

Needed Federal Actions Were Known, But Not Taken

by Richard Freeman and Ramtanu Maitra

In July 2004, more than 250 emergency preparedness officials from more than 50 Federal, state, and local agencies and volunteer organizations, participated in a unique 8-day long gathering, organized by the U.S. Federal Emergency Management Agency (FEMA). They conducted a “tabletop exercise,” a simulation of what would happen if a Category 5 hurricane were to slam into New Orleans. Their conclusion: perhaps the greatest catastrophe in American history. They cited a study that “the death toll . . . in the New Orleans area could be between 25,000 and 100,000.” As well, according to one participant, “as much as 87% of the area’s housing would be destroyed.”

The participants assumed that, despite official requests to evacuate, roughly two-thirds of the city’s residents would remain until the hurricane hit—a higher percentage not evacuating than actually occurred with Hurricane Katrina. In response, the meeting developed a series of emergency measures that authorities would have to be prepared to take, including “developing an effective search and rescue plan;” “identifying short-term shelters for those evacuated;” and “creating housing options.”

This meeting, organized by FEMA director Michael Brown, publicized its findings and its emergency battle plans a full 13 months before Hurricane Katrina hit. When asked on Sept. 2, 2005 about the July 2004 meeting, Brown told NBC “Today Show” anchor Katie Couric, “Well, two years ago, I asked the President for catastrophic disaster planning money to do that. We picked New Orleans because of the potential here. And we [did] the tabletop [New Orleans] exercise about a year ago.”

For a year, the White House knew the effect of a hurricane with the power of Katrina smashing into New Orleans. It knew the recommended emergency actions. In the event, it did not take them.

This July 2004 meeting was not an isolated event. A series of meetings and studies has been organized for the last several years, on the subject of a high-powered hurricane hitting New Orleans, including a 2001 meeting organized by FEMA. One study concluded that 115,000 people might be stranded in New Orleans, requiring evacuation. The participants at the different meetings all reached the same horrific conclusion, and the meetings all recommended immediate action.

White House ‘No’ to Infrastructure

The heart of the New Orleans problem with respect to hurricanes is well known: Its flood control infrastructure can withstand, at most, a Category 3 hurricane. Its survival depends on building infrastructure able to withstand an upper-level Category 4 hurricane, such as Katrina, or the Category 5 hurricane with winds of 145 mph or more, which shred cities. The U.S. Army Corps of Engineers has repeatedly proposed to build infrastructure that would fortify New Orleans to withstand a Category 5 hurricane; and to sustain and improve the existing Category 3 hurricane infrastructure in the city, complementing Category 5 defenses.

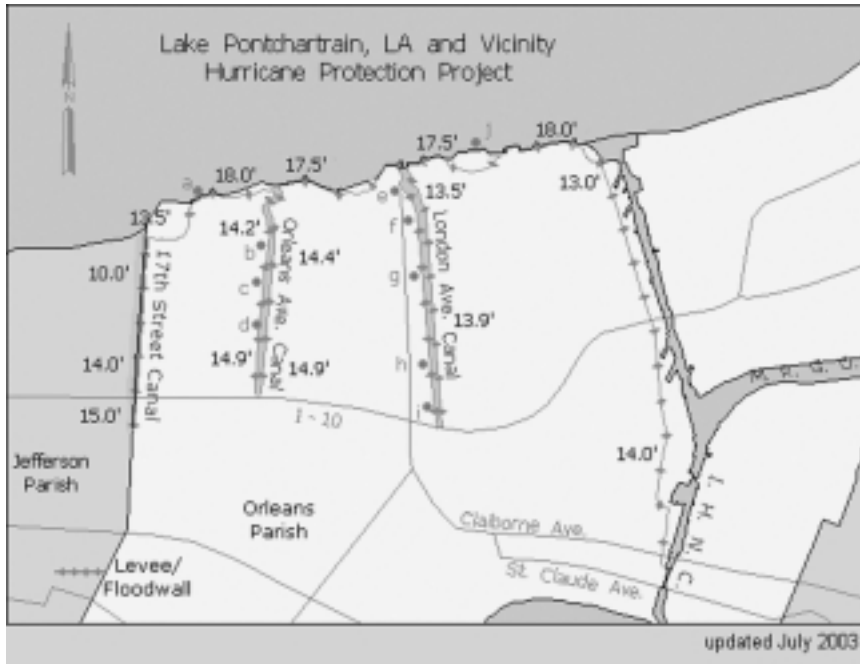
But the Bush administration has, with escalating steps over the last few years’ budgets, slashed the proposed appropriations for flood control infrastructure for New Orleans, and in particular, killed outright those proposals for Category 5 hurricane flood protection.

The monetarist Bush Administration’s blocking the infrastructure work that would save New Orleans, despite immediate and particular warnings of massive destruction and loss of life, created the disaster in New Orleans.

The July 2004 gathering in Baton Rouge presented a startling picture. The meeting started on July 19 under the title, “In Case of Emergency,” according to a posting on the website of the Louisiana Office of Homeland Security & Emergency Preparedness (LOHSEP), the state agency that coordinates with FEMA. The “hurricane” they looked at was a simulation by the National Weather Service’s Southern Region, based on the actual 1998 Hurricane Georges, which turned east only hours before reaching landfall. The planners eliminated the veering off, and dubbed their hypothetical hurricane, Pam.

Hurricane Pam would flood New Orleans “with up to 20 feet of water, and 80 percent of the buildings in the area are severely damaged from water and winds,” the exercise concluded. Pam eerily resembles Katrina, although Pam was assumed to pack winds of 120 mph, lower than the 135-145 mph winds of the actual Katrina.

The LOHSEP website reported, “In New Orleans, when evacuees from other areas who seek shelter in the city are accounted for, only a third of the population will leave before the storm hits, according to the Pam scenario. That’s partly a recognition of the city’s poor population. As many as 100,000



U.S. Army Corps of Engineers

Built only to withstand Category 3 hurricanes: Levee/floodwalls protect the bowl of New Orleans on the north from Lake Pontchartrain and on the south from the Mississippi River (not shown), and canals with levee walls carry excess water back to the lake. Katrina's storm surge drove lake water into the canals, breached them, and flooded the city.

live in households in which no one owns a car.” This indisputable fact would have been known by any Federal official planning for Katrina, and should have been prepared for—rather than the policy of instructing national guard to shoot at citizens who had been left to steal or starve because of Bush’s policy.

The report noted the problem of debris of “human and animal corpses, including bodies washed out of cemeteries; and a mix of toxic chemicals likely to escape from businesses.” That indeed is happening with Katrina. It observed that “as much as 87% of the area’s main housing would be destroyed.” It is possible under Katrina that 50% of the housing will be destroyed.

The meeting’s participants advanced six steps to be taken, three of which are reported above.

2001 Government Forecast

In early 2001, FEMA issued a study, identifying a hurricane of the magnitude of Category 4 or 5, striking New Orleans, as one of the three most likely disasters to happen in the United States; the others were a terrorist attack on New York City, and an earthquake in San Francisco. In 2002, *New Orleans Times-Picayune* authors Mark Schleifstein and John McQuaid published a three-part report of a FEMA simulation study, conducted at the request of “Louisiana emergency management officials [who] lobbied [FEMA] for years to study how to respond to New Orleans’ vulnerability.”

In connection with this study, John Clizbe, national Vice President for disaster studies with the American Red Cross, estimated that “between 25,000 and 100,000 people would die” were a Category 5 storm to strike New Orleans (a conclusion that subsequent conferences drew upon).

Joseph Suhayda, a Louisiana State University engineer who has led the fight to find ways to limit hurricane damage in the New Orleans area, told the same *Times-Picayune* series, “A catastrophic hurricane represents 10 or 15 atomic bombs in terms of the energy it releases. Think about it. New York lost two big buildings. Multiply that by 10 or 20 or 30 in the area impacted and the people lost, and we know what could happen.”

Founded as a tiny town in 1718, on muddy land at the mouth of the delta where the Mississippi River meets the Gulf of Mexico, New Orleans has long known it needed a water infrastructure system centered on levees and river diversions, or else it would be washed

away. Up through the early 20th Century, levees were built and operated, usually by private individuals; but being made of earth, they didn’t last long. The real breakthrough for New Orleans came in 1933, when Franklin Roosevelt assumed the Presidency. Roosevelt directed the Army Corps of Engineers to work with state and local governments to build a tremendous flood control system throughout the Lower Mississippi River and in New Orleans directly.

When flooding from a massive rainstorm in May 1995 killed six people, the U.S. Congress authorized the Southeast Louisiana Urban Flood Control Project, or SELA. Up through the present, the Army Corps spent \$430 million of SELA funds on shoring up levees and building pumping stations (with \$50 million in local aid), yet at least another \$250 million in crucial SELA projects still had to be built. But in 2003, Bush and Cheney began to bring the ax down on flood control projects. In 2004, the U.S. Office of Management and Budget (OMB) cut the SELA funding by 65%, down to \$10.9 million per year.

The Army Corps is also directing the Lake Pontchartrain and Vicinity Hurricane Protection Project, a \$750 million effort to build up levees and protection for pumping stations on the eastern bank of the Mississippi River in Orleans, St. Bernard, and Jefferson parishes. For Fiscal Year 2005, the Army Corps needed, at minimum, \$20 million to complete vital project work; the Bush Administration slashed appropriations to \$3.9 million. The results could not be clearer: These

projects were in exactly those parishes where unconstrained flooding occurred during after Katrina.

As the Federal government cut the funds for the New Orleans flood control projects to a trickle in the critical two-year period before Hurricane Katrina hit, Al Naomi, the chief project manager for the New Orleans District of the Army Corps, was forced to go to local levee and flood control districts to beg for money. In 2004, Naomi told the East Jefferson Levee Authority, "The system is in great shape, but the levees are sinking. Everything is sinking, and if we don't get the money fast enough to raise them, then we can't stay ahead of the settlement. The problem that we have, isn't that the levee is low, but that the Federal funds have dried up so that we can't raise them."

In its Feb. 16, 2004 article, *New Orleans City Business* wrote: "The \$750 million Lake Pontchartrain and Vicinity Hurricane Protection project is another major Corps project, which remains about 20 percent incomplete due to lack of funds, said Al Naomi, project manager. That project consists of building up levees and protection for pumping stations on the east bank of the Mississippi River in Orleans, St Bernard, St. Charles and Jefferson parishes." Naomi told *City Business*: "The longer we wait without funding, the more we sink. I have got at least six levee construction contracts that need to be done to raise the levee protection back to where it should be (because of settling). Right now I owe my contractors about \$5 million. And we're going to have to pay them interest."

A subsequent, June 5, 2004 article reported: "The district has identified \$35 million in projects to build and improve levees, floodwalls and pumping stations in St. Bernard, Orleans, Jefferson and St. Charles parishes. Those projects are included in a Corps line item called Lake Pontchartrain, where funding is scheduled to be cut from \$5.7 million this year to \$2.9 million in 2006. Naomi said, 'It is enough to pay salaries, but little else.'"

Despite the scenario laid down by FEMA, and other experts, in 2004, the Bush Administration cut 80% percent of what was requested by the New Orleans district of the U.S. Army Corps of Engineers for holding back the waters of Lake Pontchartrain by strengthening the levees.

The Sept. 3, 2005 *Wall Street Journal* reported that a private engineer had informed the paper that a critical levee section on the 17th Street Canal in New Orleans had been likely built using I-wall designs. This is less sturdy than a levee built with the more supportive T-wall design. But I-walls cost \$1,700 a running foot, while the T-walls cost about \$4,000. This levee section is *precisely the one where a 250 foot gap erupted, one of the principal sources for the flooding of the whole city.*

But as significant as the above projects are, of special importance are Army Corps proposals to upgrade the entire New Orleans flood control system to a level to withstand a Category 5 hurricane. There are various ideas for this. One

idea is to build a gate that could shut off Lake Pontchartrain. Others involve building levees of a higher elevation in strategic locations, installing more powerful pumps, and other configurations. One Army Corps study for an upgrade to a Category 5 protection level had a cost of only \$4 million. In the 2005 Federal budget, the Bush Administration struck out those funds.

A Catastrophe Was Waiting to Occur

The flooding of New Orleans during the last two days of August, following the breach of the 17th Street Canal floodwall and the floodwall along the Industrial Canal, killed thousands, destroyed nearly all the infrastructure, and ruined active commerce and industries for years to come. The fact that such a catastrophe was allowed to occur should shame the entire nation.

The Category 4 Hurricane Katrina made landfall east of New Orleans in the early hours of Aug. 29. The ensuing surge of storm water and rain pushed the waters of Lake Pontchartrain, located north of the city, into canals, and over their levees into the city on Aug. 30. Soon, the inadequate floodwalls were breached and waters from the lake began to swirl into New Orleans.

The breaches widened quickly while an insufficient number of personnel tried to plug them. Within hours, water began to pour into the city like a river through a two-block long gap at the mouth of the 17th Street Canal, submerging almost 80% of New Orleans. In some places water rose as high as 25 feet.

What happened on Aug. 29-30, and what followed subsequently, was exactly what the engineers and experts were warning the authorities for years. The Corps of Engineers, who are in-charge of keeping New Orleans dry and maintaining the levees, pumps, and associated paraphernalia, had told the authorities that the New Orleans levees built decades ago were designed to withstand a Category 3 hurricane, but nothing more. Often leading the charge was Naomi, a 30-year Army Corps veteran of efforts to waterproof a city built on slowly sinking mud, and sitting right on the way of great storms that come through the Gulf of Mexico.

Naomi grew particularly frustrated this year, and he had reasons to be. According to a study by a hurricane expert, Dr. William Gray of Colorado State University, the Gulf Coast could experience an increase in storm activity and intensity over the next 20 years. Dr. Gray's study says the storms are expected to cause 5 to 10 times the amount of damage on the Gulf and Atlantic coasts than was previously experienced. Hurricane activity of the next 20 years should resemble the period that began in the late 1920s and lasted through the 1940s. The increase is due to higher salinity content in the Atlantic Ocean, which alters its currents and increases average ocean temperatures, fueling more storms. Dr. Gray was not alone; other forecasters as well had predicted 2005 as an intense hurricane season.



FEMA/Jocelyn Augustino

A meeting organized by FEMA, in July 2004, concluded that if a Category 5 hurricane were to slam into New Orleans, it would result in perhaps the greatest catastrophe in American history. The infrastructure needed was killed by the Bush/Cheney Administration. Here is an aerial view of one of the levee's breached by Hurricane Katrina, which resulted in the flooding of the city.

Despite such clear signals, Naomi ruefully noticed almost a simultaneous \$71 million cut in the Army Corps' New Orleans district budget to guard against such storms. He called the cut drastic, in a recent article in *New Orleans City Business* magazine. Assessing the damage, on Aug. 30, after the hurricane hit, Naomi said: "It would take \$2.5 billion to build a Category 5 protection system and we're talking about tens of billions in losses, all that lost productivity, and so many lost lives and injuries and personal trauma you'll never get over." "People will be scarred for life by this event," he said.

In the face of an approaching storm, the city's less-than-adequate evacuation routes would strand 250,000 people, or more, and probably kill one of ten left behind as the city drowns under 20 feet of water, experts continued to point out.

The Scale of Vulnerabilities

New Orleans is essentially a bowl ringed by levees and crossed by floodwalled canals that protect the city from the Mississippi River to its south and Lake Pontchartrain to the north (see **Figure 1**). The bottom of the bowl is 14 feet below sea level and there exists no place in New Orleans which is now above sea level.

The New Orleans Sewerage and Water Board operates a vast drainage system designed to collect water during routine rainfalls and pump it from the city into the canal and on to the lake. There is the largest drainage pumping station in the world at the head of the one canal. There is also a downside—subsidence, or slow sinking of the ground—to the city's doz-

ens of pumps pushing water uphill into the lake. But, for New Orleans, pumping water during a rainfall is not an option, so the city continues to dry. Records indicate New Orleans has sunk by nine feet over hundreds of years. As New Orleans sank, the interlinked Lake Pontchartrain and Gulf of Mexico surface rose, posing a perfect condition for New Orleans' annihilation.

It was not always like this. When first built in 1718, the city sat on a higher land beside the Mississippi. But it was built on soft river mud deposited over millions of years by flowing water at the mouth of the delta where the Mississippi meets the Gulf of Mexico.

In 1965, Hurricane Betsy, a Category 3 hurricane, buried New Orleans under eight feet of water. Since then the topological situation has worsened further.

The city is made further vulnerable because of the shrinking of marshes, fresh and saltwater swamps of mud and

diverse plant life which separate New Orleans from the Gulf of Mexico. They once acted as barriers for storm surges. Now the marshes are eroding fast, partly because levees block and reroute the Mississippi's periodic flooding, which spread the mud and sediment that shored up the marshes. In some places, the Gulf has encroached 20-30 miles closer to New Orleans.

Finally, the frequency of hurricanes in the Atlantic Ocean has risen in the new hurricane cycle.

Marty Rowland, a civil and environmental engineer living in New Orleans for 25 years who evacuated to Detroit on Aug. 28, said that the Army Corps of Engineers had long developed a plan to replenish the sinking coastland south of New Orleans. The plan was to divert onto the coastal area, some of the Mississippi River silts and sediments that now wash into the Gulf. Such deposit of silt and sediment in the coastal wetlands would regenerate the coastlands.

The Army Corps has in fact restored some of the protective delta region that extends from the southern portion of New Orleans down to the Gulf coast. But only one of many such diversions planned, was constructed, in St. Bernard parish. The others were never allowed to develop because of budget cuts to feed the Iraq War and the Homeland Security.

The vulnerability of the city has been under discussion for years. The Army Corps of Engineers, Louisiana State University (LSU), and the authorities of Jefferson Parish (county) have modeled the effects and aftermath of a Category 5 hurricane striking New Orleans. The models indicated clearly the catastrophe that the city is experiencing now.