

Identifying and litigating a highway shoulder defect case: Practical tips

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Defective highway shoulders have been cited as a major cause of severe accidents involving injuries and fatalities on roadways nationwide. A common cause of highway shoulder accidents is pavement edge drop-offs, which occur when there are uneven height differences between the travel lane and shoulder.

According to the Federal Highway Administration, or FHWA, about 11,000 people are injured and about 160 die annually in crashes related to unsafe pavement edges, resulting in a cost of \$1.2 billion.

One of the most common tort liability suits filed against state agencies and construction contractors involves cases in which pavement edge drop-off was a major contributing factor to a crash.

For example, in fiscal years 2000-2003, crashes in which “pavement/shoulder edge” or “shoulder conditions” were the major contributing factor accounted for 38 percent of the total dollar value of claims filed against the state of Iowa.

State highway agencies and contractors responsible for designing, constructing and maintaining roadways can face significant liability in claims resulting from unsafe pavement edge drop-offs. According to the FHWA, tort liability claims cost highway agencies millions of dollars each year. In one case, a New York Court of Claims awarded more than \$6 million to three plaintiffs who sued the state, alleging that negligent road maintenance contributed to the death of one woman and severe injuries to another.¹



Courtesy of FHWA.dot.gov

This photo from the Federal Highway Administration’s website shows an engineer measuring a fresh 30 degree Safety Edge. With this treatment, the pavement edge is shaped to 30 degrees to allow a more controlled re-entry onto the roadway.

However, research suggests that large verdicts are more the exception than the rule and that successfully litigating a claim arising from a dangerous highway shoulder can be challenging.

From 2000 to 2006, 23 tort liability claims related to pavement edge drop-offs were filed against Iowa, but compensation was awarded to the plaintiffs in only two cases.²

This commentary offers practical tips to attorneys litigating a highway shoulder

defect case or deciding whether to take such a case.

ANATOMY OF A SHOULDER DEFECT ACCIDENT

A highway shoulder is defective if there is an unsafe drop-off between the edge of the roadway pavement and the shoulder. A pavement edge drop-off is a vertical elevation difference between two adjacent roadway surfaces.

Pavement edge drop-offs are especially unsafe because the uneven height differences between surfaces can decrease vehicle stability and hinder a driver’s ability to handle a vehicle. Common causes of pavement edge drop-offs include erosion and excessive wear, which can cause the shoulder material to migrate away from the pavement edge.

Other causes include pavement edge-breaking and resurfacing a roadway without providing a proper transition to the shoulder.



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Accidents involving defective highway shoulders typically exhibit similar characteristics. In most cases, a vehicle leaves the travel lane and the right tire slips off the pavement and gets “wedged” or “restricted” by the pavement edge.³ When this happens, drivers are often surprised and tend to overcorrect as they attempt to return to the travel lane, causing the tires to “scrub” against the pavement edge and prevent the vehicle from climbing back onto the pavement.

The steering angle required to return the front wheels to the pavement and overcome the change in elevation is greater than what would typically be required to make the same turn on an aligned pavement.

As a result, drivers tend to lose control of the vehicles, cross the centerline and, in some cases, collide with oncoming traffic.

Crashes caused by pavement edge drop-offs are “two to three times more likely to be fatal, primarily because the vehicle often leaves the roadway, rolls over, hits a roadside object or is involved in a head-on collision.”⁴

Practice tip

Highway engineering literature will be good sources of information for establishing liability. The American Association for State and Highway Transportation Officials, the Transportation Research Board, and state transportation departments issue reports, guidelines and recommendations concerning the height and configuration at which shoulder drop-offs become dangerous.

with pavement resurfacing to mitigate pavement-edge-related crashes. With this treatment, the pavement edge is shaped to 30 degrees to allow a more controlled re-entry onto the roadway.

Research performed by the Texas Transportation Institute in the 1980s found that drivers rated a 45-degree wedge as a much safer pavement edge to remount the roadway than vertical or rounded edges.

caused by a defect lying in, along, above or adjacent to the paved surface or the shoulder or berm of the roadway, it is necessary to establish that the defect was the proximate cause of the accident. As a corollary, it is also necessary to show that the sequential chain of events leading to the accident was not broken by an efficient, intervening or independent cause.

- As a further condition precedent to recovery it is necessary to establish that the state or subordinate governmental agency had either actual or constructive notice of the defect, and at the same time, was accorded a reasonable opportunity to take remedial action with respect thereto.⁵

The limitations of these principles further reinforce that highway cases can be difficult to win. Therefore, thorough case evaluation is critical to determining whether time and resources should be devoted to cases involving defective highway shoulders. When evaluating a case, key considerations include:

- Would the condition of the road (captured in photos) look dangerous to an average person, regardless of whether the shoulder meets proper design or maintenance standards?
- Can prior accidents or witnesses be used to show notice of a dangerous condition?
- What forced the driver to go on the shoulder and was it for good reason?⁶

If the answer is yes to most or all of these questions, then the claim may be worthy of further investigation.

DISCOVERING THE DEFECT

To successfully prosecute a claim arising from a defective highway shoulder, an attorney must establish a design, construction or maintenance defect existed and that the nature and location of the accident were a result of the defect. Key steps include:

- Investigate the scene of the accident with qualified experts, including a qualified highway engineer and accident reconstructionist as soon after the accident as possible.
- Evaluate the shape and height of the drop-off.

According to the Federal Highway Administration, tort liability claims cost state highway agencies millions of dollars each year.

For more than 30 years, numerous studies have analyzed the various factors that lead to crashes involving pavement edge drop-offs. Consistent findings across all the studies suggest that whether a driver regains control of the vehicle or crashes depends on a variety of circumstances and conditions, including vehicle speed, steer angle, departure and return angle, vehicle size, drop-off severity, driver skills, roadside obstacles, and oncoming traffic.

GOVERNMENT LIABILITIES OF ROADWAY MAINTENANCE

Although there are no national standards that indicate the level at which pavement edge drop-offs should be maintained, several federal agencies provide guidance and recommendations. The agencies include the FHWA, American Association of State Highway and Transportation Officials and National Cooperative Highway Research Program.

The FHWA has implemented its Safety Edge process, which is implemented in conjunction

But the study was criticized because the drivers were instructed to go off the pavement edge and therefore, the findings did not represent unknowing drivers.

While multiple studies suggest a threshold drop-off height that should prompt action by highway departments, none of the national guidance agrees on drop-off shape or a specific level of drop-off that constitutes a potential hazard.

Still, state and local governments are responsible for providing safe and well-maintained roads for motorists. The following established principles pertain to the duty owed by states and “subordinate units” to the motoring public:

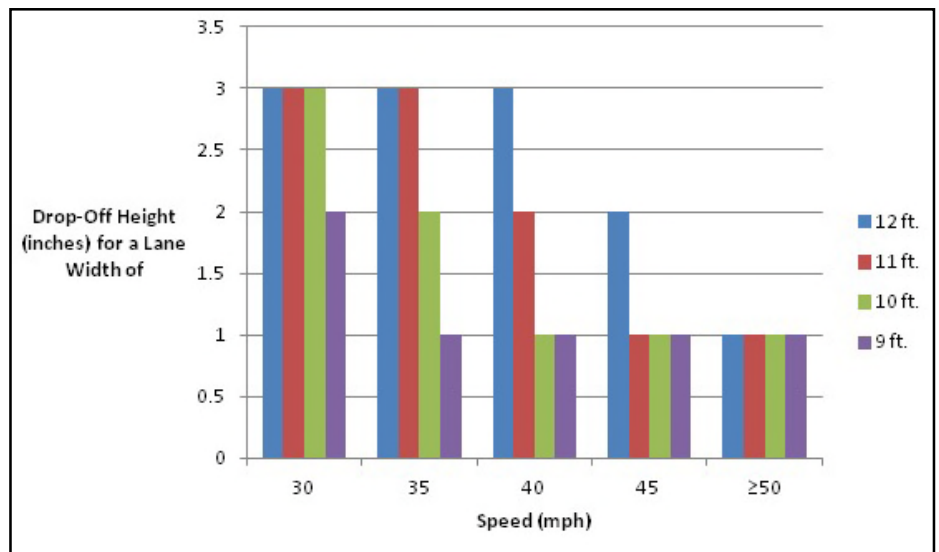
- Duty is limited to maintaining the roadway systems in a condition reasonably safe for public travel by motorists who are themselves exercising ordinary care.
- In an action against the state, or other governmental entities, to recover for death, injury or property damage

-Safe return to the lane has been found to be significantly more successful if a tire has to overcome a drop-off with a slope of 45 degrees or less. Further, "lane recovery" with a sloped or filleted drop-off is significantly better than a straight vertical or curved drop-off.⁷

-Guidelines suggest that drop-off heights should be no more than 2 to 3 inches, depending on width of the lane and the speed at which vehicles are traveling (see chart).⁸

- Photograph and document roadway characteristics, such as the lane width, shoulder width, type of surface and shoulder materials, grade and presence of a horizontal curve. Be sure to photograph everything from the driver's perspective and include:

- All signs.
- Pavement/edge markings.
- Speed limits.
- Skid marks or other marks on the pavement.
- Vehicle resting points.
- Anything that was struck in the accident.⁹



or highway entities are subject to being sued, but the amount of damages that can be recovered is regulated or subject to being capped under the waiver of sovereign immunity. Recovery amounts are typically limited to \$500,000 or less; therefore, a suit solely against the owner of the highway likely will not provide full compensation to a client.

It is important to look beyond the state department of transportation to identify whether additional entities, such as a

however, the circumstances surrounding the accident inevitably will be unique to that particular case. Therefore, one key to successfully litigating the case will be to highlight those unique circumstances.

Key points to make during trial include:

- What is the purpose of a highway shoulder?
 - Accommodate stopped vehicles.
 - Emergency use.
 - Recovery area for drivers who leave the travel lane.
 - Lateral support of the sub-base, base and surface courses.
- What are the requirements of a safe shoulder?
- What specific safety hazard is associated with each of the factors that make a safe shoulder?
- What is the standard required to construct and maintain a safe shoulder?

Plaintiff attorneys must establish that a design, construction or maintenance defect existed, and that the nature and location of the accident were a result of the defect.

- Obtain all documents from the police investigation (reports, photos, reconstruction), keeping in mind this data is only a starting point.
- Obtain photographic records and maintenance records from the local or state department of transportation. These materials can help to establish a design defect or the failure to maintain the shoulder as originally designed. Also seek highway department budget requests to determine whether the section of roadway where the accident occurred had been previously identified as needing repair.

construction company, created the dangerous circumstances. These types of defendants will not have the types of protections like sovereign immunity and will not be subject to the same damages caps as municipalities or state governments, thus allowing for a full recovery.

On the other hand, defendants such as construction companies will have defenses that the highway owner won't, such as following the transportation department's directions and the acceptance doctrine. In certain circumstances, the state's acceptance of a project can extinguish the liability of a contractor despite its negligence, which is why it is critical to know the state's laws regarding these types of claims.

IDENTIFYING ADDITIONAL SOURCES OF RECOVERY

When identifying additional sources of recovery, it is important to know the state laws. Most state transportation departments

LITIGATING A SHOULDER DEFECT CASE

In most any case, precedential case law will define the legal standard to impose liability;

DEFENSE TACTICS

Driver conduct will be a critical issue at trial, and blaming the driver will be a primary focus of the defense. Whether representing the driver or passenger, the onus on the plaintiff's attorney will be to minimize driver negligence and maximize the highway shoulder defect and the entity responsible.¹⁰

The plaintiff's attorney will want to counter the defense strategy by making the following points so that the driver's conduct is judged appropriately:

