

AUTOMOTIVE INDUSTRY
CONCERNS REGARDING
HANDLING, DISPOSAL
AND REPAIR OF
FLOOD VEHICLES
FROM TEXAS AND
LOUISIANA FOLLOWING
HURRICANE HARVEY

Analysis of health risk to workers
and persons in contact with flood vehicles AND
fraud protection information from the influx of
flood vehicles on the market.

EDITION V1-2017

POSTED: SEPTEMBER 7, 2017



COORDINATING COMMITTEE FOR AUTOMOTIVE REPAIR

OVERVIEW

HURRICANE HARVEY AFFECTED ONE OF THE HEAVIEST POPULATED REGIONS IN THE HISTORY OF U.S. NATURAL DISASTERS. IN THE WAKE OF RECOVERY, EXPERIENCE GAINED IN PREVIOUS NATURAL DISASTERS HAS PROVIDED ADDITIONAL RESOURCES AND MORE IMMEDIATE AVAILABILITY OF INFORMATION.

THIS EXPERIENCE MAY IMPROVE HANDLING OF FLOOD AFFECTED VEHICLES BY THE INSURANCE, AUTO AUCTION, TOW, COLLISION REPAIR, AUTO RECYCLING AND MECHANICAL SERVICE SEGMENTS OF THE AUTO REPAIR INDUSTRY, AS WELL AS THE FEDERAL, STATE AND LOCAL GOVERNMENT AGENCIES THAT REGULATE THE INDUSTRY.

DOCTORS WARN THAT RESIDENTS ARE NOT OUT OF THE WOODS FOR OTHER HEALTH HAZARDS SUCH AS MOLD GROWTH AND BACTERIA SUCH AS COLIFORM AND E. COLI AS WELL AS THE PRESENCE OF PETROLEUM PRODUCTS IN FLOOD WATER TRAPPED IN POCKETS.

DISCLAIMER: IN ORDER TO PRODUCE TIMELY INFORMATION FOR THE AUTOMOTIVE INDUSTRY THE DATA CONTAINED HEREIN MAY OR MAY NOT BE COMPREHENSIVE. ADDITIONALLY, INFORMATION IS CHANGING RAPIDLY. AS THE RECOVERY PROCESS PROCEEDS, SO WILL THE RECOMMENDATIONS AND INFORMATION IN THIS REPORT. WHEN IN DOUBT, PROCEED WITH CAUTION AND SEEK ADDITIONAL RESOURCES FOR MORE INFORMATION. BEST PRACTICES AND OTHER RECOMMENDATIONS ARE EXPECTED TO EMERGE, AND THIS DOCUMENT MAY BE UPDATED AS NECESSARY.

THIS IS THE FIRST VERSION OF THIS DOCUMENT TO BE POSTED.

Subsequent versions will be posted at www.ccar-greenlink.org.

The Coordinating Committee For Automotive Repair is a national not-for-profit corporation, established in 1994, and its constituents represent all segments of the automotive industry. CCAR®'s mission is to provide consistent and compliant Safety and HazMat training, as well as Education and Environmental best practices for the global motor vehicle industry.

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COORDINATING COMMITTEE FOR AUTOMOTIVE REPAIR

EXECUTIVE SUMMARY

Goals of This Document:

1. To inform companies and workers as to the best practices in handling vehicles coming from the flood waters specific to those in Texas and Louisiana affected by Hurricane Harvey.
2. To inform affected industries that are most likely to encounter vehicles from the Hurricane Harvey aftermath.

Hurricane Harvey: Hurricane Harvey made landfall near Corpus Christi, TX on Friday, August 25, 2017. Harvey's winds reached Category 4 levels. It's the first time in 56 years that a major hurricane (Category 3 or stronger) made landfall in Texas. More than 30,000 people are believed to have fled to Houston shelters while an untold number of other people were displaced.

Hurricane Harvey's price tag could dwarf previous natural disasters in the U.S., according to an estimate from weather firm AccuWeather;

- #1 – Hurricane Harvey, \$160 Billion
- #2 – Hurricane Katrina (2005), \$49.8 Billion
- #3 – Hurricane Andrew (1992), \$24.5 Billion

The storm was less than an inch short of breaking the U.S. record for rain dropped by a hurricane or tropical storm, which was set in 1950 in Hawaii. Rain totals as of August 30th were;

- 51.9" – Cedar Bayou, TX (a continental U.S. record)
- 31.3" – Houston, TX
- 22.8" – Galveston, TX
- 19.6" – College Station, TX
- 15.6" – Victoria, TX
- 10.2" – Austin, TX

Harvey has dumped about 19 trillion gallons of rain over southeast Texas and another 5.5 trillion gallons over Louisiana.

Reference: <https://www.usatoday.com/story/news/2017/08/30/charting-hurricane-harveys-jaw-dropping-size-and-destruction/617923001/>



Scope: In the days since Hurricane Harvey, an alarming prediction has flashed across the Internet: *Hundreds of thousands of flood-damaged vehicles will inundate the nation's used-car market, and buyers might not be told which cars have been marred.* There are scores of cars and trucks with water up to their windows and in some cases over the hood and roof.

In fact, the flooding is so extensive, Cox Automotive estimates a half-million vehicles may wind up in the scrap yard. "This is worse than Hurricane Sandy," said Jonathan Smoke, chief economist for Cox Automotive. "Sandy was bad, but the flooding with Hurricane Harvey could impact far more vehicles." After Hurricane Sandy battered New York and New Jersey in October 2012, an estimated 250,000 vehicles were scrapped.

While the New York metropolitan area has more residents than Houston, the number of vehicles per household is much higher in Houston. That means more cars, trucks and SUVs were parked on the street and in garages when Harvey swamped the city and surrounding areas. With so many vehicles in the flood zone, auto insurers will be busy handling claims and cutting checks so flood victims can buy another car or truck.

Reference: <https://www.cnn.com/2017/08/29/a-half-million-flooded-cars-and-trucks-could-be-scrapped.html>

Hundreds of thousands of people have been affected by deadly flooding caused by Harvey, and the dangers posed by flood waters are not just drowning and structural damage; there's also a dangerous health risk. There's a reason why flood waters commonly look so dirty and unsanitary; they're often contaminated by sewage and other hazardous chemicals.

Exposure can lead to:

- skin rashes
- diarrhea
- stomach and respiratory problems
- and even diseases like cholera (in extreme cases)

That's why you must avoid contact with flood waters at all times.

- Do not come in contact with any object that has been submerged under water until they have been thoroughly cleaned
- Do not consume any food or drink that have potentially been contaminated
- Be extra-careful when washing your hands
- Keep any wounds or open sores covered

Reference: <https://www.accuweather.com/en/videos/harvey-flooding-poses-significant-health-risks/a1n2noyze6ap-u8iuxclay0xj13gsbyf>



Concern: Since Hurricane Harvey unleashed record-setting flooding, power outages and wind damage on the residents of Texas and of Louisiana, and although recovery efforts are underway, doctors warn that residents are not out of the woods for other health hazards such as mold growth and bacteria such as coliform and E. coli as well as the presence of petroleum products in flood water trapped in pockets and puddles.

Mold Causes Breathing Problems. With flooding comes mold, and it can make victims sick even if it's invisible, doctors warned. Dr. Christopher Portier, former director of the Centers for Disease Control and Prevention's Center for Environmental Health, said mold can trigger asthma and even cause headaches when it's in a certain growth phase. Visible mold can be wiped away with a bleach and water mixture. In households, Portier suggested removing and discarding items that came into contact with floodwater and cannot be washed thoroughly, such as mattresses, carpeting, rugs and stuffed animals. This same precautionary measure can be applied to the interior material in a vehicle.

Bacteria and E. coli. A Texas A&M University analysis of floodwater samples from the Houston area showed E. coli levels that are 125 times higher than is considered safe for swimming. Terry Gentry, an associate professor in the university's Department of Soil and Crop Sciences, says even walking through floodwater could lead to infections and other problems. Gentry says tests from a sample in Cypress, a suburb northwest of Houston, showed bacteria levels 15 times higher than acceptable for wading. E. coli in water isn't what causes illnesses but is an "indicator bacteria" that signals the presence of fecal matter, which can make people sick.

Reference: <https://www.usnews.com/news/best-states/texas/articles/2017-08-31/latest-beaumont-texas-loses-water-supply-due-to-harvey>

Approximately one week after Superstorm Sandy made landfall in 2012, EPA's boat, 'The Clean Waters,' was used to take water quality samples in coastal waters of New Jersey from Sandy Hook to Seaside Heights. There were 16 samples of ocean water collected 1-3 miles off the coast to determine potential impacts from the releases of raw sewage as a result of Hurricane Sandy. The samples were analyzed for ENTEROCOCCUS, a common group of bacteria associated with animal and human waste. The established limit for swimming is 104 bacteria colonies per 100 mL of water. ENTEROCOCCUS levels from the EPA's samples were below this limit.

Those Affected: Due to the scope of the disaster, contaminated vehicles and their parts are likely to be distributed over a much larger area than was directly impacted by the hurricane. Current management practices of flood vehicle are to observe the business practices followed in "typical" flood and salvage scenarios. Consideration and training should be given regarding the safety of those who will come in contact with contaminated vehicles. The potential environmental consequences of dealing with these vehicles have not yet been determined. Those most impacted are:

- Auto Auctions
- Auto Dealerships (new and used)
- Mechanical Repair
- Auto Recycling
- Police/Fire/Rescue
- Military
- Tow and Recovery
- Municipal Employees
- Insurance Claims Staff and Appraisers
- Collision Repair



Verification of Vehicle Status by VIN

Since the floods following Sandy & Katrina the U.S. government has updated the National Motor Vehicle Title Information System. NMVTIS is designed to protect consumers from fraud and unsafe vehicles and to keep stolen vehicles from being resold. Consumers can use NMVTIS to access important vehicle history information at <http://www.vehiclehistory.gov>.

NMVTIS serves as a repository of information on salvage vehicles, including those vehicles determined to be a “total loss.” This repository is then used by states and consumers to ensure that salvage vehicles, including those vehicles determined to be a total loss by insurance carriers, are bought and sold with full disclosure. NMVTIS also serves as a tool for insurance companies to investigate vehicle histories.

NMVTIS Reporting Requirements For Insurance Carriers

Insurance companies and certain self insurers must report monthly to NMVTIS on the junk and salvage automobiles they obtain. The Anti-Car Theft Act defines a salvage automobile to mean “an automobile that is damaged by collision, fire, **flood**, accident, trespass, or other event, to the extent that its fair salvage value plus the cost of repairing the automobile for legal operation on public streets, roads, and highways would be more than the fair market value of the automobile immediately before the event that caused the damage.” The Department of Justice has also determined that this definition includes all automobiles found to be a total loss under the laws of the applicable state, or designated as a total loss by the insurance carrier under the terms of its policies, regardless of whether an insurance carrier re-titles the vehicle into its name or allows the owner to retain the vehicle. The determination that “total loss” is included in the definition of salvage is to ensure that the reporting of salvage automobiles is comprehensive. DOJ strongly encourages insurers to include the primary reason for the insurance carrier's designation of salvage or total loss in this reporting.

Reference: http://www.vehiclehistory.gov/nmvtis_insurance.html

Tools To Determine Flood Damage

Several years ago, in the aftermath of Hurricane Katrina, National Insurance Crime Bureau (NICB) worked with law enforcement officials in Louisiana and Mississippi to inspect hundreds of thousands of vehicles damaged by flood waters. NICB then established an unprecedented consumer protection service known today as VINCheckSM. **VINCheck** allows individuals to check to see if a vehicle has ever been declared as salvage by one of our participating member insurance companies. It also alerts users if a vehicle is an unrecovered stolen vehicle. VINCheck remains a free service available to the public at www.nicb.org.

Reference: <https://www.nicb.org/newsroom/news-releases/fraud-in-aftermath-of-hurricane-sandy>

The NICB cautions that the database does not determine the scope of the damage to any particular vehicle. Therefore, some listed vehicles may have had no damage while others have had extensive damage and are no longer safe to operate.



Texas Department of Motor Vehicles (TxDMV)

<http://www.txdmv.gov>

When looking to purchase a used vehicle you might see one with a rebuilt title. The term “rebuilt” varies slightly from state-to-state, but is generally used to describe a salvaged vehicle that was repaired or restored. The vehicle previously carried a salvage title after it was damaged and considered totaled and inoperable. However, the vehicle was restored and title changed from salvage to rebuilt.

<http://www.txdmv.gov/motorists/buying-or-selling-a-vehicle/title-check-look-before-you-buy/rebuilt>

Louisiana Office of Motor Vehicles (LaOMV)

<http://www.expresslane.org/Pages/default.aspx>

In the state of Louisiana, insurance companies have the authority to declare a vehicle a total loss if your automobile is in an accident. If your insurance claims the total loss or the word salvage has been stamped on the title, it is illegal to operate your vehicle on any road in Louisiana. What this means is that your original registration on your vehicle has been cancelled, and you'll need to remove your plates off your automobile.

<http://louisianadriverslicense.org/titles/salvage-title.html>

WORKER SAFETY

Companies are required by law to inform workers of potential health risks (Public Law 91-596, The OSHA Act of 1970). For those who will recover, transport, inspect or work on flooded vehicles, the following should be considered:

- Avoid skin contact with ANY water or fluids that may be left in the vehicle.
 - Use gloves appropriate for touching anything that has come in contact with waste matter. Nitrile membrane type gloves are especially effective and may be used under work gloves. Dispose of nitrile gloves after each use. Do not reuse.
 - If working in the flooded area, boots and hip waders will protect feet and legs but should be washed with soap and water and a mixture of bleach and water after each use. Upon completion of work, these should be discarded due to the incidence of E. coli.
- If flood water, residue or sludge comes in contact with the skin, wash area immediately with hot water and soap and, in the case of cuts, use a disinfectant.
- When in proximity of or contact with flood water, residue or sludge avoid wiping hands to mouth, nose or eyes. These areas are primary receptors for bacterial infection. Appropriate eye protection is recommended, as is ongoing appropriate sterilization of eye protection if contact with contaminant is repeated.



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- Atomization and inhalation: Past practices have been to use high-pressure air to blow water from recesses and hard-to-get-to spots in attempts to dry out flood vehicles. If the vehicle is suspected to have come from flooded areas, workers should wear full protective clothing and eye protection, and they should be fully informed as to how to wash off afterwards and how to clean and dispose of the clothing (if not reusable). Use a NIOSH-approved respirator when working with vehicles or parts that may contain water, sludge or residue. Clean and decontaminate respirator filters per manufacturers' recommendations.
- The most likely places in a flood vehicle for water to stand and blood borne pathogens to exist are:
 - All interior pieces including trim, carpets, jute pads and anything that can harbor bacteria. There are no known, readily available processes that can return interior "soft" parts back to a clean, hygienic and sanitary condition.
 - Water residue and/or leftover sludge, which may remain for long periods of time in enclosed places such as doors, frame rails, rocker panels, gas tanks and quarter panel/trunk floor low areas.

Workers exposed to flooded vehicles should watch for symptoms of illness (nausea, diarrhea, etc.) and seek medical care as needed.

HANDLING OF VEHICLES

Over the years, CCAR has received inquiries about the proper handling and disposal of vehicles. In turn, the organization has previously contacted the CDC, EPA and others. **As of this writing, there is no recommended method or procedure to restore submerged vehicles from flooded-affected areas to pre-accident condition.**

CCAR continues to consult with these interested parties to determine best practices in light of the situation, but – understandably – vehicles were not the major concern immediately after the disaster. As more information becomes available, it will be added to updated versions of this document and posted at www.ccar-greenlink.org.

Think Safety First: Because insurers are expected to make settlement decisions on a large number of vehicles, many of these vehicles may be shipped to other parts of the United States. Mechanics, collision repairers and detail shops should be on the alert for vehicles coming from Texas and Louisiana and use appropriate safety measures. In most states, the law requires that the vehicle be noted in some manner as a "flood vehicle." Because some cars involved in the flood are registered to out-of-state visitors, it is possible that flood vehicles without TX or LA titles may be moved and be sold without declaration as to where the vehicle was flooded. Because of the possibility of bacterial infection, all workers should use maximum personal protection with any flooded vehicle and be well trained.



NADA Offers 10 Inspection Tips to Detect Flood-Damaged Vehicles

Once the clean-up, reconditioning and rebuilding begins, NADA is concerned that water-damaged vehicles may return to the marketplace. Nefarious individuals may buy these vehicles, thoroughly clean them and attempt to resell them.

While there is no sure way to know if a vehicle has been damaged by flooding, NADA offers 10 inspection tips that may be used to detect water damage. A prospective buyer can spot a flooded vehicle by following these simple steps:

1. Check the vehicle's title history by VIN through commercially available vehicle history reports from Experian's Auto Check (www.autocheck.com), or through the National Insurance Crime Bureau's VinCheck (https://www.nicb.org/theft_and_fraud_awareness/vincheck). The report may state whether a vehicle has sustained flood damage.
2. Examine the interior and the engine compartment for evidence of water and grit from suspected submersion.
3. Check for recently shampooed carpet.
4. Look under the floorboard carpet for water residue or stain marks from evaporated water not related to air-conditioning pan leaks.
5. Inspect for rusting on the inside of the car and under interior carpeting and visually inspect all interior upholstery and door panels for any evidence of fading.
6. Check under the dashboard for dried mud and residue, and note any evidence of mold or a musty odor in the upholstery, carpet or trunk.
7. Check for rust on screws in the console or other areas where the water would normally not reach unless submerged.
8. Look for mud or grit in alternator crevices, behind wiring harnesses and around the small recesses of starter motors, power steering pumps and relays.
9. Complete a detailed inspection of the electrical wiring system looking for rusted components, water residue or suspicious corrosion.
10. Inspect the undercarriage of other components for evidence of rust and flaking metal that would not normally be associated with late model vehicles.

While these inspection suggestions will not detect flood damage in every case, they do provide some information to protect the consumer from purchasing a vehicle damaged by water or flood.

Reference: <https://www.nada.org/CustomTemplates/DetailPressRelease.aspx?id=21474842270>



ADDITIONAL INFORMATION

OSHA – Flood Information

https://www.osha.gov/OSHA_FAQs.html#collapse93

Here are frequently asked questions that will help workers understand how floods and responding to floods may affect their health and safety.

OSHA – Flood Cleanup Fact Sheet

<https://www.osha.gov/OshDoc/floodCleanup.html>

What do workers need to know when entering an area that has been flooded? This OSHA fact sheet addresses the risks of floodwater and protection tips.

OSHA – Fungi Hazards and Flood Cleanup

http://www.osha.gov/OshDoc/data_Hurricane_Facts/Bulletin3.pdf

Flood conditions contribute to the growth and transmission of many kinds of fungi, some of which can cause sickness. This OSHA fact sheet is for those workers who are at increased risk of exposure to airborne fungi and their spores because they often handle moldy building materials, decaying vegetable matter, rotting waste material, and other fungus-contaminated debris.

OSHA – Hand Hygiene and Protective Gloves in Hurricane-Affected Areas

http://www.osha.gov/OshDoc/data_Hurricane_Facts/hand_hygiene_and_gloves.pdf

Preventing or minimizing disease exposure when working in contaminated flood waters is possible by taking various precautions, specifically with proper hand hygiene and the use of protective gloves.

OSHA – General Respiratory Protection Guidance for Employees and Workers

https://www.osha.gov/dts/shib/respiratory_protection_bulletin_2011.html

The information in this OSHA bulletin will provide basic information to workers and employers who may find themselves using respiratory protection for the first time. The guidance provides information on what respirators are, how they work, and what is needed for a respirator to provide protection.

NIOSH –Storm/Flood and Hurricane Response

<http://www.cdc.gov/niosh/topics/emres/flood.html>

Storm and flood cleanup activities can be hazardous. Workers and volunteers involved with flood cleanup should be aware of the potential dangers involved, and the proper safety precautions. Work-related hazards that could be encountered include: electrical hazards, Carbon Monoxide, musculoskeletal hazards, heat stress, motor vehicles, hazardous materials, fire, confined spaces and falls.

EPA – Hurricane Harvey Information

<http://epa.gov/harvey>

In response to Hurricane Harvey, EPA has been supporting FEMA and working closely with federal agencies and the states of Texas and Louisiana to assess damage and respond to environmental concerns. In some areas, storm damage is widespread and the first and immediate priority is the protection of people's health and their safety.



As a proud Alliance Partner, CCAR is pleased to provide the following resource information as supplied to us by OSHA;

OSHA's Key Resources for Printing/Distribution

Keeping Workers Safe during Hurricane Cleanup and Recovery Fact Sheet

- English (FS-3698): [PDF](#)
- Spanish (FS-3699): [PDF](#)

Heat Stress QuickCard

- English (3154): [PDF](#)
- Spanish (3417): [PDF](#)
- Vietnamese (3389): [PDF](#)

Disaster Cleanup and Recovery PPE Matrix

- English (FS-3898): [PDF](#)
- Spanish (FS-3899): [PDF](#)

Mold Hazards during Disaster Cleanup

- English (FS-3713): [HTML](#) & [PDF](#)
- Spanish (FS-3901): [PDF](#)

EPA – Mold Resources

<http://www.epa.gov/mold/moldresources.html>

It is important to dry water damaged areas and items within 24-48 hours to prevent mold growth. Ten Things You Should Know About Mold

EPA – Natural Disasters

<http://www.epa.gov/naturaldisasters/flooding.html>

Avoid contact with flood water due to potentially elevated levels of contamination associated with raw sewage and other hazardous or toxic substances that may be the flood water.

HOW TO AVOID FLOOD-DAMAGED VEHICLES

<http://www.dmv.org/how-to-guides/flood-damaged-vehicles.php>

The reason flood-damaged vehicles are not ideal for purchase is that engine, fuel, transmission, brakes, interior climate, and other control systems may be damaged. In addition, although the interior of the vehicle may be dry on the surface, moisture deep down in the seats can cause rotting. Cars and trucks were not meant to be submerged in water. Potential damage to flooded vehicles can show up in:

- Vehicle electronics, including critical engine controls or brake signals
- Dash boards, as damage or rotting
- Safety systems, such as airbags and sensors
- Interior carpet, upholstery, or a roof that is still moist from being soaked
- Parts and components that are rusted and corroded, including braking and suspension systems



THE POTENTIAL SAFETY HAZARDS OF FLOOD-DAMAGED VEHICLES

by the National Motor Vehicle Title Information System. Read the [NMVTIS Advisory](http://www.bja.gov/Programs/FloodDamagedVehicles_NMVTIS.pdf) at www.bja.gov/Programs/FloodDamagedVehicles_NMVTIS.pdf

Thousands of people in Texas and Louisiana have suffered property damage and loss, widespread power outages, and major flooding caused by Hurricane Harvey. As recovery and restoration efforts get underway, it is extremely important for consumers to be aware of the safety impact of floods on their vehicles. Severe water damage can make vehicles' electrical systems, including their airbag sensors, prone to failure. When a vehicle's electrical systems have been compromised, it may no longer be safe or roadworthy. After Hurricane Katrina, for example, truckloads of flooded vehicles were taken out of Louisiana to states as far away as the upper Midwest, where they were dried out, cleaned, and sold. Purchasers of those vehicles may not have known that the vehicles had endured a saltwater flood that damaged their electrical systems.

NICB WARNS OF POST-DISASTER SCAMS IN AFTERMATH OF HURRICANE HARVEY

<https://www.nicblog.org/2017/08/25/hurricane-harvey-victims-avoid-post-disaster-scams/>

As Texas and Louisiana recovers from Hurricane Harvey, personnel from the National Insurance Crime Bureau (NICB) stand ready to assist law enforcement agencies, insurance and car rental companies with identifying and cataloging vehicles damaged by Hurricane Harvey with the goal of preventing damaged vehicles from being resold to unsuspecting consumers in the future.

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