

## WHAT IS A RUMBLE STRIP?

Rumble strips are grooves or rows of indents in the pavement that cause a vibration and audible rumbling, transmitted through the wheels into the car body. Rumble strips are used to grab a driver's attention through vibration and noise to alert them that they are leaving the travel lane.

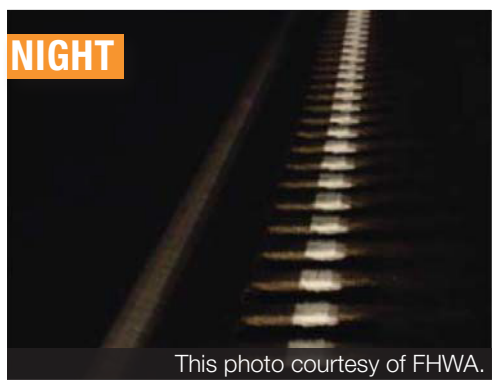
## RUMBLE STRIPS WARN DRIVERS

Rumble strips are an effective countermeasure for reducing roadway departure crashes. This relatively low cost engineering treatment alerts drivers of a lane departure through vibration and noise created when a vehicle's tires contact the rumble strip.

DAY



NIGHT



This photo courtesy of FHWA.

*Note the brightness of the rumble strip at night, as compared to the normal pavement marking to the left of the rumble line.*



Visit [idrivearkansas.com](http://idrivearkansas.com) to help you avoid traffic snags, work zone delays, or hazardous road conditions.

You can also call for the latest on traffic and weather-related road conditions.

### ROAD CONDITION HOTLINES

Local: (501) 569-2374 (call or text)

Toll Free: (800) 245-1672

For information about the Arkansas Department of Transportation, visit [www.ardot.gov](http://www.ardot.gov)

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# RUMBLE STRIPS

A Safety Tool to Prevent Crashes





## ROADWAY DEPARTURE CRASH

A roadway departure crash is defined by Federal Highway Administration (FHWA) as a crash where a vehicle crosses an edge line, a center line, or leaves the traveled way. The types of crashes fitting this definition would be if a vehicle crossed the centerline or median, ran-off-the-road (on the right or left), or hit a fixed object.

## BY THE NUMBERS

Roadway Departure crashes account for 66 percent of all fatalities in Arkansas and crashes occur predominantly in rural areas. A large portion of roadway departure fatalities are in crashes where the vehicle hit a fixed object (tree, guardrail, etc). Rumble strips are proven to reduce fatal and serious injury run-off-the-road type crashes.

## OUR PLAN TO REDUCE CRASHES

In 2013, Arkansas participated with FHWA to develop a Roadway Departure Safety Implementation Plan for reducing these types of crashes.

Data analysis of Arkansas crashes was combined with cost effective strategies at specific locations to achieve a goal to reduce the annual number of roadway fatalities to 485 or less, by 2022.

One of these countermeasures to reduce fatalities is rumble strips.

## NOISE CONCERNS

While this noise made by tires helps keep drivers alive, this noise can also be disturbing to residents near highways.

The average noise inside of a traveling passenger vehicle with no rumble strips is about 60 decibels (dB). In order to alert a drowsy driver, an increase in interior noise must be between about 6-15 decibels. There is a corresponding larger increase in noise outside the vehicle and proximity is also a factor.

A Minnesota DOT study of rumble noise found the following noise levels near shoulder rumble strips:

50' away = 82<sub>dB</sub>

100' away = 75<sub>dB</sub>

200' away = 67<sub>dB</sub>

300' away = 62<sub>dB</sub>

## EQUIVALENT SOUNDS:



Motorcycle at 25' = 90<sub>dB</sub>



Garbage disposal = 80<sub>dB</sub>



Vacuum cleaner = 70<sub>dB</sub>



Normal conversation at 3' = 60<sub>dB</sub>

## PREVENTING A TRAGEDY

There are two main applications of rumble strips used to help reduce roadway departure crashes:

**Centerline Rumble Strips** – reduces head-on, opposite direction side-swipe, and run-off-the-road left crashes by 20 percent. Primarily placed near (or on) the centerline of the roadway to separate opposing traffic on undivided highways.

**Shoulder Rumble Strips** – reduces run-off-the-road crashes by 33 percent for two-lane rural roads. These are shoulder installed, placed adjacent to the edge of the travel lane or placed at the edge of the travel lane within the pavement marking, improving the visibility of the marking.

Shoulder Rumble Strips can be installed with gaps so that bicyclists can more easily travel across to the shoulder.

Both types of rumble strips may also have gaps at intersections, interchanges, and sometimes across bridges.

## ABIDE BY THE RULES OF THE ROAD

Driving violations (speeding, alcohol, and unbelted driving) are major factors in roadway departure crashes. Many of these crashes involve multiple driving violations. Rumble strips are effective at addressing:

- Speeding
- Distracted drivers
- Fatigued or drowsy drivers
- Inattentive Driver