

Frequently Asked Questions:

Why are we installing rumble strips?

[Roadway Departure](#) crashes account for 66 percent of all fatalities in Oregon. Federal Highway Administration (FHWA) now mandates that Department of Transportations (DOTs) aim to reduce all fatal and serious injury crashes in their state. In 2010, Oregon participated with FHWA to develop a [Roadway Departure Safety](#) Implementation Plan for preventing these types of crashes. Data analysis of Oregon crashes was combined with cost effective strategies at specific locations to achieve a goal to reduce 20 percent of roadway departure fatalities. One of these countermeasures to prevent fatalities is rumble strips.

What is a rumble strip?

Rumble strips are used to grab a driver's attention through vibration and noise to alert them that they are leaving the travel lane.

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

Centerline Rumble Strips – reduce head-on, opposite direction side-swipe (SS-O), and run-off-the-road **left** crashes. Primarily placed near (or on) the centerline of the roadway to separate opposing traffic on undivided highways. They can reduce up to 44% - 64% of fatal and injury head-on and SS-O crashes.

Shoulder Rumble Strips – reduce run-off-the-road right crashes. 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 (commonly referred to as edgeline rumble strips), improving the visibility of the marking. They can reduce up to 33% of fatal and injury run-off the road to the **right** crashes.

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

What is a 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.

Why are there so many roadway departure crashes?

There are many contributing factors. Driver fatigue and drowsiness can contribute to roadway departure crashes; a drowsy driver can be just as dangerous as a drunk driver. In other cases, drivers are inattentive, careless, or distracted, and drift out of the lane and off the road. Visibility also is an issue. Inclement weather such as fog, snow or smoke also can decrease the visibility of pavement markings. In these conditions, drivers may drive off the road accidentally.

What are the cost comparisons of rumble strips to guardrail or other barriers?

\$900 / mile for rumble strips
\$250,000 / mile for guardrail (approximately \$50/ft)
\$300,000 / mile for concrete barrier (approximately \$60/ft)

Will the noise be disruptive near my residence?

While the noise made by tires occurs infrequently, only when a vehicle is errant, this noise can still be disturbing to residents near highways. Listed below puts compares noise level of rumble strips to other noise contributors:

85 decibel (dB) for rumble strips compared to:
90 dB for trucks
95-110 dB for motorcycles
110 dB for car horn
80 dB for a garbage disposal
70 dB for a vacuum cleaner

We will assess each installation to avoid undue disturbances. Suggested distances to trigger exceptions are from a Minnesota DOT rumble strip noise study.

For rumble strips placed within 300 feet of a neighboring residence:

- **Centerline rumbles may be omitted for a passing section.**
- **Centerline rumbles may be omitted in locations with a tight radius curve with frequent vehicle off tracking.**
- **Edgeline rumbles may be omitted in locations with a tight radius curve or at frequently used road approach locations where vehicle off tracking is common.**

Are the rumble strips dangerous for motorcycles?

The design of rumble strips has been through decades of engineering research and studies. The current design adds no measureable risk to motorcycles. Motorcycle test groups have reported noticing rumble strips but never feeling out of control when driving over them.

Are rumble strips dangerous to bicyclists?

We recognize the difficulty for bicyclists to traverse rumble strips. Shoulder rumble strip design can be narrowed, placed closer to the edge of the travel lane and will include regular gaps for bicycles to maneuver in and out of the shoulder more easily. Regular gaps (every 30 feet) in the rumble strip pattern are designed into the rumble strips to provide adequate gaps for the bicyclist to move off the shoulder in case of debris or a disabled vehicle on the shoulder. Shoulder rumble strips are only installed where there is adequate shoulder width on the shoulder to accommodate a bicyclist comfortably (4 ft or more).

On the positive side, some bicyclists have said that shoulder rumble strips provide a buffer between them and vehicles and they can hear if a vehicle is beginning to encroach on the shoulder.

Are they dangerous for motorists and snow plows in the winter as they accumulate gravel and water/snow/ice?

Many winter weather states like Michigan and Minnesota have installed a significant amount of rumble strips and have not seen any issues or concerns surrounding the combination of winter weather and rumble strips. Tests show that vibration and the action of wheels passing over the rumble strips in fact knock debris, ice, and water out of the grooves. Snow plow drivers and motorists have actually come to depend on shoulder rumble strips to help them find the edge of the travel lane during heavy snow and other low visibility situations.

Won't rumble strips deteriorate the pavement quicker?

Maintenance crews were initially concerned that heavy traffic would cause shoulder pavements with rumble strips to crumble faster, or that the freeze-thaw cycle of water collecting in the grooves would crack the pavement. These worries have proved to be unfounded. There appears to be little early deterioration of milled shoulder rumble strips on either cement concrete or asphalt pavements from either source. Where pavement conditions are less than good, an asphalt seal will be placed overtop the rumble strips to help deter deterioration.