

# SAFETY CONCERNS REGARDING HANDLING, DISPOSAL AND REPAIR OF FLOODED VEHICLES FOLLOWING HURRICANE KATRINA

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Analysis of risk to workers  
and vulnerability of persons coming in contact  
with submerged or flooded vehicles

EDITION 1.2  
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# OVERVIEW

HURRICANE KATRINA HAS IMPACTED MORE VEHICLES THAN ANY OTHER CATASTROPHE PREVIOUSLY FACED BY THE INSURANCE, 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.

DUE TO THE EXTRAORDINARY MIX OF WATER, POLLUTANTS AND BIOLOGICAL HAZARDS, VARIOUS MEMBERS OF THE INDUSTRY HAVE REQUESTED A SYNOPSIS THAT ADDRESSES HANDLING CONCERNS AND PROCEDURES. THIS DOCUMENT ATTEMPTS TO PROVIDE THAT INFORMATION.

DISCLAIMER: DUE TO THE SPEED OF DEVELOPING EVENTS, THIS DOCUMENT MAY NOT BE ALL ENCOMPASSING OR WHOLLY ACCURATE. BEST PRACTICES ARE EXPECTED TO EMERGE, AND THIS DOCUMENT MAY BE UPDATED AS NECESSARY.

Subsequent versions of this document will be posted at [www.ccar-greenlink.org](http://www.ccar-greenlink.org).

The following have provided input for this document:

- U.S. Department of Health and Human Services-Centers for Disease Control and Prevention
- Kansas Department of Health & Environment
- U.S. Environmental Protection Agency, and U.S. EPA Region 7 Office
- Louisiana Department of Public Safety, Office of Motor Vehicles
- Natalie Schoonover and Rod Enlow, Coordinating Committee For Automotive Repair

The Coordinating Committee For Automotive Repair is a national 501(c)(3) not-for-profit corporation, established in 1994, and its affiliates represent all segments of the automotive industry. CCAR®'s mission is to work with the industry around the world, with career and technical schools, and with governments and other organizations to provide best practice information and training, and to measure improvements related to:

- Pollution Prevention (P2).
- Safety for all who repair or maintain vehicles as a profession, as well as those who work in related businesses.
- Reduction of lost workdays due to accidents or job-related health issues.
- Decreases in costs and liability exposure.
- Reduction in costs of training in these areas.

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## EXECUTIVE SUMMARY

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### 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 New Orleans.
2. To inform affected industries that are most likely to come in contact with vehicles from the New Orleans disaster.

**Hurricane Katrina:** The Federal Emergency Management Agency (FEMA) has declared Hurricane Katrina, which struck the gulf coast on August 29, 2005, to be the most destructive and expensive natural disaster to ever to hit the U.S. The hurricane's storm surge caused breaches in the levees surrounding the city of New Orleans, Louisiana, which allowed water to flow unobstructed into the city and flood an estimated 80% of its area. The New Orleans city proper has a population of approximately 500,000.

**Scope:** The number of vehicles remaining in New Orleans may exceed 100,000, including both passenger and commercial vehicles. FEMA has not yet projected a number, and insurers are not yet able to document a specific number of affected vehicles. It is clear the storm and subsequent flooding resulted in catastrophic damage to new and used vehicles left behind.

**Concern:** As of this date, almost half of New Orleans remains flooded, and the pumping of water from the city will not be completed until October. Lake water has mixed with sewage, petrochemicals and other pollutants of all types, as well as biological waste that includes animal and human remains. The floodwaters have tested high for raw sewage, hexavalent chromium, arsenic and lead.

As was widely reported Escherichia coli, (E-coli 0157:h7) has been measured at many times the acceptable level. The potential for disease among evacuees and within the general population is currently being evaluated by FEMA, along with state and local governments. Those persons who will handle flooded vehicles during removal, repair and/or disposal should be clearly informed of personal risk and illness prevention methods. Each flooded vehicle can potentially carry an extraordinary amount of harmful residue.

If the liquid ingredients of the floodwater were placed in a container for shipment, by law the container would have to be labeled a Hazardous Material (specifically a biological hazard). *This does not mean that the affected vehicles cannot be practically evaluated and handled.* It **does** mean that the first concern should be the protection of workers who come in contact with the contaminated vehicles and residues. Specific protections and precautionary measures should be employed to assure the safety of workers.

**Those Affected:** Due to the scope of the disaster, there will be an unprecedented number of vehicles that must be handled. Contaminated vehicles and their parts are likely to be distributed over a much larger area than was directly impacted by the hurricane. Government agencies have not yet formalized a plan for holding or handling the vehicles beyond the business practices followed in "typical" flood 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:

- Police/Fire/Rescue
- Military
- Tow and Recovery
- Municipal Employees
- Insurance Claims Staff and Appraisers
- Collision Repair
- Auto Recycling
- Detail/Cleanup
- Automobile Dealerships (new and used)
- Mechanical Repair
- School Transportation (employees and students)

**Hierarchical Sequence of Flood Vehicle Impact:** In a catastrophe such as Hurricane Katrina, police and military authorities will work their way into the affected areas as the waters recede. Their first objective will be to save lives, then to secure the area from other dangers such as natural gas, gasoline, electrical, chemicals, fire, etc. Following these actions, events related to flooded vehicles become relatively predictable and follow an order similar to this:

- Tow/salvage personnel clear the streets (It is unknown as of this writing where vehicles will be taken, due to the large numbers. Many flooded vehicles may be left in place for an extended period of time.)
- Residents begin to notify insurers of claims.
  - *It is not known how many vehicles are uninsured or will be abandoned without settlements.*
  - *In anticipation of the need for large areas set aside for vehicle storage, the government and insurers will begin to work together to determine storage and disposal for unclaimed vehicles.*
- Insurers will validate claims and assess vehicles as they become available, and settle claims as appropriate.
- Totaled vehicles will be sold to auto recyclers.
- Abandoned vehicles will be held for auction within time frames set by law.\*

**Level of Risk:** The water carries various kinds of toxic pollutants and biohazards; however, there should be no high level of risk for automotive workers *IF they take adequate protection* and are trained and aware regarding the risks associated with these specific vehicles. Although diseases (blood borne pathogens) can be carried in the water and people have been in the water without personal protective equipment, there have been no massive outbreaks of disease reported to date.

**\* The following is from Louisiana Law Authority:**

R.S. 771(18)    R.S.32.774.2    R.S. 32:1261

### **Definition of Water Damaged Vehicle**

Law defines a “water damaged vehicle” as any motor vehicle whose power train, computer, or electrical system has been damaged by flooding.

No Louisiana used motor vehicle dealer, nor any person or entity selling a vehicle in Louisiana, shall transfer, or convey any used motor vehicles to any person without notifying the buyer or receiver of the vehicle in writing of the extent of any water damage from flooding which occurred to the vehicle prior to the transaction. A “disclosure of water damage” statement signed by both the transferor and the transferee must be submitted as a part of the supporting documents surrendered for issuance of title.

No out-of-state used motor vehicle dealer, nor any out-of-state-resident, person or entity, selling a water damaged vehicle to a Louisiana resident, will be required to provide a “water damage disclosure” form, provided supporting documents clearly indicate “WATER DAMAGED”. Out-of-state titles reflecting water damage must also be shown on any subsequent title issued.

If disclosure of water damage is not made at the time the vehicle is transferred, the buyer or receiver of the vehicle may file suit to rescind the transaction within one year of the date of the transaction. See Section IV, Policy/Procedure Statement # 97.0, Section IV-Cancelled/Rescinded Sale.

The water damaged code must be entered on the computer as “WA”, which will brand the title “WATER DAMAGED”. Once the flag is entered on a vehicle record, it will become a permanent part of that vehicle’s history.

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## WORKER SAFETY

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

- Avoid skin contact with ANY toxic 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.
  - 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 high incidence of E-coli.
- If contact with the skin occurs, wash area immediately with hot water and soap and, in the case of cuts, a disinfectant.
- Avoid wiping hands to mouth, nose or eyes. These areas are primary receptors for blood borne pathogens. Appropriate eye protection is recommended, and ongoing appropriate sterilization if contact with the water is repeated.
- Blood borne pathogens can be ingested by coming in contact with of any type of container, including plastic bottle and aluminum cans, drinking cups or any item that can be brought to the mouth.
- 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. The worker 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.
- Exposure to blood borne pathogens in the water can result in:
  - E coli [http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli\\_g.htm](http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_g.htm)
  - Hepatitis <http://www.cdc.gov/ncidod/diseases/hepatitis/>
  - Fungal Infections  
<http://search.nlm.nih.gov/medlineplus/query?DISAMBIGUATION=true&FUNCTION=search&SERVER2=server2&SERVER1=server1&PARAMETER=Fungal+Infections>
  - Tetanus <http://www.cdc.gov/nip/publications/pink/tetanus.pdf>
  - Diarrhea <http://digestive.niddk.nih.gov/ddiseases/pubs/diarrhea/>

- The most likely places for water to sit and blood borne pathogens to thrive are:
  - All interior pieces including trim, carpets, jute pads and anything that can harbor bacteria or blood borne pathogens. There are no known, readily available processes that can return interior “soft” parts back to a clean, hygienic and sanitary condition.
  - Water 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.

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#### HANDLING OF VEHICLES

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CCAR has received several calls asking about the proper handling and disposal of vehicles. In turn, the organization has contacted the CDC, EPA and others. At this point, there is no recommended way to restore submerged vehicles to pre-accident condition.

CCAR is working with these agencies to determine best practices in light of the situation, but – understandably – vehicles have not been their major concern so soon 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](http://www.ccar-greenlink.org).

**Think Safety First:** With the number of vehicles about which insurers are expected to make settlement decisions, it is certain that 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 New Orleans 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 to New Orleans, it is possible that flood vehicles without Louisiana titles may be moved and be sold without declaration as to where the vehicle was flooded. Because of the possibility of blood borne pathogens, all workers should use maximum personal protection with any flooded vehicle and be well trained.

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#### ADDITIONAL INFORMATION

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Salvage Yard Information

<http://www.ccar-greenlink.org/Salvageyard/SalvageYard.htm>

OSHA – Flood Information

<http://www.osha.gov/SLTC/emergencypreparedness/guides/floods.html>

OSHA – Flood Cleanup Fact Sheet

[http://www.osha.gov/OshDoc/data\\_Hurricane\\_Facts/floodcleanup.pdf](http://www.osha.gov/OshDoc/data_Hurricane_Facts/floodcleanup.pdf)

OSHA – Blood Borne Pathogens

<http://www.osha.gov/SLTC/bloodbornepathogens/index.html>

Cleaning Spills of Bloodborne Pathogens

<http://www.biosci.ohio-state.edu/~jsmith/safety/Biosafety/BioSOP/SOPBBPSpill.pdf>

NIOSH – Hurricane Katrina Response: Storm and Flood Cleanup

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

EPA – Fact Sheet: Flood Cleanup

<http://www.epa.gov/iaq/pubs/flood.html>

EPA Announcements

[EPA and Federal Partners Warn of Potential Environmental Health Hazards When Returning to Homes and Businesses After Hurricane Katrina](http://www.epa.gov/epawards/announcements/2005/hurricane_katrina.html)

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### NEW ORLEANS FLOOD VEHICLE SURVEY

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1. In your opinion, should the New Orleans flood vehicle salvage be treated any differently than any other flood disaster salvage?

Yes \_\_\_\_\_ No \_\_\_\_\_ Why? \_\_\_\_\_

2. Do you believe or know of any special process that the vehicle parts structures can be better stripped, handled to be recycled back into industry for use?

Yes \_\_\_\_\_ No \_\_\_\_\_ Why? \_\_\_\_\_

3. Should N.O. vehicle salvage be kept separate from the rest of the flood salvage vehicles?

Yes \_\_\_\_\_ No \_\_\_\_\_ Why? \_\_\_\_\_

4. Should there be a special law/process/identification to prevent re-entry into the re-builder markets across the U.S.

Yes \_\_\_\_\_ No \_\_\_\_\_ Why? \_\_\_\_\_

5. Is prolonged exposure to e-coli, HIV, Hepatitis A, B & C, which has been identified in the N.O. floodwaters, of sufficient concern to consider different approaches to "total loss"?

Yes \_\_\_\_\_ No \_\_\_\_\_ Why? \_\_\_\_\_

6. Should special requirements be established on the sanitizing and cleaning of these vehicles if declared as repairable?

Yes \_\_\_\_\_ No \_\_\_\_\_ What should the requirements be? \_\_\_\_\_

7. Are "hard parts" different? Can power trains, transmissions, axles, suspension be removed, and handled in such a manner as to reenter the salvage market?

Yes \_\_\_\_\_ No \_\_\_\_\_ What processes are important to consider? \_\_\_\_\_

8. Do you think that many of these "hard parts" will ultimately fail due to length of time that the engine or transmission was under water causing interior and exterior corrosion, rusting and swelling of friction materials such as clutch discs?

Yes \_\_\_\_\_ No \_\_\_\_\_ Why? \_\_\_\_\_

9. Does the transportation of New Orleans vehicles have any special issues?

10. What additional questions should CCAR be seeking answers to?

**Please return your response (include additional pages, if needed)  
along with your contact information by fax to 913-681-3033.**