Limits by Facility Type

<table>
<thead>
<tr>
<th>State</th>
<th>Rural Interstates (mph)</th>
<th>Urban Interstates (mph)</th>
<th>Other Limited Access Roads (mph)</th>
<th>Other Roads (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington</td>
<td>70; 75 on specified segments of road (11)</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>trucks: 60</td>
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<tr>
<td>West Virginia</td>
<td>70</td>
<td>55</td>
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<tr>
<td>Wisconsin</td>
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<td>70</td>
<td>70</td>
<td>55</td>
</tr>
<tr>
<td>Wyoming</td>
<td>75; 80 on specified segments of road (12)</td>
<td>75; 80 on specified segments of road (12)</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>

1In Arkansas, the speed limit may be raised on a controlled-access highway to 75 mph if based on traffic and engineering studies.

2In Hawaii, the maximum speed limit is established by County Ordinance or by the Director of Transportation.

3In Idaho, the speed limit may be increased to 80 mph on specific segments of highway on the basis of an engineering and traffic investigation.

4The Illinois law allows Cook, DuPage, Kane, Lake, Madison, McHenry, St. Clair and Will Counties to opt-out by adopting an ordinance that sets a lower maximum speed limit, empowering counties to make adjustments based on their own local needs. These counties have a maximum large truck speed limit of 60 mph outside of urban districts and 55 mph inside urban districts.

5In Kentucky, the speed limit may be increased to 70 mph on specific segments of highway on the basis of an engineering and traffic investigation.

62013 New Hampshire House Bill 146 raised the speed limit from 65 to 70 mph on the portion of I-93 from mile marker 45 to the Vermont border.

7In Oklahoma, the speed limit may be increased by the DOT beyond 75 mph on any highway or part of a highway based on an engineering and traffic investigation, effective November 1, 2016.

8The Transportation Commission may establish a maximum speed limit of less than 80 mph upon any highway or portion of highway under the jurisdiction of the Department of Transportation, and any portion of highway under the jurisdiction of a state or federal agency.

9Sections of I-10 and I-20 in West Texas and sections of Highway 45 in Travis County have a speed limit for passenger cars and light trucks of 80 mph. Speed limits of up to 85 mph may be established if the highway is originally constructed and designed to accommodate the higher speed and it has been determined by an engineering study to be reasonable and safe. State Highway 130 (portions of the route are tolled) has a posted limit of 85 mph.

10In Utah, the speed limit may be increased beyond 75 mph on any freeway or limited access highway on the basis of an engineering and traffic investigation. The highest posted limit in Utah is currently 80 mph.

11In Washington State, maximum speed limits on highways or portions of highways may be posted as high as 75 mph if based on a traffic and engineering study, effective August 2015.

12In Wyoming, the speed limit may be increased to 80 mph on specific segments of highway on the basis of an engineering and traffic investigation.
Tennessee
- Rural Interstates - 70
- Urban Interstates - 55 - 65 Typ. - 70 Max.

Mississippi
- Rural Interstates - 70
- Urban Interstates – 55 or lower*
- Rural Multi-lane Routes - 70
- Rural 2-lane Routes – 55
Lower speed limits allowed based on an engineering study

Louisiana
- Rural Interstates - 70*
- Urban Interstates - 70
- Rural Multi-lane Routes - 65
- Rural 2-lane Routes - 55
Law allows speeds to be adjusted above or below the statutory speed. Only one is posted above – I-49 north of Shreveport is 75 mph.

Figure 2
Surrounding States
Speed Limits in Arkansas

The Highway Commission is authorized by Arkansas statutes to set maximum and minimum speed limits on controlled access highways and all highways on the State Highway System.

Historically, speed limits have been established by Commission Minute Order based upon a traffic and engineering study by Arkansas Department of Transportation (ARDOT) engineers. Some of the factors considered in the study include:

1. Road surface characteristics, shoulder condition, grade, alignment and sight distance.
2. The 85th-percentile speed.
3. Roadside development and culture.
4. Parking practices and pedestrian activity.
5. Reported accident experience for a recent 12-month period.

Prior to 1959, the speed limit on the State Highway System was 60 mph. In 1959, due to the completion of portions of the Interstate Highway System, the Commission set a maximum of 70 mph and a minimum of 45 mph on fully controlled access highways and a maximum of 70 mph on partially controlled access highways.

In 1970, the Commission raised the limits to 75 mph maximum and 50 mph minimum on fully controlled access highways and a maximum of 75 mph on partially controlled access highways. In 1971, the Commission set the maximum speed limit on all other types of highways at 60 mph with some exceptions allowing a maximum of 65 mph.

In 1974, due to the “Emergency Highway Energy Conservation Act” Congress imposed the National Maximum Speed Limit on all highways at 55 mph by requiring the limit as a condition of each state receiving federal highway funds. Accordingly, the Commission set the maximum speed limit on all highways at 55 mph.

In 1987, Congress permitted states to increase speed limits to 65 mph on rural sections of the Interstate System. The Commission raised the speed limits to 65 mph maximum and 45 mph minimum on rural sections of the Interstate.
In 1988, Congress allowed up to 20 states to increase speed limits on certain rural, fully controlled access highways that were built to Interstate standards. The Commission acted to set a maximum of 65 mph on the rural portion of US 65 (now I-530) from I-30 to Pine Bluff and the rural portion of US 67 from I-40 to Highway 224 south of Newport. Subsequent portions of US 67 and US 63 (now I-555) were opened with speed limits of 65 mph maximum and 45 mph minimum.

In 1995, Congress lifted all federal speed limit controls by enacting the “National Highway Designation Act”, fully delegating speed limit authority back to the states.

In 1996, the Commission set a maximum of 70 mph / Heavy Trucks 65 mph on rural freeways, a maximum of 60 mph on suburban freeways, a maximum of 55 mph on urban freeways and a maximum of 60 mph on rural expressways with high type partial control of access.

In 1997, the Commission authorized an increase on rural expressways where recommended by a route specific engineering study. Some rural expressways were subsequently increased to 65 mph.

In 1998, the Commission set a maximum of 65 mph on suburban freeways and a maximum of 60 mph on urban freeways.

In 2012, the Commission authorized an increase from 55 mph to 60 mph on rural, undivided, four and five lane highways where warranted.

In 2015, the Commission set a maximum of 70 mph for all vehicles on rural freeways and eliminated the Heavy Trucks 65 mph maximum.

In 2017, the Legislature, through Act 1097 (see Appendix), set the maximum allowable speed on controlled-access highways at 75 mph and the maximum allowable speed on all other facilities at 65 mph, contingent upon an engineering and traffic investigation.

A list of Commission Minute Orders concerning speed limits in Arkansas can be found in the Appendix.
Geometric Design Considerations

As defined in the 2011 American Association of State Highway and Transportation Officials (AASHTO) A Policy on the Geometric Design of Highways and Streets, design speed is a selected speed used to determine the various geometric design features of the roadway. Operating speed is the speed at which drivers are observed operating their vehicles during free-flow conditions. The 85th percentile of the distribution of observed speeds is the most frequently used measure of the operating speed associated with a particular location or geometric feature. The 85th percentile speed is the speed at or below which 85 percent of motorists are driving, and the Manual on Uniform Traffic Control Devices (MUTCD) states that the posted speed limit should be within 5 mph of the 85th percentile speed.

The design speed sets minimum values to be used in the geometric design of the roadway. Many times the horizontal and vertical alignments have design values that exceed the minimum values specified by the design speed. As a result, the design speed of a highway is likely to underestimate the “maximum safe speed” along most of its length. In fact, there are many instances along the existing roadway system where the posted speed exceeds the design speed; these situations are routinely handled with warning signs and advisory speed signs where appropriate.

The Federal Highway Administration (FHWA) clarified their position on the relationship between design speed and posted speed in an October 7, 2015 memo titled “Relationship between Design Speed and Posted Speed”. This memo stated that “Selection of a posted speed is an operational decision for which the owner and operator of the facility is responsible. Anticipated operating and posted speeds should be considered in the selection of the design speed, but there is no regulation establishing a more direct relationship.….If a state legislature or highway agency establishes a speed limit greater than a roadway’s inferred design speed, FHWA recommends that a safety analysis be performed to determine the need for appropriate warning or informational signs such as advisory speeds on curves or other mitigation measures prior to posting the speed limit.” ARDOT current signing policies and guidelines call for the placement of warning signs and advisory speeds in accordance with guidelines from the MUTCD on measuring horizontal curvature and available stopping sight distances for vertical curvature.
National Cooperative Highway Research Program (NCHRP) REPORT 504, Design Speed, Operating Speed, and Posted Speed Practices, concluded that “while a relationship between operating speed and posted speed limit can be defined, a relationship of design speed to either operating speed or posted speed cannot be defined with the same level of confidence. The research also found that design speed appears to have minimal impact on operating speeds unless a tight horizontal radius or a sharp vertical curve is present.”

**Crash / Safety Considerations**

ARDOT has calculated fatal crash rates and fatality rates for the categories of highways under study. Crash trends were analyzed from 1994 to 2015.

Fatal crash rates and fatality rates are calculated based on the number of fatal crashes and fatalities on a system as well as the total amount of traffic (vehicle miles traveled) on that system.

Facts on fatal crashes as related to changes in speed limits that have been found in this analysis are as follows:

- Table 2 compares crash data on Arkansas’ rural Interstates before and after speed limit changes. After the speed limit was increased in 1996, fatality rates increased 9.4 percent.

- Figure 3 shows that the number of fatal crashes peaked during the year 2000 on rural Interstates while speed limits were higher. It also shows that an upward trend in the fatal crashes in 2015 continued when the truck specific speed limit of 65 mph was removed. This data is compared with the annual vehicle miles traveled (VMT).

- Figure 4 shows that the fatality rate as well as the fatal crash rate for all Interstates peaked in the year 2000, four years after the speed limit was increased.

- Figure 5 shows that the fatal crash rate on rural Interstates peaked in 2005 and the fatality rate peaked in 1998 after the speed limits were increased in 1996.
Figure 6 shows an increase in both the fatality and fatal crash rate after the speed limit increased to 65 mph on suburban Interstates and 60 mph on urban Interstates peaked in 2000 after raising speed limits in 1998.

Figure 7 does not show a significant change in fatality or fatal crash rate after speed limits were increased to 60 mph on major rural highways in 2012.
Table 2
Crash Data on Arkansas' Rural Interstate System
Before and After Speed Limit Changes

<table>
<thead>
<tr>
<th>Year</th>
<th>Fatal Crashes</th>
<th>Fatalities</th>
<th>Fatal Crash Rate(1)</th>
<th>Fatality Rate(1)</th>
<th>Percent Change Of Fatality Rates</th>
</tr>
</thead>
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<tr>
<td>1995</td>
<td>40</td>
<td>46</td>
<td>0.74</td>
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<td></td>
</tr>
<tr>
<td>1996</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Speed Limit increased from 65mph to 70mph on Rural Interstates</td>
</tr>
<tr>
<td>1997</td>
<td>44</td>
<td>54</td>
<td>0.76</td>
<td>0.93</td>
<td>+9.41 percent</td>
</tr>
</tbody>
</table>

(1) Per 100 Million Vehicle Miles Traveled
Figure 3
Fatal Crashes versus Annual Vehicle Miles Traveled

- Speed Limit Increased from 65mph to Max. 70mph/Trucks 65mph on Rural Interstates
- Traffic Volume Annual VMT
- Number of Fatal Crashes
- Truck Specific Speed Limit 65mph Removed March 2015

Legend:
- Red: Number of Fatal Crashes
- Green: Annual VMT (Billions)
Figure 4
Fatal Crash and Fatality Rates – All Interstates

(1) Fatal Crashes and fatalities per 100 million vehicle miles traveled
Speed Limit Increased from 65mph to Max. 70mph/Trucks 65mph on Rural Interstates August 1996

Truck Specific Speed Limit 65 Removed March 2015

(1) Fatal crashes and fatalities per 100 million vehicle miles traveled
Figure 6
Fatal Crash and Fatality Rates – Urban Interstates

Speed Limit Increased from 55mph to 65mph Suburban Interstates
60mph Urban Interstates
September 1998

(1) Fatal Crashes and fatalities per 100 million vehicle miles traveled
Figure 7
Fatal Crash and Fatality Rates – Major Rural Highways

Speed Limit Increased
Max. 60 mph on Undivided Hwys.
where warranted
June 2012

(1) Fatal crashes and fatalities per 100 million vehicle miles traveled
While speed obviously has a significant impact on the fatal and serious injury crash rates, these figures show a declining trend for fatal and serious injury crash rates since 2000, even given the steady increase in the vehicle miles traveled over this period. It could be argued that technology has played a more significant role in the fluctuation of the rates than the posted speed limit. For example, continued improvements in vehicle safety design, airbags, better tires, and the more recent development of collision avoidance systems, has contributed to the declines, whereas the explosion of the use of smartphones and texting has contributed to the increases.

**Literature Review**

ARDOT also reviewed other studies that have been conducted concerning the effects of speed and speed limits on crash occurrences. A bibliography citing the reference materials can be found in the Appendix. Some notable findings:

- A 2016 study by Insurance Institute for Highway Safety (IIHS) indicates that there is a definite trend of increased fatality risk when speed limits are raised. According to this study, a 5 mph increase in the maximum state speed limit was associated with an 8 percent increase in fatality rates on Interstates and freeways and a 4 percent increase on other roads. This increase in risk has been so great that it has now largely offset the beneficial effects of some other traffic safety strategies. State policy makers should keep this trade-off in mind when considering proposals to raise speed limits [1].

- In 2015, Kansas Department of Transportation conducted a simple analysis on all roadways with an increase in speed limit from 70 to 75 mph on July 1, 2011. This analysis compared 3.5 years of crash data before and after the increase in speed limit. It showed that all injury and fatal crashes increased on those roadways; whereas, statewide analysis of all routes showed reduction in all severity of crashes for the same time frame [2].

- Journal of Accident Analysis and Prevention reports that the risk of driver fatality in a crash is approximately proportional to the fourth power of the change in speed [3]. A Transportation Research Board publication in 2009 extends this relationship to the non-fatal injuries [4].

- A 2009 study analyzed the long-term effects of the National Highway Designation Act. This study, published by the American Journal of Public Health, found that from 1995 to 2005, there was a 3.2 percent increase in fatalities attributable to higher speed limits on all road types, with the highest increase of 9.1 percent
occurring on rural Interstates. Researchers estimated that 12,545 deaths were due to increases in speed limits across the U.S. [5].

- The National Highway Traffic Safety Administration (NHTSA) reported in 2009 that about 55 percent of all speed-related crashes are due to “exceeding speed limits” as compared to the 45 percent that were due to “driving too fast for conditions.” Speed-related crashes that were due to “driving too fast for conditions” were more likely to have occurred on roads with higher speed limits (50+ mph) as compared to other crashes [6].

- The Transportation Research Board reported in 2006 that 3 percent increases in total crash rates are associated with a speed limit increase from 55 to 65 mph on an average high-speed roadway section. Also a significant increase in the probability of fatalities and serious injuries is associated with higher speed limits. For this particular 10 mph speed limit change, a 24 percent increase in the fatal injury probability would be expected [7].

- A 2006 study reported by Texas Transportation Institute (TTI) indicates that an increase in the speed limit by 10 mph was found to be associated with a change in fatal injury count between 13 and 28 percent [8].

- An older study by IIHS in 1999 also found that fatalities increased, first on rural Interstates with the law's partial repeal and later on all Interstates after the full repeal [9].

Information concerning speed limit changes has been gathered for individual states. Table 3 shows the correlation between speed limit changes and fatalities for each state.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Comparison of Crash Data Before and After Speed Limit Increases</th>
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</thead>
<tbody>
<tr>
<td>State</td>
<td>Fatalities 2013</td>
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<tr>
<td>Idaho</td>
<td>214</td>
</tr>
<tr>
<td>Wyoming</td>
<td>87</td>
</tr>
<tr>
<td>Utah</td>
<td>220</td>
</tr>
<tr>
<td>Georgia</td>
<td>1,180</td>
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<td>Kansas</td>
<td>431</td>
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<tr>
<td>Texas</td>
<td>3,023</td>
</tr>
<tr>
<td>Totals</td>
<td>5,155</td>
</tr>
</tbody>
</table>
Before and after crashes were reviewed for six of these states. Of the six states, five states had an average increase in number of fatalities of 25.40 percent. One state showed a decrease in the number of fatalities of 6.03 percent. The Arkansas Strategic Highway Safety Plan (SHSP) recognizes the dangers of speeding and aggressive driving as one of its Primary Emphasis Areas, and addresses the issue of speed related fatalities and aggressive driving. The SHSP recommends the implementation of several strategies to address this problem [10]. Some of these strategies include:

- Increase usage of dynamic warning signs to remind drivers of their travel speed when entering urban areas or other high risk locations.
- Add information into driver training manuals about the dangers of aggressive drivers.
- Involve parents in driver education.
- Utilize social media to share information about the dangers of aggressive driving.
- Develop media campaigns to increase public awareness about the dangers of speeding and aggressive driving.
- Report statistics regarding fatalities on dynamic message signs.
- Encourage community based enforcement by creating a traffic complaint hot line.
- Develop high-visibility enforcement outreach programs.
- Develop “TACT” campaign, “Ticketing Aggressive Cars and Trucks.”

The National Transportation Safety Board (NTSB) recently released a study, which found that between 2005 and 2014 there were 112,580 speed related fatalities in the U.S., representing 31 percent of all traffic fatalities. To put this into perspective, this was practically the same number for alcohol related fatalities, which were 112,948 for the same time period. Arkansas crash data shows 14.45 percent of all crashes are speed related [11].

The 1996 Speed Limit Study for Arkansas Highways correctly noted that a speed limit increase may result in a short term increase in fatal crash and fatality rates. It also correctly predicted that these rates would continue to decline over time to a point lower than they were when the speed limits were increased. It is logical to assume that this same trend would apply if the decision to increase speed limits is once again made [12].
Speed Trend Considerations

The average speed and 85\textsuperscript{th} percentile speed was compiled from 2010 to 2016 for three categories of highways: rural freeways, urban freeways, and rural multilane highways. The average speed is the sum of all the speeds divided by the number of vehicles monitored. The 85\textsuperscript{th} percentile speed is the speed at or below which 85 percent of the vehicles are traveling.

Rural Freeways

Figure 8 shows the speed trends for rural freeways. Both the average speed and the 85th percentile speed were highest in 2010. In the years following, the speeds have been fairly constant, with the average speeds in the low to mid-fifties, and 85\textsuperscript{th} percentile speeds in the low seventies. The average speed in 2016 was 52 mph, and the 85\textsuperscript{th} percentile speed was 71 mph.

Figure 8
Speed Trends for Rural Freeways
Urban Freeways

Figure 9 shows the speed trends for urban freeways. Similar to the rural freeways, both the average speed and 85th percentile have remained fairly constant through the 6-year study period with average speeds in the upper forties and 85th percentile speeds in the upper fifties to low sixties. The average speed in 2016 was 48 mph, and the 85th percentile speed was 59 mph.

Rural Multi-Lane Highways

Figure 10 shows the speed trends for rural multilane highways. This group of roadways has seen a steady growth in average and 85th percentile speeds from 2010 to 2016. The average speed has increased from 57 mph in 2010 to 60 mph in 2016. The 85th percentile speed has increased from 64 mph in 2010 to 67 mph in 2016, with a peak of 68 mph in 2015.
Other Rural Highways

The 85th percentile speeds for rural two-lane highways were compiled in ARDOT Districts 2 and 9. These Districts were selected to represent the two predominant types of terrain in the State. The 85th percentile speed on two-lane highways in District 2 was 65 mph and the 85th percentile speed in District 9, was 60 mph. Based on these compared 85th percentile speeds, it would be appropriate for individual speed studies to be performed on rural two-lane highways where increased speed limits are proposed or considered.
RECOMMENDATIONS

Rural Freeways

Rural freeways are fully controlled access facilities that typically have at least two lanes of traffic in each direction. They are characterized by widely spaced interchanges and little or no recurring congestion. ArDOT typically uses a 65 or 70 mph design speed for rural freeways, depending on the severity of the existing terrain. Three of the adjoining states currently have posted speed limits of 75 mph on their rural Interstate segments approaching the State line (I-40 in Oklahoma, I-30 in Texas, and I-49 in Louisiana). The lone exception is Missouri, where the posted speed on I-55 is 70 mph. Given that the 85th percentile speed on rural Interstate segments is 71 mph, an increase of the speed limit to 75 mph as authorized by the Legislature is recommended.

Urban Freeways

Urban freeways are fully controlled access facilities often with three or more lanes of traffic in each direction. Design speeds range from 60 to 70 mph. They are characterized by very high traffic volumes and closely spaced interchanges with high volumes of traffic entering and leaving the freeway. These facilities may also contain auxiliary lanes that are added and dropped at interchanges as traffic volumes dictate. These operating characteristics lead to a high incidence of merging and weaving, which during peak travel times creates regular, recurring congestion. The 85th percentile speed currently being driven on the urban segments of the Interstate system (I-30, I-630, and I-40 in the downtown Little Rock metro area and I-49 in the Fayetteville-Bentonville metro area) is 59 mph. This study recommends that the suburban freeway category be eliminated and that the speed limit on urban freeways be increased to 65 mph to provide a uniform speed through the urban areas.

Rural Multi-Lane Highways

Rural multi-lane highways are facilities with at least two lanes of traffic in each direction that are separated by either a grass or paved median. Design speeds on these facilities range from 55 to 65 mph. Previous speed studies have resulted in posted speed limits of 65 mph for facilities with grass medians and 60 mph for facilities with paved medians. The decision on the type of median to construct is based largely on the right-of-way and/or environmental constraints in an area that necessitate a reduced right-of-way width. Along many routes, the median width and type often
changes several times with no obvious reason (such as entering into an incorporated area) to the motorist for the change. The 2012 speed limit study of rural, 4 and 5 lane highways analyzed all of the roadway segments of this type in the State, and determined that the speed limit on a large number of them could safely be increased to 60 mph. The 2012 study showed that the 85th percentile speed on these facilities was 63 mph. The current 85th percentile speed for all rural multi-lane highways, regardless of median type, is 67 mph. This study recommends that the speed limit on rural multi-lane highways be set at 65 mph regardless of median type to better meet driver expectations, unless an engineering study determines the need for a lower speed limit.

Other Rural Highways

This category comprises the largest portion of the highway system, and as such has the most varied geometry of any of the groups considered. The design speeds for these facilities range from 35 to 65 mph, the lane widths range from 10 to 12 feet, and the shoulder widths vary from 0 to 8 feet. Many of these routes, especially in the mountainous areas, have no traversable slope beyond the shoulder. The posted speed limit is typically 55 mph. Given the wide range of geometric conditions, it is not practical to analyze this group as a whole when considering an increase in speed limits. There are many routes in this group, particularly in the eastern part of the State, that were designed with a 60 mph design speed and could easily justify an increase in the posted speed limit. The 85th percentile speeds were measured in two areas, District 9 to represent the mountainous areas, and District 2 to represent the Delta Region. The 85th percentile speeds were 60 mph in District 9 and 65 mph in District 2. Given the disparity in this group, this study recommends that the existing 55 mph speed limit be retained, with the option to increase the speed limit to 60 mph on individual highways where an engineering study determines that a higher speed limit is warranted.
APPENDIX
A Bill

For An Act To Be Entitled

AN ACT TO AMEND THE LAW CONCERNING SPEED LIMITS; AND
FOR OTHER PURPOSES.

Subtitle

TO AMEND THE LAW CONCERNING SPEED LIMITS.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

SECTION 1. Arkansas Code § 27-51-201(b) and (c), concerning speed
limits, is amended to read as follows:

(b)(1) Upon an engineering and traffic investigation, the State
Highway Commission may increase the speed limit of a controlled-access
highway to the maximum speed limits set forth in subsection (c) of this
section shall not apply to controlled-access highways seventy-five miles per
hour (75 m.p.h.).

(2)(A) Upon an engineering and traffic investigation, the State
Highway Commission shall determine the maximum permissible speeds on
controlled-access highways which shall be effective when appropriate signs
giving notice are erected along the highway by the Arkansas State Highway and
Transportation Department.

(B) The commission shall fix the maximum permissible speed
of trucks with a capacity of one and one-half-ton or more at ten miles per
hour (10 m.p.h.) below the maximum permissible speed for automobiles.

(c) On all facilities other than controlled-access highways, except
when a special hazard exists that requires lower speed for compliance with
subsection (a) of this section, the limits specified in this section or
established as authorized shall be maximum lawful speeds, and no person shall not drive a vehicle on a highway at a speed in excess of the following limits:

(1) Thirty miles per hour (30 m.p.h.) in any urban district;

(2) Fifty miles per hour (50 m.p.h.) for trucks of one-and-one-half-ton capacity or more in other locations;

(3) Sixty-six-five miles per hour (60 m.p.h.) (65 m.p.h.) for other motor vehicles in other locations; and

(4) No vehicle A motor vehicle which is over width, over length, or over height or the gross load of which is in excess of sixty-four thousand pounds (64,000 lbs), excluding the front axle, even if operated under a special permit, shall not be operated in excess of thirty miles per hour (30 m.p.h.).

SECTION 2. Arkansas Code § 27-51-203 is repealed.

27-51-203. Authority to establish limits.

(a) The determination and establishment of safe maximum and minimum travel speeds for all motor vehicles using the facilities of the state highway system shall be vested in the State Highway Commission, whose power, responsibility, and duty it shall be to implement and maintain this control with all reasonable care and prudence.

(b) To this end, this section and §§ 27-51-204—27-51-207 shall be made supplemental to § 27-51-107.

SECTION 3. Arkansas Code § 27-51-204 is amended to read as follows:

27-51-204. Maximum and minimum speed limits — Exceptions.

(a)(1) The State Highway Commission shall determine, based upon studies of the engineering and traffic characteristics thereof, the maximum and minimum desirable speeds for all traffic facilities in the state highway system.

(2) These regulatory speeds shall be effective when appropriate signs giving notice thereof are erected.

(a)(1) The maximum and minimum speed limits posted under § 27-51-201 shall apply to all vehicles using the facility except authorized emergency vehicles on emergency trips, such as police vehicles on duty, fire vehicles
(2) This exemption shall not relieve any driver of an authorized
emergency vehicle from his or her lawful responsibility to drive with due
regard for the safety of all persons upon or using the highway facility, nor
shall it protect the operator of any such vehicle from the consequence of a
reckless disregard for the safety of others.

/s/Vaught

APPROVED: BECAME LAW ON 04/07/2017 WITHOUT THE GOVERNOR'S SIGNATURE.
# Minute Orders Concerning Speed Limits

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<td>Maximum 70 mph on Partially Controlled Access Routes</td>
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<td>70-301</td>
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<td>Fully Controlled or Partially Controlled Access Routes</td>
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LITERATURE REVIEW BIBLIOGRAPHY


Arkansas’ Highways Speed Limit Review and Recommendations