

**Making Sure Your Hydroplaning Case is
Watertight**
*Mitcham v. Terminix and the Georgia Department
of Transportation*



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Hydroplaning cases present unique challenges in the *Daubert* era and must therefore be carefully prepared. However, a wet weather case properly prepared and presented can be very compelling.

A. Mitcham v. Terminix and the Georgia Dep't. of Transportation

The *Mitcham* case arose from a head-on collision in Cook County, Georgia on July 24, 2003, in a heavy rain storm described by witnesses as a “downpour.” The wreck occurred when a twenty-four year old pest control technician working for Terminix was driving a Ford F-350 North on I-75 at approximately 70 - 75 miles per hour. The rear tires on the truck were heavily worn with little tread depth remaining. As the truck entered a heavy rain shower, the driver prepared to switch lanes from the “slow” to the “fast” lane to pass a slower moving vehicle. The truck then encountered an excessive accumulation of water on the highway, lost control, crossed the grass median and struck the Mitcham minivan virtually head-on.

As a result of the collision, 41 year old Tonya Mitcham died and her 8 year old daughter, Mallory, suffered a permanent and severe brain injury. The other two Mitcham children in the van sustained less severe physical injuries, but suffered emotional distress in witnessing the extended extraction and rescue of their gravely injured mother and sister.

The case came to our firm roughly three weeks after the wreck and we began our investigation.

B. Investigating a Wet Weather Wreck

There are always three elements to any hydroplaning¹ case which must be considered: 1) water accumulation on the highway; 2) tire tread depth; and 3) vehicle speed. The deeper the water accumulation, the lower the tread depth, and the higher the vehicle speed, the greater the chance for a hydroplaning wreck. In any wet weather wreck the plaintiff's lawyer should investigate the potential for highway maintenance or design defects that could cause an excess accumulation of water on the highway. The investigation must begin with a review of the initial evidence available including the wreck report, an inspection of the vehicle that lost control, weather data, a thorough site visit, and interviews of all witnesses to the wreck, the investigating officers and emergency personnel, and interviews of those that live in the area of the wreck scene who may have knowledge of a history of water problems.

1. Tires

In a hydroplaning case, the condition of the vehicle's tires will be a central issue for all involved. As the tread depth of a tire decreases, the likelihood for hydroplaning

¹ The *Mitcham* case involved hydroplaning, a condition where one or more of a vehicle's tires lose all, or nearly all, contact with the highway surface which can produce a loss of vehicle control. Water accumulations on the highway can also cause a loss of vehicle control without hydroplaning. Specifically, water accumulations that are present only on one side of the vehicle can produce hydrodynamic drag causing the vehicle to be slowed and "jerked" towards the side of the road having the water accumulation. This can cause the vehicle to lose control and leave the road in the direction of the water accumulation, or can cause the driver to overcorrect in the opposite direction and lose control of the vehicle. Many of the issues raised in this paper are equally applicable to hydrodynamic drag wrecks. However, this paper focuses on a hydroplaning case. For an introductory discussion of the various types of wet weather wrecks see *Pavement Surface Water Phenomena and Traffic Safety* by George W. Black, Jr. and Lawrence E. Jackson, ITE Journal, Feb. 2000 pp. 32 - 37.

increases. Some authors have suggested that the chance of hydroplaning dramatically increases as tread depth falls below 6/32". In all wet weather cases, you or your investigator (and subsequently an accident reconstructionist) should take measurements of the tread depth of the vehicle tires using a tread depth gauge.² Measurements should be made in each of the major grooves at 3 - 4 different locations around the tire. Photographs should be taken of the tread depth gauge on the tire.³ If the tires have very little tread, the photographs will tell this part of the story for you to the jury.

Georgia law requires that all passenger vehicles have a minimum tread depth of at least 2/32" in all major grooves. O.C.G.A. § 40-8-74 (e). School buses and commercial vehicles must have a minimum tread depth of 4/32" on the front tires. *Id.*; see also 49 C.F.R. § 393.75(b). These are minimum standards. Several companies and government entities have a policy of replacing tires when the tread depth reaches 4/32", 5/32" or 6/32".

In the *Mitcham* case the condition of the tires was a focus of Plaintiffs' claims against Terminix. Plaintiffs sought discovery establishing the number of miles the rear tires had been run as well as the company's policy regarding tire inspection, rotation, and replacement. Many companies with large vehicle fleets use fleet management software

² Tread depth gauges cost less than five dollars and can be bought at several parts stores or online. Obviously, as the case progresses you will hire an accident reconstructionist who will do a more thorough examination of the vehicle and its tires. The tread depth gauge allows you to get an initial impression of the condition of the tires and informs the attorney's focus in the case.

³ A common measuring guide that many lay people use is the "penny test." In the penny test, if the tire tread does not reach the top of Lincoln's head when the penny is stood on its edge with Lincoln's head upside down, the tread is usually less than 2/32". While the penny test should never be substituted for a tread depth gauge in litigation, getting a photograph with a penny in the tires will be meaningful evidence for some members of the jury if the tires are a focus in your case.

that monitors, among other items, tire replacement, rotation, and tire costs. Because tire wear and replacement is fairly predictable, a company that neglects tire maintenance or skimps on this recurring and predictable cost can find itself defending a punitive damages claim for its prolonged neglect of tire maintenance.⁴

2. Site Visit

The site visit is the most important part of the early investigation in a wet weather wreck. If you have reason to believe that water accumulations played a role in causing the wreck, you should hire a qualified highway design and maintenance expert to go to the site. At the site visit, you need to first try to determine the point of loss of control. Pinpointing the exact point of loss of control is virtually impossible in a hydroplaning case because there will likely be no skid marks at the point of loss of control, and narrowing the exact point of loss of control to under 300 feet in many cases is not feasible.⁵ From the general area of the point of loss of control, the inspection should go up and down the road, into the median and laterally onto the shoulders. The source of the

⁴ In any hydroplaning or wet weather case, you should ensure that the tires on the vehicle that lost control are preserved. If the tires are heavily worn, bringing them to trial assists the jury more than tread depth measurements, especially when you can bring a new tire of the same make, size and model as a comparator.

⁵ The accident reconstructionist for the plaintiff should try to narrow the range of the area of loss of control as much as possible as hydroplaning cases are under attack. *See Layfield v. Dep't. of Transp.*, 271 Ga. App. 806, 611 S.E.2d 56 (2005). *Layfield* was wisely overruled by the Georgia Supreme Court, but you should take care in these cases with your proof. *See Layfield v. Dep't. of Transp.*, 280 Ga. 848, 632 S.E.2d 135 (2006). In presenting your case, you must get the trial court to understand the fact that absolute precision with respect to the precise point where the vehicle lost control is not always possible in a wet weather wreck. The fact that the highway is wet and the vehicle hydroplaned ensures typically that no physical evidence will be apparent on the highway surface. Instead, the reconstructionist must consider all factors, including but not limited to, the presence and location of water on the road, the potential for increased depths produced by a certain road defect or maintenance issue, the driver's description of the loss of control, and indeed the lack of any skid marks on the highway surface in determining more likely than not that a water accumulation contributed to the wreck.

water problem may be several hundred feet or yards from the area where the water actually accumulates on the highway.

There are several design and maintenance issues that may be present. First, all highways should be designed and constructed to have some cross-slope to promote the drainage of water off the pavement during a storm. In addition to the use of a cross-slope, highway engineers employ other drainage features such as curb drains, median drains, gutters, ditches, and grooving of the highway surface to promote drainage. You and your expert should try to locate all of the physical drainage features in the area of the suspected loss of control and inspect them.⁶

In the *Mitcham* case, a curb drain on the side of the highway was completely clogged with sand and overgrown with grass.⁷ In addition, parts of the travel lane at issue had no slope and were flat. A gutter that was supposed to slope away from the highway actually sloped towards the highway dumping water onto the travel lane during a storm. The inspection also found that the grass shoulders in the area were higher than the pavement edge and caused additional water to remain on the highway. In another area, we found that the shoulder was unpaved and had no grass growing which allowed sand to wash down the pavement and clog the curb drain. All of these defects were photographed and documented and were violations of various highway design and maintenance standards. It was the combination of these defects that contributed to an excess accumulation of water on the road.

⁶ Your highway design expert should obtain the original design plans to ensure that all drainage features are in place and free from defect.

⁷ The condition of the curb drain was photographed shortly after the wreck and reported to the Georgia Department of Transportation by Plaintiffs' counsel.

In addition to physical defects, you should also look for any evidence of prior water problems in the area. An open records request for prior wrecks in the area may yield other similar incidents that you can use. You may also look for “weep holes” or curb cuts in the area. Weep holes are trenches or ditches D.O.T. personnel will often create with a shovel perpendicular to the highway to let water drain from the road where a water accumulation has been found. Similarly, if a curb abuts the highway where water has a history of accumulating, D.O.T. personnel may cut or break away a piece of the curb to allow the water to drain from the roadway. These weep holes or curb cuts are powerful and undeniable evidence that the D.O.T. has identified the area as a place where water accumulates in a rain storm.⁸ If the weep holes or curb cuts pre-date the wreck you are investigating, the D.O.T. will be charged with prior notice of a problem.

Finally, you should keep a frequent check on the site as your case progresses. If possible, and if the physical conditions have remained unchanged, you should attempt to photograph and video the area during a rain event. When doing so, it is helpful to obtain depth measurements of water accumulations and to video vehicles passing through the water collections. Again, this video and photographic evidence is more compelling for the jurors than the drawings, diagrams, and numbers your experts can provide.

3. Weather Data

In a hydroplaning case, you need to know more about the weather on the day of the wreck than just the fact it was raining. You need to know how hard it was raining,

⁸ There are numerous design and maintenance issues that can cause water to be trapped or to accumulate on the roadway. Approaches to curves, areas where the highway is adjacent to a curb, and areas where approaching roads discharge water onto the highway are all areas where excess water can accumulate in the absence of appropriate design and maintenance. Each of these cases present unique road design and maintenance issues and must be considered individually.

where it was raining and for how long it rained. You will need a forensic meteorologist or climatologist to assist you in interpreting the weather data. The meteorologist can obtain radar data and images from the National Climatic Data Center and provide you with a range of rain intensities for the time period closest to your wreck.

The meteorologist must consider that the radar data shown is often well below the actual rain intensity on the ground. For example, in the *Mitcham* case, the radar data showed that the rain intensity on the day of the Mitcham wreck was only about 1/4"- 1/2" per hour. It was apparent from the hydrology analyses as well as the eye witness testimony in that case that the actual rain intensity was much higher. In fact, it is typical that the radar data should be multiplied by a factor of 2 – 10 to accurately reflect the rain intensity on the ground. This “undervaluing” of radar data is well known in the field of meteorology and has been discussed in peer reviewed papers.⁹

C. Proving the Wet Weather Case

All plaintiff’s attorneys should take advantage of the opportunity for pre-litigation work. As in any case, you should contact and interview the eye witnesses and the witnesses in the area before you file your complaint. Additionally, unlike most cases, in a case against a government entity you will be able to obtain a great number of documents from your prospective defendant before filing suit.¹⁰ You should obtain all of the original design plans showing the specifications for the cross-slope, the longitudinal

⁹ You will want to have a peer reviewed paper on this topic available to help resist any challenge to your expert’s opinions.

¹⁰ In addition to suing the government entity responsible for the maintenance of the subject highway, you should also consider suing the contractor who constructed or worked on the highway in the appropriate circumstances. The contractor, unlike the government entity, does not get the benefit of sovereign immunity and statutory caps. See O.C.G.A § 50-21-22 (7).

slope and the placement of drains, curbs, gutters and other drainage features. You will also want to obtain all documents relating to pipe and road inspections and storm patrols performed by the Department of Transportation.¹¹

1. Depositions

In most wet weather cases, you will probably want to depose the members of the highway maintenance crews responsible for the area where the wreck occurred. For highways that are controlled and maintained by the Georgia Department of Transportation, each County has a highway maintenance crew. The maintenance crew members are charged with inspecting the highway for hazards and defects such as clogged drains. The members of the highway maintenance crews typically are not engineers, but are trained to identify and address – in the short term – road hazards such as excessive accumulations of water.

Crew members are specifically charged with inspecting State routes for unsafe water accumulations during rain storms while on “storm patrol.” The maintenance crew is responsible for addressing water accumulations as may be appropriate, including reporting the existence of the hazard, digging a weep hole, placing warning signs, or, in extreme cases, closing a travel lane. The crew members identify an “excess” accumulation of water in most cases simply by observing the area. If slow moving or standing water is apparent, the area is considered to be retaining an “excess” amount of

¹¹With respect to highways maintained by the Georgia Department of Transportation, the State requires documented, day time inspections of the State highway system on an annual basis. The State further requires documented biennial pipe inspections of drainage structures. The State also requires maintenance crew members to perform “storm patrols” of the State Highway system where maintenance crews ride the State routes during rain and storm events specifically looking for, among other hazards, excess water accumulations on the travel lanes.

water. One of the key aims in the crew member depositions is establishing the frequency or infrequency of inspections in the area. If the area has an issue that can be expected to produce recurring water accumulations each time it rains (such as an insufficient cross slope) then the failure to identify, address and remedy the issue timely is indefensible in light of the D.O.T.'s storm patrol duties.

You will also want to depose the District Maintenance Engineer after you have deposed the crew members. The District Maintenance Engineer has the authority to order maintenance repairs to a given area that could correct potential hazards such as an improper cross-slope or an improperly sloped gutter through resurfacing or grinding. Establishing these maintenance solutions gives the jury an understanding of routine and tangible solutions that are regularly employed by the D.O.T. whose job it is to keep the highways safe from water hazards.

In taking the deposition of the driver of the vehicle that lost control, be sure to get a detailed description of the manner in which the loss of control occurred. Most drivers who experience hydroplaning describe feeling like the vehicle was "on ice" and sliding or that the vehicle "lifted up" and that there was no control of the vehicle.¹² The driver may testify that he or she heard the water splashing up under the car. It is important to establish whether the driver made any steering inputs or whether any other influences contributed to the wreck such as an avoidance maneuver. You will also want to know the driver's speed at the time of the loss of control and his or her position on the road both longitudinally and laterally. It can be helpful to determine whether the driver observed any warning signs in the area about the potential for water accumulations and if not,

¹² Drivers who lose control due to hydrodynamic drag describe feeling a jerking of the steering wheel in the direction of the accumulated water.

whether such signs would have influenced the driver's behavior. The D.O.T. has warning signs available which specifically warn motorists of water hazards.

2. Experts

In the *Mitcham* case we employed an accident reconstructionist, a hydrologist, a highway design and maintenance engineer, a fleet maintenance expert and a forensic meteorologist. While several of the experts had overlapping expertise, we limited each to a given area.

In proving the *Mitcham* case we utilized the accident reconstructionist to identify a 300 foot area within which the vehicle lost control and to identify the cause of the wreck. The reconstructionist in the case will need to know the speed and weight of the vehicle, the tread depths of the tire, a range of water depths suspected on the road, and the locations of the water on the highway. The reconstructionist can then determine whether the vehicle lost control more likely than not as a result of a water accumulation.

Your highway design engineer can guide you through the maze of highway design standards (federal and state) that applied at the time of the construction of the subject highway.¹³ Using a qualified highway design engineer is a must. You should use the highway design and maintenance expert to identify and explain the nature of the highway

¹³ Remember that under the Georgia Torts Claims Act the State is only liable for highway *design* claims when it is shown that the highway was not designed in substantial compliance with generally accepted engineering or design standards in effect at the time the highway was first designed. O.C.G.A. § 50-21-24 (10). Thus, you will want to have your design engineer to obtain copies of all applicable highway design manuals and standards at the time of the highway's design and have those in his or her file to avert a *Daubert* challenge and provide independent support for the opinions advanced. Unlike design defects, the D.O.T.'s maintenance duties are always evolving and failure to correctly maintain the highway can impose liability on the D.O.T. It is important to distinguish between true design issues as opposed to maintenance issues in marshalling your proof.

defect at issue and to provide support for the governing standards applicable to the defects at issue.

Using a hydrologist is very helpful, though perhaps not absolutely mandatory, to preparing a hydroplaning case. A hydrologist is an engineer that can calculate and model the expected flow and depths of water over a given terrain under various rain events. The hydrologist will perform a detailed survey of the area including not only the slope of the travel lanes, but also of the entire area that could potentially direct water to the travel lanes. The hydrologist can then calculate and model the direction of the water flow, the areas of accumulation, and the expected water depths under various rain intensities. The hydrologist should also prepare cause and effect models to demonstrate the effect the presence or absence of a given highway defect will have on the retention of water on the highway travel lanes. Illustrating this cause and effect is key to proving the highway defect identified by the highway design and maintenance expert, in fact, resulted in an increase in the amount of water on the highway. Further, the hydrology models graphically identify where the water would have accumulated on the highway on the day of the wreck and therefore can assist the accident reconstructionist in determining more likely than not whether the loss of control was in an area of excess accumulation.¹⁴

Finally, as previously discussed, a forensic meteorologist should be considered to provide interpretation of the radar data, to provide guidance on the likely intensity of the rain, and to tie the radar films to the location of the wreck.

¹⁴In some instances, where the condition of the highway has remained unchanged since the wreck, the hydrologist's work can be confirmed by observation of the area in a rain event. This real world verification makes your hydrologist's modeling virtually unimpeachable.

D. Conclusion

The best hydroplaning cases for a plaintiff involve a defendant who lost control of a vehicle due to a water accumulation and strikes the plaintiff. However, a good case can be made against those responsible for designing, constructing and/or maintaining the highway for an unsuspecting motorist who loses control on account of an excess amount of water. Often, the water accumulation at a given site is a recurring event that has existed unaddressed for an extended period of time. The longer the water problem has gone unaddressed, the more compelling the hydroplaning case becomes.

On a final note, as with any case involving a government entity or actor, plaintiff's attorneys are encouraged to be aware of and carefully consider the *ante litem* notice provisions and other pitfalls associated with entities having the benefit of sovereign immunity.