

## Follow These Safety Rules

Monitor the NOAA Weather Radio All Hazards, or your favorite news source for vital weather related information.

If flooding occurs, get to higher ground. Get out of areas subject to flooding. These include dips, low spots, canyons, and normally dry washes.

Avoid roads already flooded.

Road may be washed out under flood waters. Turn Around Don't Drown™ when you encounter a flooded road.

If heavy rain is forecast or occurring, move your camp site and vehicle away from streams and washes.

Be especially cautious when driving at night when it is harder to recognize flood dangers.

For more information:  
 Turn Around Don't Drown™ online Toolbox - <http://www.weather.gov/os/water/tadd/>  
**FLASH** – <http://flash.org/video.php>

### Partners

American Association of Motor Vehicle Administration  
 Federal Alliance for Safe Homes



# When flooded...



Photo: Marvin Nauman, FEMA

# Turn Around Don't Drown!



American Association of Motor Vehicle Administrators

**Turn Around Don't Drown™** is a National Oceanic and Atmospheric Administration trademark.

DEPARTMENT OF COMMERCE  
 National Oceanic and Atmospheric Administration  
 National Weather Service

## Turn Around Don't Drown™

In direct response to so many unnecessary vehicular-related flood deaths, the National Weather Service developed a national campaign called, “**Turn Around Don't Drown™**.” The campaign aims to educate motorists of the dangers of driving across flooded roads.

### Dangerous Water

“I urge all Texans to realize the dangers of crossing flooded roadways and respect the barricades put in place by officials to protect Texans' lives. Remember these words: **Turn around don't drown,**” (Governor Rick Perry, Press Release, July 7, 2010).

Words to live by for all motorists. On average, nearly 100 people drown every year in floods-more than half are caused by motorists trying to drive through flooded roads. Too often, motorists across the nation find themselves in trouble:

**Indiana**--a pregnant woman and her 7-year-old daughter were rescued when their vehicle became stranded on a flooded road.

**Georgia**--a 39-year-old woman drowned in her minivan when flash flooding trapped her in her vehicle.

**Arizona**--a swift water team rescued a man from a car stranded in a wash after he drove past a “Flood Area” sign.

**Forces on Vehicles Crossing Streams**

The car will be carried when:  
Buoyancy force **Greater Than** Vehicle Weight

Vehicle Weight ↓  
Buoyancy Force ↑  
Friction Force ←  
Stream Force →

There is no friction force once the vehicle is lifted off the road  
Nearly half of all flood fatalities are vehicle related

including SUVs, in just six inches of water, while 18-24 inches of moving water will force a vehicle off the road. The menace is buoyant force. When the buoyant force is greater than the vehicle's weight, the vehicle will move with the moving water. Besides the buoyant force, erosion is another significant



concern. Moving water is very powerful and can undermine the integrity of a road. A motorist will be unaware he is driving into a scoured out section of the road.

### Warning and Incident Road Signs

The National Weather Service worked closely with the Department of Transportation Federal Highway Administration to develop two officially sanctioned road signs. Local officials are encouraged to use **Turn Around Don't Drown™** (TADD) signs to mitigate the loss of life and property.



#### Warning Signs

Warning signs are permanent signs alerting drivers to existing or potentially hazardous road conditions. The TADD warning signs are used in locations where the risk for flooding is high, flooding happens very quickly, and/or where flooding occurs in isolated locations when emergency officials don't have time to post an incident sign.



#### Incident Signs

Incident signs are temporary signs posted on an as-needed basis. Incident signs should be deployed when a natural disaster (flood or flash flood) or other unplanned event impedes the normal flow of traffic.

The Manual on Uniform Traffic Control contains provisions for traffic control devices, including size of the sign, color, and shape. Standards for both incident and warning signs can be found at: <http://mutcd.fhwa.dot.gov>

Information for developing **Turn Around Don't Drown™** signs can be found at the National Weather Service **Turn Around Don't Drown™** Toolbox: <http://www.weather.gov/os/water/tadd/>