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Agencies tackle massive Gulf Coast waste removal challenge

By Paul Singer, [National Journal](#)

NEW ORLEANS -- When Hurricanes Katrina and Rita ravaged the Gulf Coast, they turned dozens of communities into massive trash heaps. When the winds died down and the flood waters receded, the storms left behind a line of debris some 500 miles long.

By year's end, contractors hired by the Army Corps of Engineers and other government agencies had hauled away some 40 million cubic yards of junk in Louisiana and Mississippi. Even so, millions of cubic yards of debris remained, much of it in houses that will have to be gutted or demolished.

By most estimates, the hurricanes created at least 50 million cubic yards of debris in Louisiana and another 40 million in Mississippi. Trucks will still be carting it away next Thanksgiving.

The Federal Emergency Management Agency calculates that in Alabama and Texas, the storms transformed an additional 12 million cubic yards of bathtubs, tree limbs, car fenders, and smoke alarms into trash. Just how much rubbish is that? Well, the average professional football stadium could hold only about 2 million cubic yards of debris.

To the untrained eye, the rubble that used to be New Orleans's lower 9th Ward looks as if it simply needs to be pushed out of the way by bulldozers to allow new construction to begin. But when waste experts eye the rubble here and in other wrecked neighborhoods, they see something else entirely: a dozen kinds of garbage, each of which needs to be collected and disposed of separately.

Thus, several crews must pick over each pile of rubble, so that they can sort, number (yes, really), and lug the various parts of the pile to the places best equipped to receive them.

Nearly every item in the millions of tons of trash that Katrina and Rita created will be assessed for hazardousness before it ends up in a final resting place -- one of the hundreds of landfills around the region, a hazardous-waste disposal facility, or a recycling plant.

Where Dead Refrigerators Go

Down a dirt road on a Louisiana National Guard outpost, past the Slidell Police Canine Training Range and the recreational paintball field, the U.S. Environmental Protection Agency is operating what looks like a refrigerator graveyard on a former helicopter landing pad. In fact, the site is more like a refrigerator mortuary -- the place where dead appliances are prepped for their final destination in the beyond.

Each day, waste contractors who are scouring the streets of Katrina-ravaged St. Tammany Parish deliver hundreds of refrigerators, ovens, washing machines, and other major appliances. Mortuary overseer Michelle Rogow, an EPA employee from San Francisco, constantly updates a parish map posted on a trailer's wall. Each red dot on the map indicates where a refrigerator or other appliance has been left at a curb.

Each red square signals where hazardous household waste has been sighted. Each pinpointed item is logged into a database and tracked until it is delivered to the helicopter field. Only then is it crossed off the map. Since the first week of October, when the EPA's collection process began, Rogow's site has received more than 47,000 "white goods" and 71,000 containers of hazardous material.

The logistics of getting all of this junk to the mortuary demonstrate the enormosity of the debris management problem. After the storms, many people returned to their houses and dragged most of the contents to the curb. The EPA, the Army Corps of Engineers, and local waste-management authorities explore every street to assess the waste piles.

The Corps handles debris management for FEMA, and its contractors haul off nonhazardous debris. But if a pile contains a refrigerator or another hazard, the Corps tells the EPA to pick it up.

Items delivered to the helicopter pad are inspected for toxicity as they are unloaded. Refrigerators are emptied of their rotted food, then power-washed with bleach. The Freon or other coolant is drained for recycling, and the ruined appliance is piled on a heap to be crushed into metal bales.

A scrap-metal dealer buys the compacted remains and hauls them away. The state Department of Environmental Quality estimates that Louisiana will recover 1 million pounds of Freon, a fluorocarbon that can damage the ozone layer if it's released into the environment.

Other hazardous materials -- paint, pesticides, solvents, and the like -- are separated, sampled, and placed in safe containers. They are then transferred to a licensed hazardous-waste disposal site. Televisions and computer monitors are pulled out for collection and recycling. The EPA estimates that the typical TV contains 4 pounds of lead, which can cause brain damage if it leaches into drinking water.

"We are literally managing individual pieces of people's stuff," Rogow said.

Chuck Brown, state assistant secretary of environmental quality, said that Louisiana may ultimately retrieve and dismantle 1 million appliances, each of which will be tracked individually, sorted by several contractors, and emptied largely by hand. The EPA is running half a dozen hazardous-waste and appliance mortuaries around the state, at a cost of about \$2 million a day.

The Waste Doctors

On a blustery December morning, a small EPA crew gathered in the parking lot of an unremarkable office park in eastern New Orleans. The cluster of low, black-glass buildings had been battered by the storm and then gutted by looters and contractors. Now, piles of debris sat on the pavement. The debris contractor hired by the Army Corps of Engineers could not haul the trash away until the EPA found and removed anything dangerous.

Most of the office-park mess was no different from countless other rubble piles around town -- furniture, books, magazines, sodden chunks of drywall, sections of carpet. But because these office suites housed medical professionals, the waste also included hazardous medical debris. The EPA crew in white hazard suits and yellow boots picked through the junk with handheld grabbers, retrieving bottles of toxic chemicals, biological waste, needles, and several canisters of compressed oxygen, which explode if they're crushed.

As the workers finished picking over a section of the pile, a small backhoe spread out the remains so that the workers could see any hazardous materials they had missed. The property owners "probably hired people to gut the office, and they did not distinguish between drywall and blood products," said Brad Stimple, EPA's on-scene coordinator for this operation.

Stimple said that EPA crews have visited dozens of small commercial locations like this one. Typically, one site yields enough hazards to fill two dozen special cardboard boxes, each the size of a nightstand.

But like all other government-led cleanup crews, Stimple's is allowed to sort through only what property owners have dragged out to the curb. Officials throughout the region stress that, except in extraordinary circumstances, they are not authorized to remove anything from private property without the owner's permission.

For instance, one medical lab in the office park that Stimple's crew was scouring that December day had been torn apart by the storm and apparently looted, but had not yet been emptied by the owner. The hurricane had wrenched the door from its hinges.

Inside the lab, vials of who-knows-what were strewn everywhere. A poster ominously warned of "blood-borne pathogens." Yet Stimple and his crew had no authority to enter. As renters and property owners return home and begin to clean up, they dump new piles of debris at the curb. At some point, the feds will declare their job done and local officials will be left to cope with whatever garbage is left. Even now, some officials wonder which trash is FEMA's responsibility.

Marnie Winter, director of environmental affairs for Jefferson Parish, just west of New Orleans, said, "FEMA will not authorize pickup of new-construction debris, but it will be pretty hard to determine which is which" if one homeowner is tearing out flood-damaged walls and a neighbor is throwing out scraps from a remodeling project unrelated to the storms.

Indeed, Axel Hichos and his Boston-based crew from Trident Environmental Group, a subcontractor for the Corps, spent a recent Wednesday afternoon collecting the asbestos tile -- and only the asbestos tile -- from a debris pile in front of a house on New Orleans's Lowerline Street in the city's southern bulge along the Mississippi River.

That neighborhood suffered little storm damage and no flooding. But many roofs need repairing, and some residents have taken the opportunity to renovate or clear out their houses. The debris pile that Hichos and his crew were tackling was, according to neighbors, the result of an eviction and a renovation, not an inundation. "We'll come back through here in three days, and there will be more piles," Hichos predicted.

Although the collapse of the World Trade Center on 9/11 created 2 million cubic yards of rubble, all of that debris was concentrated in a few square blocks of Lower Manhattan. Hurricanes Katrina and Rita, by contrast, spread their destruction over thousands of square miles.

Every town in the storms' paths now has hazardous hotspots that used to be photo shops, drycleaners, hardware stores, or nail salons. Toxic chemicals are hidden under heaps of brick, wood, and wallboard.

Josie Clark, an EPA employee from Chicago, is heading a "school assessment group," a 10-member team that searches storm-tossed Louisiana communities for schoolroom hazards, mostly chemistry labs with collections of toxic materials in various states of disarray and destruction. By late December, Clark's team

had worked its way through 40 schools that officials hope to reopen. Schools beyond repair will be searched later.

Many of the cleanup jobs involve coping with stomach-turning stench. Rick Tillman, a Corps debris specialist, won't soon forget the New Orleans meat-storage facilities where the loss of power caused tons of chicken and seafood to rot. The Corps, worried that the carcasses posed a health threat, hauled 50 million pounds of putrid meat to a special dump in lined trucks that had to be decontaminated before they could return to the roads. Tillman says that his truck stank for weeks.

And then there are the wrecked vehicles. In Louisiana alone, officials expect they will have to dispose of 350,000 cars and perhaps 37,000 boats. Each will be tagged, towed, disassembled, drained of petroleum products and other hazardous waste, stripped of recyclable materials, and finally crushed.

A FEMA spokesman in Mississippi pointed out that several hundred cars and boats have to be dredged up off the coast before being tagged, towed, and all the rest.

How Much Wood Could a Termite Gnaw?

By Army Corps of Engineers estimates, Katrina and Rita together produced 12 million cubic yards of vegetative debris in Louisiana, mostly downed trees and branches. Mississippi officials estimate that the hurricanes created 20 million cubic yards of woody waste. Much of this debris was gathered up quickly, as crews cleared streets for safe passage.

Woody waste presents some excellent recycling opportunities. In Washington Parish, north of New Orleans, the waste is being ground up to serve as fuel in a paper mill. Elsewhere, it is being chipped or shredded for use as temporary cover for landfills. Environmental groups suggest that the woody materials could be used to build new levees around endangered wetlands, and some have even proposed that clean woody waste be used to fill industrial canals that contributed to the flooding of New Orleans.

But even for this seemingly benign material, disposal can be complicated, because of a pernicious local critter called the Formosan termite. Accidentally imported in the 1940s by U.S. warships returning from Asia, the termite is such a serious problem that Louisiana's wood waste cannot be shipped out of state or to uninfested regions of Louisiana.

"If we didn't have a termite problem, we could use barge or rail to send this stuff to other states," said Brown of the DEQ. "People from Texas and Alabama have called us asking for some of our waste," but it cannot be sent. The prohibition also applies to wooden waste from residences.

What's more, warns Bob Odom, Louisiana's commissioner of agriculture and forestry, "if you buried all this wood waste, all you would have done is to create a haven for those termites." Odom advocates burning the woody waste or spraying it with a pesticide. He said he would support composting only if he could be convinced that it would generate enough heat to kill the insects. Otherwise, he said, all of the chipped wood will have to be sprayed before it can be used.

Even woody waste from areas not infested with termites generates questions. Winter said that FEMA approved collection of Jefferson Parish's downed trees and limbs, but did not immediately approve the collection of stumps. "People kept calling and saying, 'When are you going to pull out these stumps?'"

Eventually, FEMA agreed to get rid of the stumps, but then had to assign contractors to the task. In the Army Corps's debris database, it still counts tree removal and stump removal as separate disposal operations.

The infrastructure developed to track and manage all of this waste is extraordinary. In a dingy building in Baton Rouge, Georgiann Shult, a Corps employee from central Pennsylvania, has developed a computerized database that tracks every truckload of waste hauled by her agency's contractors.

Every load has a paper ticket signed by the driver and by the operator of the disposal site. Dozens of staffers in the Baton Rouge office enter information from those tickets into the database, at a rate of several thousand tickets per day. At the touch of a few buttons, Shult can locate any truckload of waste.

By late December, she had records on more than 300,000 loads of debris hauled by the 10,000 trucks that the Corps's primary contractors had operated since September.

Where Does It All Go?

After hurricane debris is picked through, sorted, and collected, a dizzying array of hurdles still must be cleared before it is laid to rest somewhere. In New Orleans, the Army Corps of Engineers is using the Old Gentilly landfill as its primary disposal site for construction and demolition rubble, but reopening that site has sparked a firestorm of protests. Gentilly, a former city-owned municipal landfill, was closed in 1986.

The city was in the process of getting a site permit for construction debris when Katrina struck. The landfill reopened days later. Critics contend that the dump does not meet the standards of a modern landfill. Marsh surrounds Gentilly, and owners of nearby landfills argue that they have plenty of capacity for hurricane-related waste and can handle it more safely.

Joel Waltzer, a lawyer suing on behalf of the Louisiana Environmental Action Network to try to force the state to close the landfill, said that Gentilly is simply not equipped to handle the hazardous materials that are almost certainly mixed in with the curbside debris that's arriving by the truckload.

"They can pluck through those rubbish piles, and they will get the [dangerous] stuff that's on top.... But if they get even 25 percent of it, I will be shocked," Waltzer said.

The Louisiana Department of Environmental Quality counters that Gentilly is needed. Assistant Secretary Brown said, "If it weren't available, we would really be behind the eight ball." He added that the landfill "meets every standard that every other construction and demolition debris landfill meets."

Gentilly sits on a spit of marshy land east of downtown New Orleans that is covered with decades-old illegal dump sites. Herons and other coastal birds stand in brackish waters amid abandoned cars, junked furniture, and garbage from various eras. Trucks bearing hurricane debris continually drive in and out of unregulated sites that have no apparent environmental controls.

"I've been raising hell about those sites," but the DEQ has not shown any interest in shutting them down, said Sierra Club organizer Darryl Malek-Wiley. DEQ Enforcement Director Harold Leggett testified before the state Legislature's environmental committees in mid-December that the state had not emphasized enforcement in the immediate aftermath of the storms, but said, "There are some criminal investigations going on related to the landfill activities."

Brown said that his agency is very concerned about illegal dumping near the Gentilly landfill and is working with city police to identify the perpetrators.

In some places, the Louisiana DEQ favors burning hurricane debris, but the EPA has issued warnings about the combustion of debris that may be contaminated with asbestos or other health hazards. The Corps, officials said, is not burning any waste and will not unless the EPA approves.

Brown said that his agency is burning clean, woody debris and is hoping to rely heavily on shredding or grinding other wastes to reduce the space they take up in landfills. The state has begun using a tractor-trailer-sized grinding machine called the "annihilator" that can chew more than 100 tons of waste an hour into 2-foot chunks.

In Mississippi, about half the hurricane debris is woody waste, but the state Department of Environmental Quality would prefer not to burn it. "We tolerate [burning], but we don't encourage it," said Mark Williams, the department's solid-waste administrator. Mississippi's biggest challenge, he said, is sorting through the debris fields that were left after the storm.

Katrina made a direct hit on the Mississippi Gulf Coast, and while Louisiana was left with thousands of damaged structures, most of the buildings along the Mississippi coast were obliterated. Ron Calcagno, public works director of the pulverized town of Waveland, Miss., said that officials are scheduling waste-crew visits so that residents can meet the crews at their former homes to collect any valuable or sentimental objects that remain.

The greatest mystery lying at the bottom of the massive piles of hurricane waste is the total cost of disposal. The federal government has already signed waste contracts totaling \$2 billion. But FEMA and the Army Corps refuse to say what they are paying per ton for waste hauling. Officials maintain that totals are not yet available or that releasing the information would give contractors a leg up in price negotiations.

Parishes around New Orleans have complained that the structure of FEMA's waste contracts -- FEMA hires the Army Corps, which hires national contractors, who hire local subcontractors -- guarantees that the hauling price will be marked up several times. Local haulers hired directly, critics contend, could do the job more cheaply. A FEMA official in Mississippi said that the recovery of recyclable materials will defray some of the disposal cost.

But, in the end, there's no getting around these facts: Katrina and Rita trashed the Gulf Coast. And trash disposal is expensive and environmentally difficult.