

An Unnatural Disaster: The Aftermath of Hurricane Katrina

by Member Scholars of the Center for Progressive Reform

A Center for Progressive Reform Publication

September 2005

Introduction

The extent of the human tragedy produced by Hurricane Katrina has nearly overwhelmed our ability to comprehend it. In the days immediately following the hurricane, as the full scope of the tragedy revealed itself, Americans began responding as they so often have in the past, with courage in the face of adversity, financial generosity, acts of heroism great and small, and compassion and personal sacrifice.

Amid the outpouring of support for the evacuees and the commitments to rebuild, we have also witnessed a gathering storm of criticism. It is clear even at this early stage that the Hurricane Katrina tragedy is not a “wake-up call,” as some have described it; rather, it is a *consequence* of past wake-up calls unheeded. By any reasonable measure, government failed the people of New Orleans. Hurricane Katrina was a natural disaster of enormous proportion, but its tragic consequences have been made even worse by an unnatural disaster – the failure of our government adequately to anticipate, prepare for, and respond to the devastation that the hurricane brought.

One very powerful message of the ideology that now dominates both the executive and legislative branches of the federal government is that actions have consequences. The Katrina tragedy has demonstrated that *inaction* also has serious consequences. When a society fails to protect its most vulnerable citizens – its children, its struggling single mothers, its sick and its elderly – from the forces of nature and a winner-take-all system of economic rewards, consequences inevitably ensue. These consequences are often hidden, either because the connection between governmental inaction and human suffering is difficult to establish or because those who suffer the most are themselves at the margins of society.

In the post-Katrina period, it is vital that those investigating the failure of our emergency management systems and institutions focus on the right questions. To the extent that the inquiries focus solely on examples of individual incompetence, however, there is ample reason to worry that they will not. Focusing on incompetence as the root cause of the problems risks ignoring the underlying conditions that made it easier, perhaps even inevitable, for those public servants to fail. Indeed, the reaction to Katrina may be like the initial reaction to a traffic accident in which a momentarily careless driver crashes into a tree at a curve in the road. Of course, the driver bears responsibility, but it may also be the case

This report is a collaborative effort of the following member scholars and staff of the Center for Progressive Reform: David M. Driesen, Syracuse University College of Law; Alyson Flournoy, University of Florida Levin College of Law; Sheila Foster, Fordham Law School; Eileen Gauna, Southwestern University School of Law; Robert L. Glicksman, University of Kansas School of Law; Carmen G. Gonzalez, Seattle University School of Law; David J. Gottlieb, University of Kansas School of Law; Donald T. Hornstein, University of North Carolina School of Law; Douglas A. Kysar, Cornell Law School; Thomas O. McGarity, University of Texas Law School; Catherine A. O’Neill, Seattle University School of Law; Clifford Rechtschaffen, Golden Gate University School of Law; Christopher Schroeder, Duke University School of Law; Sidney Shapiro, Wake Forest University School of Law; Rena Steinzor, University of Maryland School of Law; Joseph P. Tomain, The University of Cincinnati College of Law; Robert R.M. Verchick, Loyola University, New Orleans; and Karen Sokol, CPR Policy Analyst.

For further information about the authors, please see page 43.

that the transportation engineers who designed the road with too little banking or too flimsy a guardrail contributed to the severity of the accident, as might the politicians who decided that their favorite pork barrel projects or their desires to give tax cuts to the well-to-do were more important than funding the transportation budget so that the road could be fixed.

New Orleans sat in the path of Katrina like a stretch of road with too little banking and with no one having taken responsibility for its repair. In this case, the government failures that preceded Katrina and made it worse seem to span a wide range of environmental, natural resource, disaster-planning, and emergency-response functions for which we rely upon government. Identifying those systematic and programmatic contributors to the Katrina disaster will give us the information we need to demand that government do better. For too long, government has been neglecting responsibilities that we count on it

to bear – for preserving wetlands, eliminating the legacy of hazardous wastes discarded in our communities, anticipating large-scale disasters and taking the appropriate steps to prepare for them, reacting quickly and flexibly with large-scale rescue and recovery operations after such disasters, having systems in place to coordinate governmental responses, and above all, for recognizing that the needs of the least powerful and poorest among us are the special responsibility of government.

The proper response to Hurricane Katrina is *action* at every level of public life to restore the critical protections and safety nets that only government can provide for the people. Government is the means through which society has always sought to meet its larger responsibilities to individuals who cannot adequately protect themselves without some assistance, and to protect the values that bring us together as a people. In examining the manifest failure of government laid bare in Katrina's wake, it is vital that we examine the extent to which the enormity of the disaster was a product of poor policies and decisions, and equally critical that we initiate policy changes and reforms that will enable government to accomplish the tasks that Americans expect and demand of it before and after such events.

This report analyzes key policy decisions, as well as actions and inaction under health, safety, and environmental laws, that could have better protected New Orleans from the effects of Katrina before the hurricane and those that could have improved the emergency response in its wake. In the area of public health, safety, and the environment, the paper explores the implementation of wetlands law and policy, bad decisions regarding the construction and maintenance of the levee system designed to protect New Orleans, pollution prevention and clean-up laws, and energy policy. In the area of emergency response, it reviews policy decisions related to evacuation, shelter, rescue, and relocation. It concludes by examining the overriding issue of how and why poor policy-making and short-sighted planning guaranteed that Katrina visited disproportionate suffering on New Orleanians who were poor and African-American.

Some have begun to argue that the failures of government counsel a course of reducing the responsibilities of government by waiving environmental and worker protections, shielding wrongdoers from liability, and

Table of Contents

Introduction . . .	1
Executive Summary . . .	3
Historical Roots of the Disaster . . .	10
Wetlands Policy . . .	10
Broken Levees . . .	12
Toxics in the Air and Water . . .	17
Implications for Energy Policy . . .	21
Emergency Response Planning and Implementation . . .	23
Failures in Evacuation Planning . . .	23
Institutional Weaknesses and Failures in Implementation . . .	28
The Two Americas . . .	34
Who Was Most Vulnerable . . .	34
Race, Class, and Justice . . .	36
Moving Forward . . .	40
The Conservative Vision . . .	40
The Progressive Vision . . .	41
Notes . . .	44

relying even more on the private sector. But using the Katrina disaster as an excuse to enact simplistic prescriptions for reducing governmental protections, limiting governmental accountability, and enriching favored business constituencies would be a serious mistake.

Almost a century ago, tragedies like the great Galveston Hurricane of 1900, which killed 6,000 people without warning, and the 1911 Triangle Shirtwaist fire, which killed 146 immigrant female workers locked in a burning building, made it impossible for the privileged few to hide the consequences of a laissez-faire economy. The progressive movement offered an alternative that stressed a positive role for government in fulfilling society's responsibilities to its citizens. Today, government must again play an active role in protecting its citizens from the visibly powerful forces of nature *and* from the less visible, but equally powerful forces of policy-making that is sometimes slanted away from protecting and serving the public and toward protecting profit margins.

In its recently published book, *A New Progressive Agenda for Public Health and the Environment*, the Center for Progressive Reform (CPR) identified a set of principles to guide a modern progressive approach to government. The concluding section of this report revisits those principles, by way of framing the questions that should be the starting point for conceiving and crafting policies by which government can help fulfill our collective responsibility to one another and to our shared environment. The concluding section of this report suggests preliminarily how these principles respond to the governmental failures that are still being uncovered in the aftermath of the storm's devastation. As conservatives often observe, government cannot be the sole vehicle for fulfilling a society's obligations. But Hurricane Katrina reminds us that it must play a prominent role, and that toward that end, its policies must be designed and its structures built so that it can adequately serve the functions expected of it in fair weather and foul alike.

Executive Summary

In the weeks since Hurricane Katrina devastated the Gulf Coast, much attention has been paid to the manifest failure of government rescue efforts. The searing images on Americans' television screens, persisting for days after the storm had passed, demanded as much. But as cleanup and rebuilding commence, a broader view is in order, one focused less on the apparent incompetence and unpreparedness of the government officials charged with managing such emergencies, and more on the failures of policy-making and resource allocation leading up to the disaster. An examination of those failures leads to a simple conclusion: the hurricane could not have been prevented, and some flooding may have been inevitable, but at least some, and perhaps much, of the damage visited upon New Orleans by Hurricane Katrina could have been prevented by wiser public policy choices.

The choices that failed New Orleans are the subject of this report. It examines the environmental decisions that robbed the area around New Orleans of the natural environmental features that might have absorbed floodwaters before they toppled levees. It looks at the policy choices – not merely the incompetence – that resulted in the government's feeble emergency response. It identifies the serious environmental challenges now facing the New Orleans area resulting from environmental policy-making that allowed toxic chemicals to be produced, handled, and stored in such a manner that flooding would loose them on residents. It discusses the effect of energy policy choices on Katrina, as well as the implications of Katrina for future choices. It explores the “environmental justice” lessons to be learned from the Katrina disaster – how environmental policy disfavors poor and minority Americans. It concludes with a series of challenging questions to be examined by investigators and policymakers as they begin the long process of rebuilding and the longer process of reshaping government policy to prevent Katrina-style environmental and policy disasters from compounding natural disasters in the future.

In addition, we strongly recommend that Congress create an independent commission to pursue these questions, in an atmosphere free of the bitter partisan strife that seems to swamp both houses in anticipation of the 2006 mid-term elections. The notion of a bipartisan, objective

congressional investigation, promoted by the President, does not seem possible or desirable given the rancor of recent days.

Historical Roots of the Disaster: Hollow Government and Failed Protection of Public Healthy, Safety, and the Environment

The failure of New Orleans' levees was preceded by a failure of environmental protection and planning. Louisiana's coastal plain contains one of the largest expanses of coastal wetlands in the contiguous United States, but it is being lost at a rate of 6,600 acres per year. The main culprit in wetlands loss in the area is the vast network of levees, navigational channels, and oil-and-gas infrastructure. Important though the network is to safety and commerce, it accelerates coastal land loss by reducing the natural flow of a river's freshwater and sediment to wetland areas where lost land would then naturally be replenished. In addition, the area's major navigational channels pose their own special threat to flood control by sometimes acting as "hurricane highways," allowing storms to sweep inland, past marshland, like liquid bulldozers.

In 1998, state and federal agencies, with the participation of a diverse group of local churches, scientists, environmentalists, and fishermen, developed "Coast 2050: Toward a Sustainable Coastal Louisiana," which offered a host of ecosystem restoration strategies. Its \$14 billion price tag pales by comparison to the cost of rebuilding New Orleans, but Coast 2050 was never funded, and the President's 2005 Energy Bill provided only \$540 million for Louisiana's coastal restoration over four years. It is time to renew the promise of Coast 2050, completely funding it.

Broken Levees: Predictions That Came True

Over a period of many years, scientists had predicted that a strong storm could breach the levees, and some had predicted what appears to be the precise sequence of breaches that flooded the city. The failure to protect New Orleans resulted from inadequate planning by the Army Corps of Engineers (Corps), and from the failure of the federal government to fund badly needed improvements once those limitations were recognized. Neither the Corps nor Congress adequately accounted for the loss of life and property that would occur if a catastrophic hurricane hit New Orleans. A hurricane

protection plan implemented after 1985 by the Corps was designed to protect the city against what roughly corresponds to a fast-moving Category 3 storm. Hurricane Katrina struck the Louisiana/Mississippi coast as a Category 4 storm.

Moreover, although the Mississippi River-Gulf Outlet (MRGO) canal was a primary cause of the flooding, it is seldom used and heavily subsidized by taxpayers. Less than three percent of the New Orleans port's cargo traffic uses the MRGO, less than a ship a day. Although New Orleans' vulnerability was widely predicted, the Corps declined to move forward with enhancements to the levee and floodwall system because "no clear bureaucratic mandate exists for reassessing the blueprints once levees are built." Moreover, when Congress has appropriated money to protect New Orleans better, the Corps has not been in a hurry to get the job done. Finally, the Bush Administration and its predecessors have failed to fund Corps requests.

Toxics in the Air and Water: The Long-term Poisoning of New Orleans

Katrina left a range of serious environmental problems in her wake, including contaminated water; multiple oil spills, typically from above-ground tanks; leaking underground tanks containing fuel and chemicals; flooded sewage treatment plants; and flooded buildings, lagoons, lots, and individual containers containing a wide array of toxic chemicals that were washed out into the ambient environment.

Government officials responsible for removing the floodwaters faced a choice between two environmentally horrid alternatives: they could wait to pump the water out of the city until a mechanism was put in place to remove at least some of the contamination, or they could pump the contaminated water back into Lake Pontchartrain and the Gulf of Mexico. Officials chose to pump the water immediately, and as a result many fish and other water-dependent organisms will die. The pumping will also undo the hard-won success of cleaning up Lake Pontchartrain to the point that portions were recently deemed safe for swimming.

For its part, the Environmental Protection Agency (EPA) has deployed hundreds of workers to the Gulf Coast and is working frantically to test floodwaters, soil, air, and drinking water sources to measure and mitigate risks

to the environment. Although the Agency is currently receiving a “pass through” from the Federal Emergency Management Agency (FEMA) to cover this work, it is not clear how long that form of funding will last. If and when the Agency runs out of external funding, the resulting squeeze could cripple EPA’s capacity to do anything but cope with Gulf Coast problems.

Another important question hovers over the entire enterprise: could the environmental damage have been avoided if planning and enforcement had adequately accounted for the inevitable flood that Katrina finally brought? The answer is straightforward: Katrina could not have been stopped, but much of the environmental nightmare could have been.

- The Clean Water Act (CWA) requires the preparation of Spill Prevention Control and Countermeasure Plans by facilities that store petroleum products in above-ground containers. There has not been time to investigate whether adequate plans were in place, but it appears very likely that many of the sources of the spills did not construct adequate containment.
- The Resource Conservation and Recovery Act (RCRA) requires virtually all facilities that manage, store, or dispose of hazardous waste to have emergency plans that prevent the waste from escaping into the environment in the event of an accident, including foreseeable events like a hurricane. It is not yet clear how many of the 21,000 containers EPA picked up in the streets held hazardous wastes, but based on past experience, it is highly likely that many did.
- Finally, there is the troubling question of flooded Superfund sites, with damage that was exacerbated by poor initial cleanups. Reports are that one of three Superfund sites in the path of the hurricane is submerged under water, while the other two were flooded – with their dangerous contents joining the sewage and household hazardous chemicals in the water now being pumped into the Gulf of Mexico and Lake Pontchartrain. These sites should never have been allowed to become toxic, and once they were identified, they should have been cleaned to avoid exactly the outcome Katrina wrought.
- Superfund is also relevant to the cleanup effort, because the statute and the money that funds it are the primary sources for EPA’s legal authority and resources to respond to releases of hazardous substances into the environment. Indeed, a disaster on the magnitude of Hurricane Katrina is exactly what Superfund’s “emergency removal” provisions were designed to address. Among the sources of revenue for the Superfund toxic waste cleanup program were taxes on the production of crude oil and the manufacture of chemical feedstocks, as well as general tax revenues. Congress allowed the industry taxes that provide the bulk of the program’s funding to expire in 1995. Since then, the program has limped along on limited funds from general tax revenues and cost-recovery actions against companies that created the sites. That reduced funding made it difficult for EPA to clean up the three New Orleans-area sites in the first place, and now it will handicap the coming clean-up effort. Democrats in Congress have fought a long and losing battle to persuade their Republican colleagues and the Bush Administration to revive the industry taxes that support the Superfund. That effort may well be renewed in the wake of Katrina.

Implications for Energy Policy

The United States’ continued over-reliance on fossil fuels is unwise for several reasons. Katrina highlighted two. First, the over-reliance contributes mightily to global warming, which, according to scientists is increasing the severity of hurricanes, making Katrina-type disasters more likely. The United States has repudiated international efforts to prevent global warming, and is indeed barely willing to admit the problem exists. Second, the policy of over-reliance on fossil fuels invites the types of disruption in energy supplies felt across the nation after Katrina. Congress and the President have declined to enact energy-efficiency legislation that would save money, make industries more competitive, and prevent pollution. Instead, energy policy tilts heavily in favor of increasing the supply of fossil fuels in an effort to keep prices low, despite the threats to people and the environment posed by the use of such fuels.

Emergency Response Planning and Implementation

The consequences of Katrina for anyone left stranded in New Orleans were not only foreseeable; they were foreseen. Among difficulties faced by state and local planners was that more than 100,000 New Orleanians, principally the poor, mostly black residents without cars, together with the elderly, disabled, and infirm, would be unable to evacuate themselves. In the face of this certain knowledge, government officials failed to provide public transportation, leaving tens of thousands of residents to fend for themselves.

Despite ample and clear warnings, the federal government did not even begin seriously to address the situation until 2004. At that time, the Department of Homeland Security (DHS) issued a contract to a consulting firm to develop a better plan. FEMA Director Michael Brown promised to move quickly to polish the plan and move forward. Nevertheless, DHS cut funding for hurricane disaster planning, and according to former FEMA Director Michael Brown, “Money was not available to do the follow up.” The federal government also failed to provide any resources to the city or state to fund emergency bus service or provide other means to assist in evacuation. In the absence of any federal help, New Orleans was unable to marshal the resources to implement a public transportation evacuation plan. So when the order to evacuate New Orleans came on August 28, 2005, it was effectively meaningless to tens of thousands of residents without the resources to get out on their own.

FEMA: Skewed Priorities, Cronyism, and Defunding

Since its creation by President Jimmy Carter in 1979 and until this administration, FEMA had been an independent federal agency, eventually enjoying cabinet level status, and focused on providing relief and emergency response services after natural disasters. When DHS was created in the wake of the tragedies of September 11, 2001, FEMA lost its independent status and became one of 22 agencies of the department. The shift has affected FEMA’s priorities. DHS emphasizes terrorism at the expense of other threats, so much that in 2005, nearly three of every four grant dollars from DHS to first responders went to programs exclusively focused on

terrorism. As Claire Rubin, a Senior Researcher at George Washington University, warned after the reorganization, “a large number of people who are experienced with natural hazards no longer are doing that primarily or at all.” Indeed, in May 2003, DHS staged a series of exercises on counter-terrorism and weapons of mass destruction, by chance the same week that hundreds of real-life tornadoes ripped through the Midwest. FEMA personnel who otherwise would have attended to the tornadoes stayed behind to participate in the counter-terrorism drills.

Equally troubling is the Bush Administration’s inattentiveness to disaster mitigation, substantially reducing the amount FEMA may spend on such measures.

Moreover, the Bush Administration has worked to apply the principles of small government to FEMA, while introducing privatization and decentralization to emergency management. The President’s first FEMA director lamented in Senate testimony that “Federal disaster assistance may have evolved into both an oversized entitlement program and a disincentive to effective State and local risk management,” and suggested that certain disaster management responsibilities, such as providing food and shelter to the displaced, should be delegated to faith-based charities. These changes have undoubtedly affected FEMA’s preparedness and ability to respond. In March 2004, former FEMA head James Lee Witt testified before Congress that “the ability of our nation to prepare and respond to disasters has been sharply eroded I hear from emergency managers, local and state leaders and first-responders nearly every day that the FEMA they knew and worked well with has now disappeared.”

President Bush’s appointments to FEMA have gone to political cronies with little or no disaster-response experience. Patronage appointments are nothing new in Washington, but previous appointments to FEMA have at least had experience in emergency management.

The National Guard: Depleted by the Iraq War and Misused

The National Guard presence in Iraq has taken its toll on the equipment and personnel available to respond to domestic emergencies. By one media account, much of the Louisiana National Guard’s most valuable equipment

was in Iraq, and would take months to return, including “[d]ozens of high water vehicles, Humvees, refuelers, and generators.” As Lt. Col. Pete Schneider of the Louisiana National Guard said, “The National Guard needs that equipment back home to support the homeland security mission.” In addition to the unavailable brigades and equipment, and the toll of wartime duty, the hidden cost of slower deployment to disaster scenes exacerbated the shortfall.

It does not appear that the Louisiana Guard was sufficiently mobilized in the days prior to Katrina, so that its ability to respond quickly afterwards was impaired by several days.

The Two Americas: Race, Class, and Injustice

Race, class, and injustice were key dimensions of the failed policies described above. The simple truth is that the devastating effects – the lost lives, the demolished homes, the shattered communities, the affronts to dignity – were suffered disproportionately by people of color and low-income people in New Orleans, where race is an important factor in the spatial layout, particularly in terms of proximity to polluting facilities, access to public amenities, and protection (whether natural or built) from floods. A host of government decisions made long before Katrina had the potential to mitigate or exacerbate the effects of a hurricane for the people of New Orleans. Where government officials chose to forego provision of basic services and protections, they should have been clear on precisely *who* would be left to fend for themselves.

Shifting Responsibility, Shifting Blame

The Bush Administration has endorsed a shift in responsibility for basic health, safety, and environmental protections, working to diminish government’s role in assuring even minimally healthful conditions for all, leaving it to those at risk to protect themselves. One effect of this shift is to burden people of color and the poor; because these groups are disproportionately the ones most exposed and most vulnerable, they will be the ones left to fend for themselves.

The Bush Administration has endorsed a shift in responsibility for basic health, safety, and environmental protections, working to diminish government’s role in assuring even minimally healthful conditions for all, leaving it to those at risk to protect themselves.

Justice in Cleanup and Rebuilding

The cleanup and rebuilding effort now beginning also raises questions of justice. Community members and environmental justice leaders have raised concerns about when and how the contaminants left by floodwaters will be cleaned up, citing evidence of inequities in environmental cleanups more generally. They and others have also questioned the rush to waive standard health, safety, environmental, and social protections – allowing refineries around the nation to forego Clean Air Act requirements, and allowing federal contractors to pay below the prevailing minimum wage in rebuilding projects. Community members and leaders are also concerned

that the reconstruction could be a vehicle for permanently displacing many black residents from the city by way of intensified gentrification, and that people of color and the poor will be left out of important rebuilding decisions.

The Conservative Vision

Many conservatives appear eager to use Katrina as an opportunity to implement a broad conservative agenda that includes deregulation, limits on tort remedies, and evisceration of important environmental safeguards. More generally, some conservatives have reacted to Katrina by advancing the argument that the failure of the government to respond effectively to Katrina is proof of their belief that government is always inept because governmental bureaucracies are by their very nature ineffective. The argument’s conclusion is that we need less government – a cruelly ironic message indeed for the citizens of New Orleans whose government abandoned them with so little for so long.

The Progressive Vision

As CPR’s book, *A New Progressive Agenda for Public Health and the Environment*, documents, progressive government has made substantial strides in cleaning up our environment. The book sets out a series of fundamental principles that can help guide decision making as we reexamine our policies and priorities in the aftermath of Hurricane Katrina.

Address the Source Not the Victim: Pollution control and cleanup laws and policies that place the burden of avoiding harm on citizens, rather than requiring control by the sources of pollution, are unfair and expose all of us to higher risk in the event of a catastrophe.

Reduce Ignorance / Democracy Demands Disclosure: The many questions about the toxic soup of floodwater and sludge left by the hurricane highlights the vital importance of collection and disclosure of information about potentially hazardous substances produced, used, and stored by a wide array of industries.

Better Safe than Sorry: A precautionary approach to planning and preparation for such emergencies may be both necessary to satisfy the American public's basic moral impulses and a sound investment. Similarly, in evaluating our energy policy, we should employ a precautionary approach that accounts for the contribution of fossil fuels to climate change.

Be Fair: A commitment to improving the well-being of all Americans requires that there be a fair distribution of environmental and other burdens. The planning for and response to Hurricane Katrina, as well as the distribution of risks created by the legal status quo before the Hurricane, placed the most vulnerable of citizens at the highest risk.

Public Resources Belong to Everyone: In the aftermath of Hurricane Katrina, we are reminded of the key role wetlands play in protecting people and property today from storm impacts. Ecosystem services and values like flood control are often overlooked in decisions regarding the fate of natural resources, even under laws that purport to protect the public interest.

Make Government Work: Perhaps no message is clearer in the wake of Hurricane Katrina than this: Government has a vital role to play in protecting life and property from natural and man-made disasters and in helping the recovery from such disasters. But government requires adequate funding and appropriately-structured institutions to perform these critical roles. Those who advocate further weakening of government would either leave us unprotected or turn important functions over to unaccountable private hands. Neither option can safeguard the public.

Key Questions

- The failures of government preparation for and response to Katrina demand thorough, independent, and nonpartisan investigation. This report lays out dozens of questions that should be considered in that effort, extending far beyond questions of basic personnel competence. They include:
- What analysis was performed in reaching the decision not to fully fund Coast 2050? Are there ecosystem restoration initiatives like Coast 2050 in other areas of the country vulnerable to natural or man-made disasters that have gone unfunded but which may help us to avoid catastrophic loss by timely investment?
- Should Congress provide more funding for the construction of channels and floodgates in the levees of the Mississippi River's southern bank that would allow sediment and freshwater to be diverted down into the delta, to restore wetlands? Should Congress fund the construction of a new navigation channel from the Gulf into the Mississippi?
- Given that natural sources of storm protection are currently being destroyed at an unacceptable rate, what changes in our environmental laws and policies are needed to fully account for the value to the public of preservation of these resources?
- Why has the government continued to spend so much money on the relatively useless MRGO Canal, given that it posed such an enormous risk to the city?
- Now that Hurricane Katrina has revealed the inadequacy of the Corps planning, should the system be enhanced to withstand the "worst case scenario" Category 4 or 5 hurricane?
- Did the Corps' cost-benefit approach to addressing the issue of loss of life lead it to downgrade the importance of constructing adequate levees to protect New Orleans or fixing the levee system to offer more protection?
- Katrina caused serious damage to the infrastructure that supports oil and gas production, as well as hundreds of facilities handling significant quantities of hazardous chemicals. How does EPA plan to conduct an independent assessment of the

- environmental releases that occurred at such facilities, including air emissions, spills of chemical product and waste, and fires caused by such events?
- What are the protocols for testing drinking water for the broader suite of chemicals likely to have migrated into supplies as a result of the storm and how are federal and state authorities ensuring that such testing gets done?
 - How will EPA ensure that the re-habitation of New Orleans, Mississippi, and other areas affected by Katrina is safe in light of remaining toxic deposits in soil and water?
 - Is all information relevant to public health and safety being shared with the public in a timely fashion?
 - To what extent did the chemical and biological contamination that has been discovered in New Orleans since Katrina result from noncompliance with or inadequate enforcement of the federal environmental laws described above?
 - Have the EPA and Congress undertaken the necessary assessment of the funding needed to fully implement and enforce federal environmental laws in order to protect public health and the environment in cases of natural and man-made disasters and reduce potential future cleanup costs?
 - A long, intentional, and successful effort to weaken the Superfund program has left it without adequate funds to address the new dimensions of risk posed by Superfund sites that Hurricane Katrina has made apparent. In addition, the aftermath of the hurricane has created need for an emergency response and may produce new sites that warrant cleanup under Superfund. What is the vulnerability of all Superfund sites, including those near water bodies, to natural and man-made disasters? Does EPA have adequate funding to undertake such an assessment? How will EPA and the states deal with the potentially responsible parties who created the sites, and either never stepped forward to pay for cleanup or paid for a remedy that now appears inadequate? Will Congress react quickly to extend the industry taxes that support the Superfund to enable a quick and adequate response to these new challenges as well as NPL sites?
- Do the oil and gas subsidies in the Energy Policy Act of 2005 make sense given high prices and high profits to oil companies? Should Congress reconsider higher fuel efficiency standards for SUVs and similar gas-guzzling and energy-inefficient vehicles, given the problems associated with both high gas prices and the human contributions to climate change?
 - What drove the failure of the city and state to have adequate emergency plans? Was it not a priority? Funding constraints? The lack of political power of those left behind? To what extent was the failure of the state and the city to evacuate or successfully shelter the vulnerable population after the storm hit a function of the lack of an adequate plan? The scope of the task? The failure of the federal government to provide quick and effective backup? A failure of coordination?
 - Assisted evacuation *before* the storm was clearly the only viable option to ensure the safety of those without the means to get out on their own. Why, once the failure to plan for evacuation forced thousands to remain, did the federal government fail to rescue promptly those left in such deadly circumstances, even though federal officials had known, at least since the Hurricane Pam simulation in 2004, that such a rescue mission would be necessary?

Contact the following CPR scholars and staff for additional information on:

- *Wetlands Policy:* Robert R.M. Verchick
- *Levees:* Thomas McGarity and Douglas A. Kysar
- *Toxic Substances:* Robert L. Glicksman
- *Superfund:* Rena Steinzor
- *Climate Change:* David M. Driesen
- *Energy Policy:* Joseph P. Tomain
- *Evacuation Planning:* David J. Gottlieb and Karen Sokol
- *Shelter Planning:* Clifford Rechtschaffen
- *FEMA & National Guard Response:* Christopher Schroeder
- *Environmental Justice:* Catherine A. O'Neill

- Why did poor, mostly black, residents of New Orleans suffer the most as a result of the emergency planning failures? What measures do all levels of government need to take to ensure that everyone is accorded equal protection from emergencies – regardless of race or income level?
- Should the federal government continue to rely on states and cities to be primarily responsible for emergency planning and response, with FEMA playing only a backup role?
- To what extent were FEMA's problems the result of the emphasis in DHS on responding to threats from terrorists?
- What was the role of cuts to FEMA's budget for hurricane disaster planning?
- What role did the reliance on outsourcing and privatization play?
- What accounts for the failure of the National Guard to provide an effective and rapid back-up to the first responders in New Orleans?
- What steps must be taken to ensure that the poor and people of color have adequate opportunities to participate in the decision making processes associated with rebuilding?

Historical Roots of the Disaster: Hollow Government and Failed Protection of Public Health, Safety, and the Environment

Wetlands Policy and Erosion: Decades of Neglect

Louisiana's coastal plain contains one of the largest expanses of coastal wetlands in the contiguous United States.¹ Sadly, 90 percent of the nation's coastal wetlands *loss* occurs here too.² Built by the deltaic processes of the Mississippi River, Louisiana's coastal plain hosts an extraordinary diversity of coastal habitats, ranging from natural levees and beach ridges to large swaths of forested swamps, to freshwater, intermediate, brackish, and saline marshes. These features – which nourish wildlife, filter water, and dampen storm surges – help make the coastal

plain, to use the Corps' words, one of “the most productive and important natural assets” in the country.³

While most people do not realize it, one of the most important services provided by coastal marshes involves storm protection. Imagine blasting water through a garden hose at full force onto a cement driveway. The water splashes and surges, fanning out in many directions. Now imagine spraying water from the same hose onto a thick, dense lawn. The difference between the cement and the lawn is the difference between a storm path composed of open water and denuded coast and one composed of lush forests and marsh. Louisiana's coastal wetlands act as vast sponges, absorbing billions of gallons of rainfall and shielding people and property from storms. The effect is impressive, even for city dwellers who have never seen a marsh: every two miles of wetlands south of New Orleans reduces tropical storm surges there by half a foot.⁴ Louisiana's coastal wetlands and barrier islands also help shield an internationally significant commercial-industrial complex from the destructive forces of storm-driven waves and tides.⁵

In addition to storm protection services, the Louisiana coastal plain also provides numerous other benefits. It offers habitat for countless species, including commercially significant sea life and waterfowl.⁶ With more than five million birds wintering in Louisiana, the Louisiana coastal plain provides crucial rest stops to migrating birds.⁷ Finally, Louisiana's coastal marshes provide services vital to water quality. The marshes function as giant “water treatment plants,” filtering out vast quantities of nitrogen, phosphorous, and other pollutants from incoming water bodies.⁸ Taken together, the many services of Louisiana's coastal wetlands make them a treasure every bit as unique and breathtaking as the city of New Orleans itself. The coast's storm protection, habitat, and water treatment services, while impossible to precisely quantify, surely amount to billions of dollars of commercial benefit per year.⁹

The Failures of Wetlands Law and Policy: Bayou Farewell

Unbelievably, this giant of all coastal wetlands, this biotic and commercial treasure, is disappearing before our very eyes. Since the 1930s Louisiana has lost more than 1.2 million acres of coastal wetlands.¹⁰ Today, the Corps believes Louisiana is losing about 6,600 acres per year, a

rate that if unchecked will result in a net loss of 328,000 acres – or an area roughly the size of Rhode Island – by 2050.¹¹

Why is this happening? The effect is partly due to natural subsidence: the soft soils of the coastal plain naturally shift and sink over time.¹² But this phenomenon, at best, explains only a small fraction of the loss.¹³ The real culprits are human-made: Louisiana’s vast network of levees, navigational channels, and oil-and-gas infrastructure. While all of these things are important to safety and commerce, their significant effects on Louisiana’s wetlands require intense study, mitigation, and remediation.

The levee system accelerates coastal land loss by reducing the natural flow of a river’s freshwater and sediment to wetland areas where lost land would then naturally be replenished.¹⁴ Instead, that valuable water and sediment is funneled down the Mississippi and shot into the Gulf, toward the outer continental shelf, where the formation of barrier islands is impossible.

Louisiana’s coastal plain is crisscrossed with a vast matrix of navigational canals, including ten major navigational channels¹⁵ and literally thousands of smaller access canals serving navigation, allowing oil rig access, and cradling oil and gas pipelines.¹⁶ This network severely disrupts the natural flow of water and nutrients in wetland areas, isolating and starving them.¹⁷ The major navigational channels pose their own special threat to flood control by sometimes acting as “hurricane highways,” allowing storms to sweep inland, past marshland, like liquid bulldozers.

In the 1980s, prompted by scientific studies documenting Louisiana’s land loss, local groups made up of environmentalists, shrimpers, scientists, and business people began pushing for plans to save what would later be called “America’s Wetland.”¹⁸ One result of such efforts was the federal Coastal Wetlands Planning, Protection and Restoration Act of 1990 (the “Breaux Act”), which created a federal and state task force to implement wetlands restoration projects with annual funds of around \$40 million.¹⁹ Although the projects

saved hundreds of acres of wetlands, advocates soon realized that a \$40 million program was insufficient. A much more ambitious plan was needed if the coast would ever be saved.

In 1998, state and federal agencies, with the participation of a diverse group of local churches, scientists, environmentalists, and fishermen, developed a book length plan called “Coast 2050: Toward a Sustainable Coastal Louisiana,” which offered a host of ecosystem restoration strategies.²⁰ The underlying principles of the

Since the 1930s Louisiana has lost more than 1.2 million acres of coastal wetlands. Today, the Corps believes Louisiana is losing about 6,600 acres per year, a rate that if unchecked will result in a net loss of 328,000 acres – or an area roughly the size of Rhode Island – by 2050.

Coast 2050 Plan were to restore or mimic the natural processes that built and maintained coastal Louisiana. The complete plan, to be implemented over the next 50 years carried a price tag of \$14 billion, more than twice as much as the Everglades restoration project (nearly \$8 billion) and about the same as Boston’s new

underground highway, “The Big Dig.” Though expensive, Coast 2050 actually seemed a bargain, considering the costs of doing nothing threatened to exceed \$100 billion in lost jobs, lost infrastructure, lost fishing, and increased hurricane damage.²¹

But Coast 2050 was never funded. In 2004, hamstrung by climbing deficits, the White House demanded, under pressure from the Office of Management and Budget and the Council for Environmental Quality, that the Corps lower its sights and propose a scaled-down 10-year plan that focused only on a few projects that would cost between \$1 to 2 billion.²²

Still, state officials had hopes of securing more funds to restore the wetlands’ storm-shielding capabilities. Louisiana Governor Kathleen Blanco pleaded with the federal government to grant her state “just a fraction” of the \$5 billion it annually received from oil and gas leases on the outer continental shelf off of Louisiana’s coast.²³ Louisiana, of course, never received a greater share of oil and gas royalties for wetlands protection. In the end, it did not even receive the anticipated \$1 to 2 billion. The President’s 2005 Energy Bill provided only \$540 million for Louisiana’s coastal restoration over four years.²⁴ In the wake of the current disaster, it is time to renew the promise of Coast 2050, completely funding it.

Critical Questions **Wetlands Policy and Erosion: Decades of Neglect**

Hurricane Katrina has brought to our attention the enormous but often overlooked value of wetlands and how they can help protect us from catastrophic loss. It revealed that our exclusive focus on structural storm protection may have deprived us of complementary, highly effective, and cost-effective ecosystem services. Although current law and policy nominally requires consideration of these and other wetland values, the pace of destruction that we allow belies this mandate. In reality, decisions to allow the destruction of wetlands rarely consider the cumulative effects of wetland loss, and institutional pressures built into our regulatory system tilt the scale in favor of wetlands destruction.²⁵ Among the critical questions to be investigated further are the following:

- What analysis was performed in reaching the decision not to fully fund Coast 2050?
 - Did the decision making process adequately account for all the values that are relevant to the decision?
 - In light of the Katrina disaster, is the Bush Administration prepared to revisit Coast 2050 as an essential component of the federal contribution to the rebuilding efforts?
- In connection with the New Orleans reconstruction efforts, should Congress:
 - provide more funding for the construction of channels and floodgates in the levees of the Mississippi River's southern bank that would allow sediment and freshwater to be diverted down into the delta, to restore wetlands?
 - fund the construction of a new navigation channel from the Gulf into the Mississippi so ships do not have to enter the river at its three southernmost tips, which could then fill with sediment and nourish coastal wetlands?
- Are there obstacles under current federal law that impede consideration of the full value of non-structural, ecosystem service approaches to storm protection which should be addressed?
 - If so, how can these be removed?
 - If not, how can Congress and the Corps assure that the design and evaluation of improved storm protection for New Orleans and other vulnerable areas adequately considers non-structural components?
- If natural sources of storm protection are currently being destroyed at an unacceptable rate, what changes in our environmental laws and policies are needed to fully account for the value to the public of preservation of these resources?
- Are there ecosystem restoration initiatives like Coast 2050 in other areas of the country vulnerable to natural or man-made disasters that have gone unfunded but which may help us to avoid catastrophic loss by timely investment?

Broken Levees: Predictions That Came True

The failure of the levees in New Orleans was catastrophic for the city and for its most vulnerable citizens. In the aftermath of Hurricane Katrina, it is important to understand why the levees failed and what actions, had they been taken, would have prevented, or reduced, the flooding of New Orleans.

The Facts: Inadequate Levees

The Levee System

New Orleans is protected from Lake Pontchartrain and Lake Borgne, which are located almost side-by-side on the North side of New Orleans, by an interconnected series of levees that extends along the lakes. (A map of the lakes and levees by the *Times Picayune* can be found at <http://www.nola.com/hurricane/popup/nolalevees.jpg.html>.) These levees are considerably

smaller than the ones that protect New Orleans from flooding of the Mississippi. While the levees on the Mississippi average 25 feet above sea level, these levees range from 13.5 to 18 feet above sea level in height. Another series of somewhat lower levees provides protection to St. Bernard Parish, which is located to the north and east of New Orleans, from Lake Pontchartrain on the north and from Lake Borgne and the Gulf on the east. Parts of the parish are located between the two lakes.

Because New Orleans is below sea level and rapidly sinking, rainwater that flows into the city must be removed not by natural drainage, but with huge pumps that force the water to move along three man-made canals, called “outfall canals,” to Lake Pontchartrain. The canals are lined with concrete walls that prevent the water from spilling into the city. Water flowing through the canals is nearly as high as the rooftops of some houses adjoining the canals.²⁶ All of the levees were built by the Corps and are maintained by various local levee districts.²⁷

In addition to the drainage canals, the Corps of Engineers constructed two very large canals that permit ocean-going vessels to move from the Mississippi River through the city to Lake Pontchartrain or the Intracoastal Canal near Lake Borgne. The Industrial Canal slices north/south across the city between the river and the lake at the point where they are closest to each other. The MRGO canal bisects the Industrial Canal and travels east/west to the Intracoastal Canal near Lake Borgne. The shipping canal levees consist primarily of concrete floodwalls and earthen levees.

Why the City Flooded

The water that flooded New Orleans did not flow over the levees situated between the lake and the city. Instead, it appears that the surge flowed up the 17th Street and London Avenue canals and caused one breach of the floodwall along the 17th Street canal and two breaches of the floodwall along the London Avenue canal. In other words, the water moved to the path of least resistance – the floodwalls along the canals.

The city also flooded because the levee system did not protect it from the “end around” exposure that occurred during Hurricane Katrina. The hurricane surge entered Lake Borgne from the Gulf of Mexico and proceeded up the MRGO canal to the Industrial canal in the heart

of New Orleans. Hurricane Katrina appears to have destroyed as much as 90 percent of the levees and flood walls along the MRGO canal in St. Bernard Parish as it pushed up the narrowing canal from Lake Borgne to the conjunction of the MRGO canal with the Industrial canal. Colonel Richard Wagenaar, the Corps head engineer for the New Orleans district, reported that the eastern levees were “literally leveled in places.”²⁸ That same surge probably caused the breaches in the floodwalls along the Industrial canal.

We Knew This Would Happen

Not long after the levees broke and water from Lake Pontchartrain on the north and Lake Borgne on the east began to fill New Orleans, President Bush told television correspondent Diane Sawyer that no one could have foreseen the breach of those levees.²⁹ In fact, over a period of many years, scientists had predicted that a strong storm could also breach the levees. Scientists especially feared that even a relatively weak storm coming from the right direction would push a wall of water into the heart of New Orleans from Lake Borgne through the funnel-shaped MRGO canal and into the Industrial canal, destroying the levees along the canal and flooding much of St. Bernard Parrish and the Lower Ninth Ward. It now appears that this is exactly what happened.³⁰

Moreover, the risks posed by the MRGO canal were evident. In 2002, the Corps of Engineers acknowledged that “[t]he MRGO levee is more likely to be affected than the area on the lake itself.”³¹ Proponents of closing the canal pointed out that, with the erosion of the wetlands in the unleveed stretches south and east of the city, it had “evolved into a shotgun pointed straight at New Orleans.”³²

The Failure to Protect: Bad Planning, Skewed Priorities

The failure to protect New Orleans resulted from inadequate planning by the Corps to save the city, and from the failure of federal government to fund badly needed improvements once those limitations were recognized. Neither the Corps nor Congress adequately accounted for the loss of life and property that would occur if a catastrophic hurricane hit New Orleans.

The hurricane protection plan that was implemented after 1985 by the Corps was designed to protect the city against

the “standard project” hurricane that roughly corresponds to a fast-moving Category 3 storm.³³ Scientists had for years prior to the storm predicted that the levee system could not withstand a Category 4 or Category 5 storm.³⁴ Hurricane Katrina struck the Louisiana/Mississippi coast as a Category 4 storm.

Moreover, although the MRGO canal was a primary cause of the flooding, it is seldom used and heavily subsidized by taxpayers. The canal, which was completed in 1968, is a deep draft seaway channel that extends for approximately 76 miles east and southeast of New Orleans into Breton Sound and the Gulf of Mexico. It was designed to shorten the distance for ships from the eastern shipping lanes of the Gulf to New Orleans, but it has never lived up to its predicted economic expectations. Less than three percent of the New Orleans port’s cargo traffic uses the MRGO; this amounts to less than one ship per day.³⁵ According to one estimate, the government spends \$7 to 8 million dollars per year (about \$10,000 for every large vessel that uses the canal) just to maintain the canal.³⁶

Although the vulnerability of New Orleans to a catastrophe was well known and widely predicted, the Corps has floundered in its efforts to enhance the protection of New Orleans from Lake Pontchartrain. In an award-winning series of articles on the levee system, *The Times-Picayune* concluded that the Corps of Engineers has declined to move forward with enhancements to the levee and floodwall system because “no clear bureaucratic mandate exists for reassessing the blueprints once levees are built.”³⁷ For example, an attempt in 1996 to reevaluate the Lake Pontchartrain levees broke down in disputes over modeling and other bureaucratic disagreements.³⁸ When Congress has appropriated money to protect New Orleans better, the Corps has not been in a hurry to get the job done. For example, Congress in 1999 appropriated money for a \$12 million study to determine how much it would cost to protect New Orleans from a Category 5 hurricane, but the study had not even been launched as of September 2005.³⁹

In addition, the Bush Administration has failed to fund Corps requests. Mike Parker, a former Republican Congressman from Mississippi who was until 2002 the chief of the Corps, was forced to resign when he publicly stated to the Senate Budget Committee that the national interest was being harmed by President Bush’s proposal

to cut over \$2 billion from the Corps’ \$6 billion budget.⁴⁰ The Bush Administration rejected an Corps request for \$27 million to pay for hurricane protection projects along Lake Pontchartrain and proposed a budget of only \$3.7 million. Congress ultimately appropriated \$5.7 million for the projects, but the Corps still had to delay seven levee improvement contracts.⁴¹ After Hurricane Katrina struck, Mr. Parker stated that President Bush had not adequately funded improvements to the very levees in New Orleans that had been breached; indeed, Mr. Parker stated that had full funding been authorized “there would be less flooding than you have.”⁴² An official Corps memo dated May 2005, long after Parker left the agency, seemed to corroborate this possibility. It stated that the Bush Administration’s funding levels for fiscal years 2005 and 2006 were not enough to pay for new construction on the New Orleans levees.⁴³

There are now strong indications that the critical floodwalls along the outlet canals did not breach because the water surged over them and eroded away their support but because they were not capable of withstanding even the surge of a Category 3 hurricane.⁴⁴ Whether this failure of the floodwalls was attributable to poor design or poor construction and maintenance remains to be seen, but in either case the Corps and the local levee authorities bore the responsibility for ensuring that the floodwalls were adequately designed, built, and maintained.

Although it is tempting to blame the current administration for the failure to fund critical levee improvement projects, the truth is that improving the Lake Pontchartrain levees has been a low priority for many administrations, Democratic and Republican, and for Congress. The Bush Administration and Congress have had other priorities over a longer period of time than the last four years. In fact, it seems clear that even the Louisiana congressional delegation has on occasion insisted that the Corps direct its resources to projects like a \$194 million project for deepening the Port of Iberia and replacing the lock on the Industrial canal.⁴⁵

The Bush Administration and Congress are influential in setting budget priorities because the Corps is very reluctant to participate in the process of setting priorities for its projects. Moreover, once the Corps has determined that the benefits of a proposed project exceed its costs, the Corps leaves it to Congress to decide through the appropriations process which projects receive funding

and which do not.⁴⁶ Congress is ordinarily willing to consider passing appropriations for large public works projects, however, only in the wake of major disasters or after years and years of study.⁴⁷

The Right-Wing's Blame Game

The reasons why New Orleans and its vulnerable citizens were not better protected are clear. The levee system was not designed to protect the city from more than a Category 3 hurricane system and there was little administration or congressional support for making improvements in the levee system despite the fact that its limitations were widely recognized.

Some conservatives, however, are attempting to tell another story. Not long after the damage to New Orleans became apparent, conservative pundits began a concerted campaign to blame the damage on environmental litigation brought against the Corps in 1976.⁴⁸ A House task force has decided to add the litigation to its agenda as it considers reforms for the National Environmental Policy Act (NEPA). And the Bush Administration Justice Department has circulated an email to its attorneys asking for information on any case in which they have defended the Corps from environmental claims involving the levees protecting New Orleans.⁴⁹ These claims are wholly unfounded.

In the wake of Hurricane Betsy, which struck in September 1965, Congress authorized a massive hurricane protection improvement effort called the Lake Pontchartrain and Vicinity Hurricane Protection Project (LPVHPP) to provide hurricane protection to the Greater New Orleans metropolitan area.⁵⁰ To implement this statute, the Corps studied two major options – the “high level” option and the “barrier” option. The Corps initially chose the barrier option and it prepared an Environmental Impact Statement (EIS) on this option, as it is required to do by the National Environmental Policy Act. The litigation was over the validity of the Corps’ EIS. The court held the EIS was inadequate and it enjoined the Corps from proceeding with the barrier option until it fixed the problems in the EIS.

The lawsuit brought by the environmentalists was entirely justified. The court noted, for example, that the Corps’ chief engineer for the New Orleans Division had requested further model studies because the studies upon which the draft EIS relied were undertaken more than a decade earlier for an obsolete version of the project.⁵¹ More importantly, the biological analysis undertaken in the final EIS relied entirely on a single telephone conversation with a single marine biologist who was asked to speculate on the impact of the project on marine organisms using the inter-lake flow rates predicted by the obsolete model.⁵² Nevertheless, the court would have

lifted the injunction as soon as the Corps simply updated the EIS with adequate hydrologic modeling, as requested by its own chief engineer, conducted a more thorough biological assessment, and considered a few reasonable alternatives.

Instead of fixing the EIS, the Corps reevaluated the “high level” alternative and, according to the General Accounting

Office, decided to adopt that approach instead because the high level option “would cost less than the barrier plan” and “have fewer detrimental effects on Lake Pontchartrain’s environment.”⁵³ One of the factors underlying the changed cost assessment was no doubt the escalating costs of acquiring rights of way from property owners who opposed the barrier project.⁵⁴ Another factor that likely influenced the Corps was intense public opposition to the barrier plan from local political officials and local citizens.⁵⁵ The high level plan of 1985 was substantially completed prior to Hurricane Katrina and repair and maintenance projects along the levees and floodwalls were ongoing.⁵⁶

Finally, even if the barrier option had been pursued, much of New Orleans still would have been flooded. The barrier plan that the Corps was considering at the time of the litigation would not have prevented the surge from moving from Lake Bourne through the funnel of the MRGO canal into the heart of New Orleans, and it might well have exacerbated that surge. And, as discussed earlier, the project was designed to withstand only a fast-moving Category 3 hurricane.

The reasons why New Orleans and its vulnerable citizens were not better protected are clear. The levee system was not designed to protect the city from more than a Category 3 hurricane system and there was little administration or congressional support for making improvements in the levee system despite the fact that its limitations were widely recognized.

Critical Questions **Broken Levees: Predictions That Came True**

The failure of the levees in New Orleans was predicted. Scientists have warned for years that a strong storm could breach the levees. The reason is simple. The levees were not designed and built to protect the city and its most vulnerable citizens from more than a Category 3 hurricane. Efforts to improve the levees have fallen victim to budget cuts in the Bush Administration and before. The Corps also constructed a little used ship canal through the middle of New Orleans that made the city considerably more vulnerable to the flooding that occurred. These failures raise a number of critical questions:

- The MRGO Canal was a funnel for channeling storm surge from Lake Borgne and the Gulf of Mexico into the heart of New Orleans. Prior to the hurricane, the Bush Administration ordered the Corps to study the option of closing the canal altogether in light of its very low economic benefits, its adverse effects on wetlands, and the threat it posed to the city during hurricanes.⁵⁷
 - Why has the government continued to spend so much money on a relatively useless canal that posed such an enormous risk to the city?
 - Should the rebuilding plan for the City of New Orleans include closing the canal, as the Bush Administration has recently suggested?
 - Should the wetlands south of New Orleans that the canal has destroyed be restored?
- Now that Hurricane Katrina has revealed the inadequacy of the Corps planning, should:
 - the levee system be enhanced to withstand the “worst case scenario” Category 4 or 5 hurricane?
 - the levee system be redesigned to reduce the reliance on floodwalls and enhance the design, construction, and maintenance of the floodwalls that remain?
 - the Corps, whether or not Congress elects to upgrade the levee system, investigate the assumptions underlying the design of the floodwall system along the Intracoastal, MRGO, and outlet canals?
 - the Corps consider a more protective and environmentally sensitive floodgates project for Lake Pontchartrain that also protects Eastern New Orleans and St. Bernard Parish?
- The Corps is very hesitant to spend time and resources reevaluating projects that have already been completed, even when Congress appropriates resources to conduct such studies. Should Congress:
 - require the Corps to prepare systematic reevaluations of some of its most important life-saving projects?
 - provide tools to allow interested parties to stimulate such reevaluations when the Corps appears reluctant to do so?
- According to the Government Accountability Office (GAO), the Corps’ guidance (Engineer Regulation 1105-2-100) directs analysts to address the issue of prevention of loss of life when evaluating alternative plans, but they are not required to formally estimate the number of lives saved or lost as a potential effect of a project.⁵⁸
 - In planning to improve hurricane protection for New Orleans, did the Corps take into account the loss of life that would occur in a catastrophic storm like Hurricane Katrina, and how was this done?
 - Did the Corps’ approach to addressing the issue of loss of life lead it to downgrade the importance of constructing adequate levees to protect New Orleans or fixing the levee system to offer more protection?

Toxics in the Air and Water: The Long-term Poisoning of New Orleans

Environmental Problems Left in Katrina's Wake

Katrina left nine distinct categories of environmental problems in her wake:

1. flooded and contaminated drinking water supplies;
2. multiple oil spills, typically from above-ground tanks;
3. leaking underground tanks containing fuel and chemicals;
4. flooded sewage treatment plants;
5. flooded buildings, lagoons, lots, and individual containers containing a wide array of toxic chemicals that were washed out into the ambient environment;
6. the concentrated residue of many fires spread into the environment;
7. building debris that is cultivating harmful molds;
8. contaminated sediment and other sludge throughout the city; and
9. toxic exposure of cleanup and other workers as a result of this pollution.

On September 19, 2005, EPA estimated that in Louisiana, 498 of 683 drinking water facilities are operational and meeting EPA standards; 26 are operating on a "boil water notice"; and 159 are either inoperable or their status is unknown.⁵⁹ Together, the 683 facilities serve 2.5 million people. In Mississippi, 1,073 of the 1,368 drinking water systems are operational; 231 are operating on a boil water notice; and 64 are either inoperable or their status is unknown. The 1,368 systems serve 3.2 million people. In Alabama, 72 drinking water systems serve approximately 960,000 people. Seventy-one are operational, and one is operating on a boil water notice.

EPA estimates that there were five major oil spills in the New Orleans area to date;⁶⁰ one newspaper reported that six spills had occurred.⁶¹ The Coast Guard has estimated that the spills involved 160,000 barrels, and that it has recovered 50,000 barrels to date (a barrel holds 42 gallons).⁶² Additional petroleum contamination has

resulted from the flooding of an estimated 350,000 vehicles. The Louisiana Department of Environmental Quality reported that oil storage tanks located near the Mississippi River, with a combined capacity of two million barrels, appeared to be leaking.⁶³ The Coast Guard has estimated that more than seven million gallons of oil may have been spilled from industrial plants, storage depots, and other facilities in southeastern Louisiana as a result of Katrina.⁶⁴ These spills have caused as-yet unclear damage to the Gulf and the River.

As for the floodwaters that swept New Orleans and coastal communities in Mississippi and Alabama, the most immediate threat to human health is biological contamination.⁶⁵ Experts have likened the bacterial concentrations in the floodwaters to untreated sewage.⁶⁶ EPA also stated on September 19, 2005 that *e. coli* levels in flood waters are "greatly elevated" and remain "much higher" than EPA's recommended levels for contact. Those exposed to the bacteria-laden floodwaters could contract diseases such as hepatitis-A and salmonella poisoning.⁶⁷ Intestinal diseases can be transmitted by ingesting sewage or simply by being in the water without adequate protective clothing.⁶⁸ These risks are particularly acute for children, the elderly, or those with compromised immune systems.

The bacterial contamination that creates these risks of infectious disease resulted in part from damage to sewage treatment plants located in the three states most directly affected by the storm, hundreds of which were damaged or rendered inoperable. Leaking sewage lines added to the problem.⁶⁹ The decomposition of dead people and animals contributed still further bacterial contamination to the floodwaters.

The waters covering New Orleans' streets are also contaminated by a range of toxic chemicals,⁷⁰ posing significant health and safety risks. Significant amounts of lead, a heavy metal that creates risk of brain damage in young children, have been detected in the floodwaters. At one location, lead was detected at concentrations nearly 700 times higher than EPA standards for safe drinking water.⁷¹ Tests conducted by EPA and the Louisiana Department of Environmental Quality also found high levels of arsenic and hexavalent chromium.⁷² Other chemicals discovered in the floodwaters have been a variety of heavy metals and polycyclic aromatic hydrocarbons, all of which have been linked to cancer

risk or developmental problems.⁷³ Some experts have stated that they would be surprised if continued testing fails to detect unsafe levels of some of these contaminants.⁷⁴

Some of these contaminants came from the kinds of products found in most homes and commercial businesses, such as chemical cleaners, bleach, and pest control products.⁷⁵ EPA reports that it has collected 20,934 “orphan” containers with unknown contents – barrels lying in common areas with no apparent owner – throughout the affected region.⁷⁶ Others undoubtedly originated from inundated industrial facilities subject to environmental regulatory programs or from sites that managed hazardous chemicals improperly in the past.⁷⁷ These problems are daunting, and will take months, even years, to clean up. Chemical contamination in many areas is likely to return existing hazardous waste sites to “imminent endangerment” status, and create brownfield sites that are unsuitable for redevelopment.

Government officials responsible for removing the floodwaters from the city faced a Hobson’s choice: they could wait to pump the water out of the city until a mechanism was put in place to remove at least some of the contamination, or they could pump the contaminated water back into Lake Ponchartrain and the Gulf of Mexico. Both the risks that would result from waiting to remove the water until it could be decontaminated and the costs of constructing the necessary bioremediation facilities were deemed unacceptably high.⁷⁸ The pumping of floodwater with so much bacterial waste, however, is likely to lower the dissolved oxygen content of the Lake and the Gulf, creating a risk that many fish and other water-dependent organisms will die.⁷⁹ Moreover, the intentional discharge of this contamination is a sad sequel to hard-won success in cleaning up Lake Ponchartrain to the point that portions were recently deemed safe for swimming.⁸⁰

EPA has deployed hundreds of workers to the Gulf Coast and is working frantically to test floodwaters, soil, air, and drinking water sources to determine whether they pose unreasonable risks to the environment. When the Agency discovers hazardous conditions, it will face the challenging task of figuring out how to remove, neutralize, or contain the contamination before people return to the area. EPA must also supervise the removal of toxic sludge, containers with unknown contents, toxic

debris, and polluted floodwaters. Compounding what is an extraordinarily difficult technical challenge — probably the greatest challenge EPA has ever faced — are the dual political challenges of finding adequate resources for this work and controlling public officials, including the Mayor of New Orleans, from allowing people back into the city too soon.

At the moment, EPA is receiving a “pass through” from FEMA to cover this work, but it is not clear how long that form of funding will last. If and when the Agency runs out of external funding for emergency response, Superfund will be the primary source of funding for its long-term work. As explained further below, that program is starved for resources itself, along with many of the Agency’s other programs. President Bush has warned that the nation faces deep budget cuts in domestic programs to pay for Katrina’s aftermath, that he will not consider raising taxes under any circumstances, and that we must “stay the course” in Iraq. The funding squeeze these policies will soon cause could cripple EPA’s capacity to do anything but cope with Gulf Coast problems.

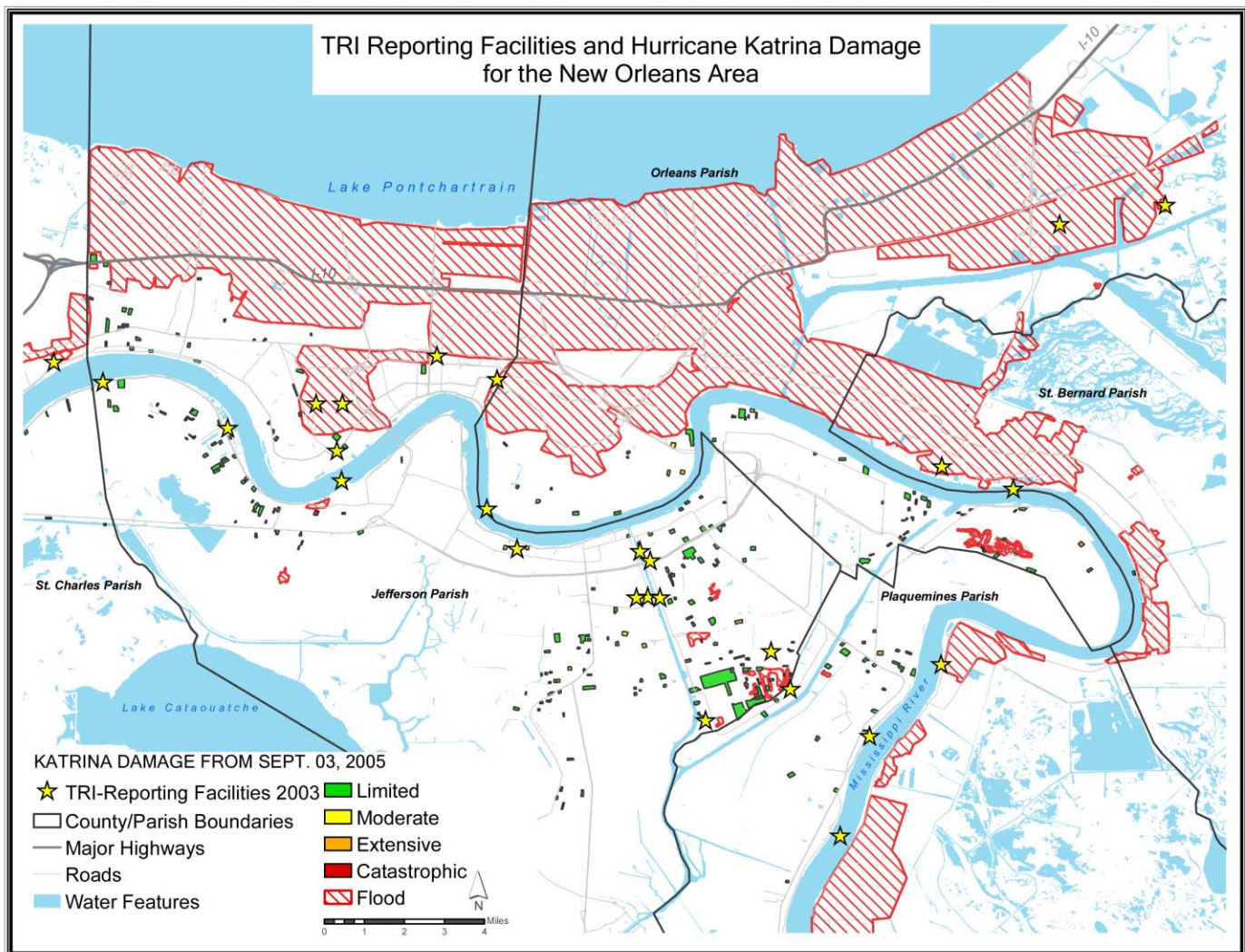
Another important issue is whether any of this environmental damage could have been avoided. Were factories and oil storage facilities located too close to the Coast? Did responsible industries secure them sufficiently in anticipation of a natural disaster that had been predicted for years? Were efforts to clean up toxic waste dumps before the hurricane adequate, or did superficial cleanups leave these dangerous sites vulnerable to the inevitable floods?

Roots and Results of the Disaster: Hollow Government, Weak Enforcement, and the Slow Death of Superfund

The CWA and the RCRA could have prevented the environmental damage caused by Katrina if they had been implemented effectively, and the Superfund statute (know formally as the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA) is critically weakened just when it must play the central role in cleaning up after the disaster.

Prevention

The CWA requires the preparation of Spill Prevention Control and Countermeasure Plans by facilities that store petroleum products in above-ground containers holding



more than minimal amounts. Such plans must include physical containment, as necessary, to prevent oil spills because, among other things, it is a civil and criminal violation of the Act to allow such spills either intentionally or negligently. Although reports of the failure of oil tanks on the Gulf Coast are just emerging, and there has not been time to investigate whether adequate plans were in place, it is highly likely that many of the sources of the spills did not construct adequate containment.

Similarly, the RCRA requires virtually all facilities that manage, store, or dispose of hazardous waste to have emergency plans that prevent the waste from escaping into the environment in the event of an accident, including foreseeable events like a hurricane. It is not yet clear how many of the 20,934 containers EPA picked up in the streets held hazardous wastes, but based on past experience, it is highly likely that many did. (Chemical products are valuable and therefore more carefully secured.) Once again, the aftermath of Katrina

must include an investigation of the compliance by New Orleans businesses with these important requirements.

Finally, there is the troubling question of flooded Superfund sites, with damage that was exacerbated by poor initial cleanups. The National Priorities List (NPL) is limited to the 1238 worst abandoned toxic waste sites in the country. There are three NPL sites in the path of the hurricane, and the *Washington Post* reported on September 10, 2005 that one site in the northeast section of New Orleans is submerged in water and that two sites are flooded, with their dangerous contents joining the sewage and household hazardous chemicals in the water that will soon be pumped into the Gulf of Mexico or Lake Pontchartrain.⁸¹ In an interview with CPR, long-time Louisiana environmental consultant Wilma Subra confirmed the accuracy of the *Post* story, as well as the following analysis of its implications.⁸²

Agriculture Street Landfill: The 'Black Love Canal'

The site that was the hardest hit by Katrina is the Agriculture Street Landfill, sometimes referred to as the “black Love Canal.” The 95-acre site, located three miles south of Lake Pontchartrain in a community that is 60-80 percent African American, is an old municipal landfill where ordinary garbage was mixed together with liquid hazardous waste to a depth of between two and 32.5 feet.⁸³ In 1969, the City of New Orleans built a low-income housing project on top of the site, as well as the Moton Elementary School.⁸⁴ In 1993-94, after community leaders demanded that EPA conduct a full investigation of the site, the Agency decided that contamination at the site warranted an emergency cleanup and placement on the NPL.

In a health assessment prepared for the site by the Agency for Toxic Substances and Disease Registry (ATSDR), a unit of the Centers for Disease Control, experts concluded that the undeveloped portions of the site posed a “public health hazard” and that if the land was ever used for residential housing, exposure to lead, arsenic, and polycyclic aromatic hydrocarbons (PAHs) in the soil could pose an “unacceptable health risk.”⁸⁵ All of those toxic materials are now floating through the streets of New Orleans.

EPA's choice of a remedy for the site has significantly exacerbated this damage. Instead of excavating the site, treating contaminated soil in situ, or even installing a liner that would prevent the landfill's contents from washing away, EPA decided that its final remedy would be limited excavation of less than two-thirds of the site⁸⁶ and the placement of two feet of “clean fill” on top of the buried waste.

Residents asked to be relocated from their housing on top of the site, a project that would have cost approximate \$12 million, and have even filed suit demanding that relocation. EPA refused and has instead spent \$20 million on the cleanup described above. In desperation, a delegation traveled to Geneva Switzerland in 1999 to ask for help from the U.N. Commission on Human Rights.⁸⁷

Bayou Bonfouca

This 54-acre site located in Slidell, Louisiana, was a wood treatment facility using creosote that operated since the late 1800s. Some 26,000 people live in the community,

and the house nearest the site is 400 feet away.⁸⁸ Even though the site is supposedly cleaned up, the Louisiana Department of Environmental Quality warns citizens not to swim, and to avoid contact with over seven miles of Bayou Bonfouca, identifying the pollutant of concern as creosote.⁸⁹ The ATSDR health assessment concluded that the site is a “public health hazard” and worries that because swimming advisories are “voluntary,” the potential for immediate skin burns and long-term illnesses is ongoing.⁹⁰ The companies that created the site paid to install a fence around it. EPA then used the site to burn hazardous wastes from another nearby Superfund site, ultimately burying the concentrated ash from that process in Bayou Bonfouca. The only “remedy” installed at Bayou Bonfouca was the construction of a plastic and clay cap over the top of the creosote piles, the remnants of which were likely washed out in the flooding.

Madisonville Creosote Works

This 29-acre site is also a former wood treatment facility.⁹¹ EPA excavated some contaminated soil, treated it, and put it back down at the site. To cope with the thousands of gallons of creosote waste still under the surface, the Agency installed “recovery” trenches beneath the surface that would capture the creosote waste, keeping it out of local drinking water supplies. Flooding is likely to have disrupted those trenches, potentially spreading contamination into the community's water.

Cleanup

The Superfund program covers more than NPL sites. In fact, the statute and the money that funds it are the primary sources for EPA's legal authority and resources to respond to releases of hazardous substances into the environment. Generally, state and local governments cope with small spills and leaks. But a disaster on the magnitude of Hurricane Katrina is exactly what Superfund's “emergency removal” provisions were designed to address.

Among the sources of revenue for the Superfund toxic waste cleanup program were taxes on the production of crude oil and the manufacture of chemical feedstocks, as well as general tax revenues. The industry taxes that provide the bulk of the program's funding expired in 1995. Since the taxes expired, the program has limped along on limited funds from general tax revenues and cost recovery actions against companies that created the

sites.⁹² The result of this disastrous set of policies has been to shift a significant share of the burden of financing hazardous substance cleanups away from the industries that generate the bulk of the substances found at contaminated sites and onto the shoulders of the taxpaying public.

The problem goes beyond who pays for site cleanups; the limited funds available in the Superfund may delay cleanups and lead EPA to choose remedies that are not adequately protective of human health. With reduced funding, EPA is hard pressed to clean up sites like the ones described above, and is instead tempted to reduce its expenses by choosing remedies that are temporary and very vulnerable to bad weather along the Gulf Coast. Indeed, the remedies installed at the three sites, all of which are located in prime hurricane territory, were fated to fail, a reality EPA technical experts must have realized.

Democrats in Congress have fought a losing battle to persuade their Republican colleagues and the Bush Administration to revive the industry taxes that support the Superfund. President Clinton faced similar obstacles in the Republican Congress elected the year before the taxes ran out. The industry taxes provided about \$1.45 billion in annual funding from 1990-1995.⁹³ Current levels of general revenue funding are \$1.3 billion.⁹⁴ The cost of the remediation of toxic waste washed out by Katrina remains to be determined.

Implications for Energy Policy

The death and destruction wrought by Hurricane Katrina should cause us to ask hard questions about why New Orleans and its vulnerable citizens were not better protected. As the previous sections of this report demonstrate, these questions concern not only emergency planning and implementation, but environmental law and policy failures. Katrina also has important implications for this nation's energy policy.

We need to be concerned about current energy policies because these policies make it more likely that there will be disasters like Katrina in the future. Scientists know that burning fossil fuels results in the emission of "greenhouse" gases that trap heat. These increased emissions have warmed the earth's average surface temperature and will continue to do so. This warming has already begun melting glaciers and the polar ice cap.

Scientists predict that this melting, along with thermal expansion, will cause sea levels to rise, thereby threatening inundation in many coastal locations. This sea level rise poses an especially great threat to the Gulf Coast.⁹⁵ In addition, climate change model results "suggest a shift ... toward extreme hurricanes."⁹⁶

In order to reduce risk of intensifying disasters like Katrina, as well as the other threats posed by climate change, most of the developed world has moved to curb greenhouse gas emissions. Even though the United States emits more greenhouse gases than any other country,⁹⁷ the Bush Administration has repudiated the Kyoto Protocol, which embodies this effort. Moreover, the Administration and its Republican allies in Congress have declined to enact energy efficiency legislation that would save us money, make our industries more competitive, and prevent pollution that has produced high asthma rates and is associated with tens of thousands of annual deaths, while decreasing our vulnerability to oil supply disruptions, like the one Katrina produced.

Although global warming is a threat to everyone, experts expect the impact of climate change to fall "disproportionately" on poor persons.⁹⁸ Moreover, price spikes caused after hurricanes disrupt oil production and delivery are more than an inconvenience for those struggling to make ends meet. For most families, transportation costs constitute a very significant household expenditure. When gasoline prices rise suddenly, poorer families dependent on automobiles are hit hardest.

Policymakers, government leaders, and academic researchers, concur that continuing to increase fossil fuel use is an unwise energy policy and that concrete measures can be taken to reduce consumption.⁹⁹ So do progressive energy firms.¹⁰⁰ The environmental costs of fossil fuel use can be addressed through laws grounded in sustainable development that: are sensitive to environmental consequences; increase energy efficiencies; reduce dependence on fossil fuels; and develop more environmentally benign energy resources,¹⁰¹ but United States energy law and policy have given little more than lip service to these ideas.¹⁰²

Instead of leading, or at least joining, a world effort to wean ourselves from dependence on fossil fuels, we have chosen to try to keep prices low and to increase supply.

Critical Questions

Toxics in the Air and Water: The Long-term Poisoning of New Orleans

- Katrina caused serious damage to the infrastructure that supports oil and gas production, as well as hundreds of facilities handling significant quantities of hazardous chemicals.
 - How does EPA plan to conduct an independent assessment of the environmental releases that occurred at such facilities, including air emissions, spills of chemical product and waste, and fires caused by such events?
 - What monitoring is being undertaken and what additional monitoring should be planned to adequately determine the nature and extent of hazards to health and environmental contamination?
 - Is information from all appropriate government and non-governmental sources being incorporated into assessment of the releases?
- What are the protocols for testing drinking water for the broader suite of chemicals likely to have migrated into supplies as a result of the storm and how are federal and state authorities ensuring that such testing gets done?
- How will EPA ensure that the re-habitation of New Orleans, Mississippi, and other areas affected by Katrina is safe in light of remaining toxic deposits in soil and water?
- Is all information relevant to public health and safety being shared with the public in a timely fashion?
- To what extent did the chemical and biological contamination that has been discovered in New Orleans since Katrina result from noncompliance with or inadequate enforcement of the federal environmental laws described above?
 - Have the EPA and Congress undertaken the necessary assessment of the funding needed to fully implement and enforce federal environmental laws in order to protect public health and the environment in cases of natural and man-made disasters and reduce potential future cleanup costs?
- Had state and local officials complied with their planning responsibilities under the Emergency Planning and Community Right-to-Know Act, and, if not, did inadequate planning exacerbate the risks to health and safety now facing New Orleans?
- A long, intentional, and successful effort to weaken the Superfund program has left it without adequate funds to address the new dimensions of risk posed by Superfund sites that Hurricane Katrina has made apparent. In addition, the aftermath of the hurricane has created need for an emergency response and may produce new sites that warrant cleanup under Superfund.
 - What is the vulnerability of all Superfund sites, including those near water bodies, to natural and man-made disasters? Does EPA have adequate funding to undertake such an assessment?
 - How will EPA and the states deal with the potentially responsible parties who created the sites in the first place, and either never stepped forward to pay for cleanup, or paid for a remedy that now appears inadequate?
 - What sources of funding will EPA employ in its broader response to the contamination in the wake of the hurricane?
 - Will Congress react quickly to extend the industry taxes that support the Superfund to enable a quick and adequate response to these new challenges as well as NPL sites?

That remedy is attractive because it is immediate, local, manageable, and understandable. By building more refineries, opening federal lands to new oil and gas exploration and extraction, and by subsidizing production where recovery is difficult, oil and gas supplies can be increased and prices will fall, or so we assume. Early responses from the Administration and some members of Congress to price spikes in the wake of Katrina have followed this approach.

We cannot control the forces that influence the price of oil by subsidizing U.S. production of fossil fuels. Demand for fossil fuels is at an all time high and world demand, fueled by economic growth in enormous countries like China and India, is growing.¹⁰³ As we exhaust the planet's remaining fossil fuel resources, the cost of exploration and extraction will increase.¹⁰⁴

Energy policy in the United States tilts heavily in favor of increased reliance on fossil fuels, despite the threats to people and the environment posed by the use of such fuels. Katrina reminds us of one such important risk and of the limited solution provided by a focus on increasing the supply of fossil fuels in an effort to keep prices low. By contributing to global warming, current energy policies increase the risk of more severe coastline flooding, hurricane activity, and price spikes when petroleum supplies are disrupted by hurricanes.

Critical Questions Implications for Energy Policy

- Do the oil and gas subsidies in the Energy Policy Act of 2005 make sense given high prices and high profits to oil companies?
- Should Congress reconsider higher fuel efficiency standards for SUVs and similar gas-guzzling and energy inefficient vehicles, given the problems associated with both high gas prices and the anthropogenic contributions (*i.e.* driving cars and burning fossil fuels) being made to climate change?
- Should the federal government follow the lead of the several states that require the use of renewable portfolio standards (RPSs), which require utilities to distribute a certain percentage of electricity generated by renewable resources, as a means to reduce oil consumption and increase the use of renewable fuels?

Emergency Response Planning and Implementation

The Failures of All Levels of Government to Plan for Emergency Evacuation of All New Orleans Residents

The consequences of Katrina for anyone left stranded in New Orleans were not only foreseeable; they were foreseen. It has been frighteningly apparent since at least 1992, when parts of south Florida were devastated by Hurricane Andrew – the third Category 5 hurricane to strike the continental United States¹⁰⁶ – that New Orleans would be rendered uninhabitable by a storm of similar magnitude.¹⁰⁷ The fact that most of the city is below sea level, together with the environmental and structural factors discussed elsewhere in this paper, mean that it has long been clear what a massive hurricane like Katrina would do: leave New Orleans submerged under 10 to 30 feet of water poisoned by sewage and industrial waste, and consequently without power or drinking water.¹⁰⁸

Given these conditions, it is not surprising that in early 2001, FEMA ranked a hurricane hitting New Orleans among the top three catastrophic disasters most likely to occur in this country – along with a terrorist attack on New York City and a strong earthquake in San Francisco.¹⁰⁹ Indeed, before Katrina, various experts predicted that 20,000 to 100,000 people would die in the event of a hurricane in New Orleans.¹¹⁰ Such high estimated fatalities indicate that planners understood that over 100,000 of New Orleans's residents – disproportionately poor, black, elderly, disabled, or infirm residents – would have great difficulty getting out of the city on their own.

Although the government will not typically receive prior notice before a terrorist attack, there is often at least some advance warning of natural disasters, and of hurricanes in particular. Such notice should provide appropriate government officials with time to take the necessary steps to get people out of harm's way. There was probably no aspect of this calamity that was more accurately predicted and more avoidable with a modest amount of money and effort than the catastrophic consequences of the failure to evacuate residents of the area affected by Katrina. City, state, and federal officials knew that an

evacuation would be required to avoid huge loss of life in the event of a Category 3 or stronger hurricane. Officials also knew that over 100,000 residents did not have access to private automobiles, and that a disproportionately large percentage of these residents were African-American. In the face of this knowledge,

government officials failed to provide public transportation, leaving those unable to leave to fend for themselves.

State and Local Planning Failures

Both the state of Louisiana and the city of New Orleans had written emergency plans that purported to emphasize hurricane preparedness, particularly evacuation. These plans noted that tens of thousands of the city's residents do not have vehicles,¹¹¹ and that many disabled or sick residents would not be able to evacuate on their own.¹¹² Despite the documented lack of private transportation alternatives for these residents, the plans lacked any concrete provisions committing the government to provide transportation for people unable to evacuate without assistance. The plans are largely premised on evacuation by individuals using their cars.¹¹³ As a recent *Times-Picayune* editorial lamented, state and city “[o]fficial preparations for the storm centered on an evacuation plan designed to hasten the flow of private vehicles out of the city.”¹¹⁴

The plan apparently assumes that residents unable to evacuate, including many sick, elderly, and disabled residents, would remain behind in shelters—even though the plan itself warns that these may be unsafe and “without sufficient supplies to meet the needs of persons with special considerations.”¹¹⁵ Furthermore, the American Red Cross determined years ago that sheltering in New Orleans was not an acceptable option in the event of a severe storm like Katrina.¹¹⁶ As a sociologist with the University of New Orleans Center for Hazards Assessment, Response and Technology pointed out in her 2004 article on the need for evacuation assistance by the government: “No shelters within the city would be free of risk from rising water. Because of this threat, the American Red Cross will not open shelters in New Orleans during hurricanes greater than Category 2; staffing them would put employees and volunteers at risk.”¹¹⁷ (And indeed this is precisely what happened during Katrina.) Similarly, Walter Maestri, the Emergency Preparedness Director for Jefferson Parish, told the New Orleans *Times-Picayune* in the summer of 2002:

Evacuation is what's necessary: evacuation, evacuation, evacuation. . . . We anticipate that (even) with refuges of last resort in place, some 5 (percent) to 10 percent of the individuals who

Timeline of an Unnatural Disaster

Some key dates and events provide background for understanding how our policies and support for core governmental functions failed in the emergency response planning and implementation context.¹⁰⁵

Friday, August 26

- Louisiana Governor Kathleen Blanco declared a state of emergency in the state.
- Gulf Coast states including Louisiana began requesting National Guard support and other federal assistance.

Saturday, August 27

- At the request of Louisiana Governor Kathleen Blanco, President Bush declared a federal state of emergency in Louisiana, specifically authorizing FEMA to coordinate all disaster relief and to identify, mobilize, and provide at its discretion, equipment, and resources necessary to alleviate the impacts of the emergency.

Sunday, August 28

- New Orleans Mayor Nagin ordered the first ever mandatory evacuation of the city.
- President Bush, DHS Secretary Chertoff, and FEMA Director Brown were briefed about the danger of levee failure by the National Hurricane director.

Monday, August 29

- Hurricane Katrina made landfall as a Category 4 storm.
- FEMA Director Brown requested that DHS send 1,000 FEMA employees into the area within two days.
- The 17th Street Canal levee was breached.

remain in the face of catastrophic storms are going to lose their lives.¹¹⁸

Louisiana's Emergency Operations Plan assigns parish governments the responsibility in the first instance to instruct persons to leave, to impose traffic controls, to "[m]obilize all transportation resources," and "request assistance from the state as needed."¹¹⁹ The plan further instructs parishes "to assist in evacuating those residents who do not own vehicles" to shelters outside of the risk area "using school and municipal buses and special purpose vehicles."¹²⁰ The plan states that "[s]tate transportation resources will be made available to assist local authorities in transporting special needs persons and persons who do not have their own transportation,"¹²¹ but does not specify how this commitment will be implemented. The plan acknowledges that some people unable to evacuate on their own would therefore be left behind in so-called "last resort refuges" within the risk area.¹²²

During Hurricane Georges, which barely missed New Orleans in 1998, *all* of these residents were left behind because no efforts were made to evacuate those who did not own vehicles, and the Superdome endured chaotic conditions.¹²³ After Georges, the use of public buses to evacuate those without transportation was proposed, but never implemented.¹²⁴ When Hurricane Ivan struck New Orleans six years later, those unable to get out of the city on their own were left to face the storm in their homes, the Superdome and other "last resort" shelters, and hospitals.¹²⁵

According to a *Times-Picayune* article published about one month before Katrina, the city's Regional Transit Authority (RTA) has a plan designating 64 buses and 10 lift vans to transport people in the event of a hurricane, but not necessarily out of the city.¹²⁶ The RTA spokesperson told the paper that whether people would be taken "out of town or to local shelters would depend on emergency planners' decisions at the moment."¹²⁷ Deciding "at the moment," however, proved to be a badly flawed approach to accomplishing evacuation out of the city.

Even though the city had issued a mandatory evacuation order, it nonetheless directed buses to transport people to the Superdome and other "last resort" shelters within the city.¹²⁸ And even if the designated 74 buses had been

used to take people out of the city, hundreds more would have been necessary to transport everyone to safety.¹²⁹ But according to New Orleans Emergency Preparedness Director Joseph Matthews, "we just don't have the resources to take everybody out."¹³⁰

As noted in a *Times-Picayune* article published a little over a month before Katrina hit, apparently the best the city could do for those without transportation was to plan to help produce a DVD featuring the mayor, other local officials, and the city's American Red Cross executive director exhorting those without cars somehow nevertheless to find a way out of the city in the event of a major hurricane.¹³¹ The article concluded that "[c]ity, state and federal emergency officials are preparing to give the poorest of New Orleans' poor a historically blunt message: In the event of a major hurricane, you're on your own."¹³²

In sum, well prior to Katrina, local, state, and federal authorities were aware that these local and state plans and the resources necessary to implement them were woefully inadequate. Had they confronted the problem instead of avoiding it, and obtained aid from the federal government in advance, much of the human suffering that occurred in the immediate wake of Katrina could have been avoided.

The Federal Government's Failure to Plan and Provide Resources for Public Evacuation

Despite the ample and clear warnings provided by Hurricanes Georges in 1998, FEMA's 2001 national disaster analysis, and numerous expert predictions about the catastrophic impact a severe hurricane would have on New Orleans,¹³³ the federal government did not even begin seriously to address the situation until 2004. At that time, DHS issued a contract to a consulting firm, Innovative Emergency Management Company (IEM), for development of a "Southeast Louisiana Catastrophic Hurricane Plan." IEM executed "Stage 1" of the contract, at a cost of over \$500,000, during the summer of 2004, by convening a simulation with FEMA, state and local officials, and other critical personnel.¹³⁴

The purpose of the exercise was to create a series of plans that would be presented to the state for adoption as an official hurricane response plan. As numerous articles have reported, the simulation predicted, with disturbing accuracy, the likely impact of a serious

hurricane strike on the city. The initial report of the simulation exercise was designed, in part, to give the federal government the authority to act even without an SOS from state officials. At the close of the exercise, Michael Brown, the Deputy Director for Emergency Preparedness, Louisiana Office of Homeland Security and Emergency Preparedness, stated that over the “next 60 days,” the office would polish the action plans and would determine where to focus its efforts in the future.¹³⁵

Any further incentive that government officials might have needed to find a way to plan and fund an evacuation should have been provided by Hurricane Ivan, which hit New Orleans in September 2004. The warnings of Ivan’s approach were similar to those that would be issued for Katrina a year later – that a direct hit could send torrents of water over the city’s levees. A voluntary evacuation was declared, producing hours-long traffic jams. Those who had automobile transportation and the money to leave did so. Those who did not have the resources stayed. New Orleans Mayor Ray Nagin frankly acknowledged that the city had no way to evacuate the more than 100,000 people without personal transportation: “We can’t announce a mandatory evacuation, because we can’t deliver it.”¹³⁶

Faced with both the simulated and actual rehearsals for the potential catastrophe that was to come, DHS’s response was to *cut* funding for hurricane disaster planning. The follow-up conference designed to produce the plan recommended after the 2004 simulation exercise was cancelled. The final report has yet to be released. According to Deputy Director Brown, “*Money was not available to do the follow-up.*”¹³⁷ The federal government also failed to provide any resources to the city or state to fund emergency bus service or provide other means (such as water-borne transportation) to assist in evacuation.

On Friday, August 26 – two days before Katrina struck the Gulf Coast – FEMA staffers emphasized the need for the federal government to provide buses to evacuate those without cars. But they were not successful in getting the attention of their supervisors. According to Leo Bosner, an emergency management specialist who has worked for FEMA for 26 years, “We could all see it coming, like a guided missile. We, as staff members of the agency, felt helpless. We knew that major steps need to be taken fast, but, for whatever reasons, they were not taken.”¹³⁸

The Consequences of the Planning Failures

In the absence of any federal help, New Orleans was unable to marshal the resources to implement a public transportation evacuation plan. The National Weather Service’s bulletin on August 28, warning of Katrina’s imminent approach to the city stated:

Most of the area will be uninhabitable for weeks . . . perhaps longer. . . . Power outages will last for weeks . . . as most power poles will be down and the transformers destroyed. *Water shortages will make human suffering incredible by modern standards.*¹³⁹

In light of this warning, New Orleans’s first ever mandatory evacuation order, issued by Mayor Nagin on August 28, was clearly warranted.¹⁴⁰ Those who had automobiles and the financial ability to leave had time to evacuate; the egress routes were made one-way and the auto evacuation, even if slow, did work. But the reason that a mandatory evacuation had never been ordered previously remained: as Mayor Nagin stated after Ivan, the city simply could not “deliver,” and, consequently, the order was meaningless to tens of thousands of residents without the resources to get out on their own.¹⁴¹

With 28 percent of its residents living below the poverty level – more than twice the national average – New Orleans is one of the country’s poorest cities.¹⁴² The overwhelming majority of those living in poverty – and thus without access to a car – are black.¹⁴³ Consequently, as many black leaders have highlighted, the various governments’ failure to plan for the evacuation of those without the resources to do so on their own made it inevitable that Katrina’s victims “were largely black and poor, those who toiled in the background of the tourist havens, living in tumbledown neighborhoods that were long known to be vulnerable to disaster if the levees failed.”¹⁴⁴

Unlike the governmental failures that mark other aspects of this catastrophe – which occurred because of years of neglect, or which might have taken significant amounts of money to remedy – all that was required was the funding to organize the transportation of the city’s poorer residents and to explain to residents and responders before the fact how to find each other. This is not an impossible task. The need for large-scale evacuation was well known, but plans were necessary to save the lives

and prevent the suffering of the poor, elderly, disabled, and sick. A humane society anticipates problems and plans for everyone, particularly those least able to fend for themselves. Further investigation is necessary before a complete understanding will emerge of the failures of all three levels of government – municipal, state, and federal – to plan for the evacuation of tens of thousands of New Orleans residents, but it is already apparent that government failed to provide for the needs of the most vulnerable.

Shelter, Rescue and Recovery Planning and Implementation

For those unable to leave, the city declared the Superdome and nine other locations to be shelters of last resort, and directed buses to transport people from designated pick-up points to the shelters.¹⁴⁵ The Superdome proved woefully inadequate to provide protection and support for the nearly 100,000 who could not get out of the city. It lacked adequate pre-positioned supplies, and as Katrina hit the area, the building soon lost power, and consequently air conditioning, and nearly all lighting. In the days to come, the number of refugees at the Superdome the night of the storm swelled to more than 20,000.¹⁴⁶ Seventy percent of the Superdome roof failed, and water poured in during the storm, along with debris.¹⁴⁷

News reports described it as a “filthy, teeming” place, where crowds swelled to 25,000 and “desperate refugees wrapped in sheets, lay in their midst.”¹⁴⁸ Some people went without food or water for three or four days. Others died of heat exhaustion waiting for the buses to come.¹⁴⁹ By the end of the third day, the entire building was without running water or functioning toilets.¹⁵⁰ After Katrina struck, the Superdome was surrounded by rising floodwaters.¹⁵¹

Only forty percent of the 53 nursing homes that eventually evacuated residents did so before the storm struck.¹⁵² Among those left behind, over 10,000 patients, medical personnel, and other staff remained at the city’s nine hospitals as of Wednesday – all in need of evacuation

because the city was entirely without electricity and water.¹⁵³ “In the end, withering heat, not floodwaters, proved the deadliest killer, with temperatures soaring to 110 degrees in stifling buildings without enough generator power for air conditioning.”¹⁵⁴ Eventually, 154 patients, mostly elderly, died in nursing homes and hospitals waiting.¹⁵⁵ Meantime, from late Monday on, the Marine hospital ship, the U.S.S. Bataan, sat offshore of New Orleans, having happened to be in the Gulf of Mexico when Katrina came ashore.¹⁵⁶ The Bataan, with its six operating rooms and beds for 600 patients, as well as an on board capacity to make 100,000 gallons of fresh water a day, sat empty and unused for three days.¹⁵⁷

One eyewitness, Dana Lynn, who was at the Superdome until she was evacuated to the Astrodome in Houston on Thursday, September 1, said she had been unable to sleep since she arrived because “every time I close my eyes, I see dead bodies, disgusting water”¹⁵⁸ Once the lights in the Superdome dimmed and conditions continued to deteriorate, she became increasingly horrified at the prospect of being powerless to protect her three young children.

As the Superdome filled with people trying to escape the rising water in the wake of the storm and increasingly became a health and safety threat, thousands of people elsewhere in the city were evacuated to the convention

center, which was also woefully unprepared and understaffed.¹⁵⁹ Its roof, too, was damaged by Katrina; it, too, descended into squalor and chaos. Kay Brown, a 69-year-old who spent an interminable four days at the convention center before finally being evacuated to Houston, did not sleep during her stay there because she was so frightened, and she did her best to avoid going to the bathroom so she would not have to face the filth and smell.¹⁶⁰ Not until Friday, September 2, four days after the hurricane hit and three days after the city was flooded, did National Guard troops secure the center and bring in additional food, water, and medicine.¹⁶¹ Remarkably, while relief supplies and personnel could not seem to get to the convention center, reporters could.¹⁶²

Unlike the governmental failures that mark other aspects of this catastrophe – which occurred because of years of neglect, or which might have taken significant amounts of money to remedy – all that was required was the funding to organize the transportation of the city’s poorer residents and to explain to residents and responders before the fact how to find each other. This is not an impossible task.

On Friday, Sept. 2, a large-scale National Guard presence was finally seen in New Orleans. “Thousands of National Guardsmen with food, water and weapons streamed into New Orleans to bring relief to the suffering multitudes and to take back the streets from looters and thugs.”¹⁶³ The Guard, however, appeared initially reluctant to approach the centers where thousands of people had been waiting.¹⁶⁴ Police held people at the Superdome and the convention center with guns. The Associated Press wrote, “Police point their guns at the crowds and tell them to back off. The people take it as aggression. But when you look into these officers’ eyes, there is real fear.”¹⁶⁵ One newspaper described the crowd at the Superdome as, “a seething sea of tense, unhappy, people packed shoulder-to-shoulder up to the barricades where heavily armed National Guardsmen stood.”¹⁶⁶ Governor Blanco’s public comments compounded the tension, when she received significant press for saying that the National Guard, battle-hardened from Iraq, had authority to shoot those who resisted them.¹⁶⁷ She was quoted as saying, “These troops know how to shoot and kill and I expect they will.”¹⁶⁸ Shortly after Lt. General Honore arrived to take charge of the National Guard presence, CNN and other news outlets carried video of him ordering Guardsmen to lower their weapons when addressing civilians in the city.¹⁶⁹

As media reports from the city began to proliferate, one would have expected the federal government to recognize the urgency of the catastrophe that had befallen New Orleans and to act with alacrity. Indeed, that is what city officials were counting on. After the Hurricane Pam simulation, federal officials determined that it might take 48 to 60 hours after such a storm before they could get a large federal presence into the city.¹⁷⁰ According to local officials, the federal government had assured them that they just had to “hang in there for 48 hours and wait for the cavalry,” and that was the city’s plan.¹⁷¹ But nothing of the kind occurred. As Jefferson Parish Emergency Management Director Maestri stated to the *Washington Post*, even though city officials had told FEMA before Katrina hit specifically what they would need immediately after the storm – including medical and mortuary units, ice, water, power, and National Guard troops – “we sat here for five days waiting. Nothing!”¹⁷² Not until Friday, September 2 – four days after the hurricane hit and three days after the city was flooded – did National Guard

troops secure the convention center and bring in additional food, water, and medicine.¹⁷³

Although the FEMA-IEM simulation made clear that buses would be necessary for evacuation of those left stranded in the city, and although both Louisiana Governor Kathleen Blanco and the city’s emergency management director told FEMA after the storm passed that they would need buses to evacuate tens of thousands of people,¹⁷⁴ the agency did not even approve the requisitioning of private bus fleets until two days after the storm, on August 31.¹⁷⁵ That night, Governor Blanco learned that the FEMA-requisitioned buses had just entered the state and were still six hours from New Orleans.¹⁷⁶ In a recent interview, she explained her dismay at the sluggish federal response: “I assumed that FEMA had staged their buses in near proximity. I expected them to be out of the storm’s way but accessible in one day’s time.”¹⁷⁷ That is a fair assumption, given that federal officials not only knew that tens of thousands of people stranded in the city would need rescuing in the event of a major hurricane, but also assured local officials that the federal “cavalry” would be on its way after the storm.

More than a week after the hurricane struck, the National Guard gradually brought order to the situation, and the evacuation of those who were unable to get out gained momentum, first via buses to the Houston Astrodome, and then through an air lift taking the remaining citizens of New Orleans to various localities in Texas and elsewhere.

Institutional Weaknesses and Failures in Implementation

There seems to be little disagreement that the rescue and relocation of the tens of thousands left behind in New Orleans was inadequate, disorganized and slow, without a clear chain of command, and without adequate resources to handle the magnitude of the problems the rescuers confronted. Katrina was not, after all, the “ultra-catastrophe” claimed by DHS Secretary Chertoff as he attempted to defend the federal government’s inability to cope effectively in the first days after the hurricane had hit.¹⁷⁸ Scenarios played out by his Department as well as by state and local officials had predicted that the impact of a hurricane of this magnitude on New Orleans would approximate what in fact occurred,¹⁷⁹ although of course those planning scenarios were inaccurate in some respects.¹⁸⁰

Critical Questions: The Failure of All Levels of Government to Plan for Emergency Evacuation of All New Orleans Residents

Accountability of state and local officials: City and state officials clearly recognized that a large number of people in New Orleans would be unable to leave the city in an evacuation, but the official state and city emergency plans made no meaningful provision for the steps the government would take to evacuate all these persons or provide suitable shelter. In the aftermath of the storm, it became abundantly clear that the state and city failed entirely in both of these efforts. People who could not leave on their own were not given any assistance in leaving, and they were sheltered in circumstances that were inhumane. What accounts for these failures?

- Was the failure of the city and state to have adequate emergency plans a function of the:
 - failure of local and state officials to make the creation of effective plans a high priority?
 - difficulty of creating effective plans due to funding constraints and lack of sufficient experienced personnel?
 - fact that most of those left behind were poor and lacked effective political power to ensure that their neighborhoods received adequate attention and protection?
- Did state and local officials fail to seek appropriate levels of funding to finalize and establish such plans from:
 - local and state sources?
 - the federal government?
- To what extent was the failure of the state and the city to evacuate or successfully shelter the vulnerable population after the storm hit a function of the:
 - failure to have planned adequately for these circumstances?
 - size of the problem having overwhelmed available state and city resources and capacity to respond?
 - failure of the federal government to provide quick and effective backup assistance?
 - failure to coordinate effectively federal, state, and local resources, and what factors, besides the lack of an effective communications system between these groups, accounted for this failure?

Accountability of federal officials: Some of the failures of government are now readily apparent, but this realization has come too late to protect the many residents of New Orleans who were left behind in the evacuation. The inability of many residents of New Orleans to evacuate was well known long before Katrina, as was the potential loss of lives and property that a hurricane like Katrina could cause. Moreover, flaws in the federal, state, and local planning efforts were obvious to anyone who took a close look at these efforts. In our democracy, we depend on our elected leaders to oversee and monitor efforts to protect people. Why did our leaders fail us?

- Legislators have the power to hold hearings and investigate the efforts of the executive branch to implement law and public policy. Did Congress and the Louisiana legislature engage in oversight of efforts to plan for a disaster like Katrina? Why was any such oversight ineffective in holding the White House or the Governor's office accountable for the failure to protect against known risks and contingencies?
- What efforts, if any, were made by the White House and the Louisiana's governor's office to ensure that planning for a disaster like Katrina was adequate to protect vulnerable citizens? In particular:
 - why was White House oversight ineffective in holding DHS accountable for the failure to protect against known risks and contingencies?
 - why was oversight by the Governor's office ineffective in holding state and city planners accountable for the failure to protect against known risks and contingencies?
- Assisted evacuation *before* the storm was clearly the only viable option to ensure the safety of those without the means to get out on their own. Why, once the failure to plan for evacuation forced thousands to remain, did the federal government fail to rescue promptly those left in such deadly circumstances, even though federal officials had known, at least since the FEMA-IEM simulation in 2004, that such a rescue mission would be necessary?

A complex rescue and recovery effort such as that required after a natural disaster or a terrorist attack can fail for several different reasons. The plan itself can be flawed, with planning elements actually incapable of accomplishing what was intended, even if executed flawlessly. Planning must necessarily include some flexibility to cope with the unexpected. Just as military officers say that no battle plan survives the first encounter with the enemy, no rescue plan survives the first encounter with an actual disaster. It must have built in mechanisms for responding flexibly to the facts on the ground as they diverge from the planning scenarios. The essential preparatory steps of training personnel, prepositioning supplies, and ensuring that adequate resources are available to execute the plan can fail. Finally, execution of the plan can fail because of incompetence, inattentiveness, or neglect of duty by people charged with carrying it out.

The scattered bits of evidence that have emerged to date suggest the New Orleans rescue and recovery effort ran into difficulties at each stage. The remainder of this section describes what we are beginning to learn about the performance of two of the key federal components of the relief effort, FEMA and the National Guard, and then identifies critical questions for further investigation.

FEMA: Skewed Priorities, Cronyism, and Defunding

Skewed Priorities

Since its creation by President Jimmy Carter in 1979 and until this administration, FEMA had been an independent federal agency, eventually enjoying cabinet level status, and focused on providing relief and emergency response services after natural disasters. When DHS was created in the wake of the tragedies of September 11, 2001, FEMA lost its independent status and became one of the 22 agencies that comprise the department.

The shift to Homeland Security has affected FEMA's priorities. While President Bush doubled FEMA's budget in 2002, over half of that allocation was earmarked for responding to terrorist attacks. While speaking of the department as being dedicated to "all-hazards

preparedness," DHS in reality emphasized terrorism at the expense of other threats. By 2005, nearly three of every four grant dollars from DHS to first responders are going to programs exclusively focused on terrorism.¹⁸¹ The GAO called the merger of FEMA and DHS a "high-risk" endeavor for FEMA,¹⁸² and Claire Rubin, a Senior Researcher at George Washington University, warned that after the reorganization, "a large number of people who are experienced with natural hazards no longer are doing that primarily or at all."¹⁸³ Perhaps the most glaring example of the new priorities came in May 2003 when DHS staged a series of exercises on counter-terrorism and weapons of mass destruction. The same week of the exercise, hundreds of real-life tornadoes ripped through the Midwest. FEMA personnel who otherwise would have attended to the tornadoes stayed behind to participate in the counter-terrorism drills.¹⁸⁴

The shift to Homeland Security has affected FEMA's priorities. While speaking of the department as being dedicated to 'all-hazards preparedness,' Homeland Security in reality emphasized terrorism at the expense of other threats.

Defunding

Equally troubling is the Bush Administration's inattentiveness to disaster mitigation. FEMA estimates that every dollar spent on mitigating the costs of future disasters saves two dollars in disaster recovery.¹⁸⁵ Yet President Bush has substantially reduced the amount FEMA may spend on such measures. In his first year in office, President Bush eliminated the \$25 million a year "Project Impact," which provided mitigation services ranging from home buyouts to early weather warning systems. Shortly thereafter, the President slashed FEMA's "hazard mitigation" grants that were supplied to communities impacted by disasters. Under Clinton era policies, at least 15 percent of money spent on damage recovery was required to be spent on mitigating the damages from future disasters. President Bush cut that mandatory percentage to 7.5 percent. In lieu of these grants, Bush has authorized competitive, pre-disaster, mitigation grants that are awarded based on a cost/benefit analysis, but as one disaster expert warns, such competition denies mitigation grants to poorer communities. In Senate testimony, Dale Shipley, Executive Director of The Ohio Emergency Management Agency, explained that "[i]n a purely competitive grant program, lower income communities, often those most at risk to natural disaster, will not effectively compete with more prosperous cities."¹⁸⁶

Privatization

President Bush also introduced privatization and decentralization to FEMA. In April 2001, Bush's Budget Director remarked that "the business of government is not to provide services but to make sure that they are provided,"¹⁸⁷ and this philosophy was brought to emergency management. In Senate testimony, then-FEMA Director Joe Allbaugh emphasized "Accountability" and "Responsibility" as the two most important objectives of his directorship. He lamented that "Federal disaster assistance may have evolved into both an oversized entitlement program and a disincentive to effective State and local risk management," and promised to "restore the predominant role of State and local response to most disasters."¹⁸⁸ At the same time, Allbaugh suggested that certain disaster management responsibilities, such as providing food and shelter to the displaced, should be delegated to faith-based charities.¹⁸⁹

Because of this move towards privatization, FEMA employees are as concerned with keeping their jobs as they are with responding to disasters. "We have to compete for our jobs – we have to prove that we can do it cheaper than a contractor," said one FEMA program administrator,¹⁹⁰ and a disaster expert at Georgia State University warns that by shifting responsibility away from the federal government, FEMA will gradually reduce the nation's preparedness. "Pretty soon governments can't do things because they've given up those capabilities to the private sector. And private corporations don't necessarily maintain those capabilities."¹⁹¹

These changes have undoubtedly affected FEMA's preparedness and ability to respond. In March 2004, former FEMA Head James Lee Witt testified before Congress that "the ability of our nation to prepare and respond to disasters has been sharply eroded I hear from emergency managers, local and state leaders, and first-responders nearly every day that the FEMA they knew and worked well with has now disappeared."¹⁹² An unnamed current senior FEMA official has been quoted as saying, "It's such an irony, I hate to say it, but we have less capability today than we did on September 11. We are so much less than what we were in 2000 We've lost a lot of what we were able to do then."¹⁹³

Cronyism

President Bush's first FEMA director was Joe Allbaugh, the National Campaign Manager for Bush/Cheney 2000. When Allbaugh stepped down in 2003, he was replaced by Michael Brown, who was the Under Secretary in charge of FEMA at the time Katrina hit and for two weeks thereafter.¹⁹⁴ Brown's sole qualification for the job appears to be an old college friendship with Allbaugh.¹⁹⁵ Prior to working at FEMA, Brown was a commissioner with the International Arabian Horse Association (IAHA), a position he was "asked to resign" from after his performance triggered a series of expensive lawsuits.¹⁹⁶ Before his job at IAHA, Brown was an estates and family lawyer.¹⁹⁷ Nor is Brown's lack of qualifications unusual in FEMA's current leadership. Neither of Brown's two top deputies had any professional experience in emergency management; both held high-level positions on President Bush's campaigns for the White House.¹⁹⁸ By September 9, Director Brown was no longer in charge of FEMA's efforts in the Gulf. He was returned to Washington by Secretary Chertoff to resume running the entire agency. On September 12, Brown resigned his position, and R. David Paulison was appointed by President Bush as Interim Under Secretary in charge of FEMA.

FEMA's recent history – deemphasizing natural disaster relief, ignoring vital information, and unqualified leadership – illustrates a pattern of policies and decisions that make us less secure rather than more, draining government of its capacity to perform vital functions by undermining and underfunding critical precautionary programs.

The National Guard: Depleted by the Iraq War and Misused

The Impact of the Iraq War

Four of every ten U.S. military personnel in Iraq have been Guardsmen or Reserves, in "the largest long-term deployment of the nation's reserves in 50 years. And their casualties reflect that."¹⁹⁹ The economic hardship of long-term deployment also is likely to have hurt Guard retention.²⁰⁰ Similarly, morale in the Guard is threatened.²⁰¹ The Guard presence in Iraq has taken its toll in terms of the equipment and personnel available to respond to domestic emergencies as well.²⁰² Sen. Richard Durbin of Illinois noted that just with respect

to his state's Guard, "Seventy percent of the Illinois Guard either served in Iraq or is serving there, and they leave the major equipment over there for a year; and by that time it's depleted. So our units don't have the supplies and equipment they usually have on hand for a situation like this."²⁰³

The Guard units that would be most immediately responsible for responding in the wake of Katrina were the Louisiana National Guard. In a story published August 1, 2005, the Los Angeles Times reported that much of the Louisiana National Guard's most valuable equipment was in Iraq, and would take months to return even if released by those using it in Iraq.²⁰⁴ This included "[d]ozens of high water vehicles, humvees, refuelers, and generators."²⁰⁵ Lt. Col. Pete Schneider of the Louisiana National Guard said the "National Guard needs that equipment back home to support the homeland security mission." Schneider did say, however, that in the event of a major hurricane, Louisiana could call on Mississippi, Alabama, and Florida for help.²⁰⁶

After Katrina hit, "it quickly became apparent that neither [Louisiana nor Mississippi] had sufficient troops or specialized capabilities – from engineering and communications to helicopter squadrons and truck companies – to cope with the human toll the hurricane left in its wake."²⁰⁷ When Louisiana called on that needed outside aid, the states Schneider mentioned were already responding to their own disasters and were in any event as depleted as was Louisiana. Sens. Kit Bond and Patrick Leahy have estimated that only 34 percent of the Guard's normal allotment of equipment is currently available for use in the United States, with heaviest shortages in trucks, engineering equipment, and communications gear. "We're underequipped," said Lt. Gen. Steven Blum, head of the National Guard Bureau, "we don't need tanks and attack helicopters and artillery, but we must have state-of-the-art radios and communications."²⁰⁸ "In Louisiana and Mississippi, the states hit hardest by the hurricane, up to 40 percent of their National Guard troops are on active duty in Iraq. As a result, Guard commanders responding to the storm's havoc have been forced to look further afield for military police and other National Guard units and equipment from states as far away as Maryland, stealing precious time from the relief efforts."²⁰⁹

Misused and Stretched Thin

In the best of circumstances, the challenges faced by the National Guard in the wake of Hurricane Katrina would have been substantial. But the circumstances in the wake of Hurricane Katrina were not the best. Policies pursued under the Bush Administration have depleted National Guard resources rendering them unavailable to perform essential functions here at home. In addition to the unavailable brigades and equipment, and the toll of wartime duty, the hidden cost of slower deployment to disaster scenes exacerbated the shortfall.

The National Guard is not a rapid deployment organization. Personnel must be called up from their civilian jobs. They must proceed individually to their unit headquarters for equipment and orders, and must then proceed to staging areas where equipment must be assembled and units organized. It does not appear that the Louisiana Guard was sufficiently mobilized in the days prior to Katrina, so that its ability to respond quickly afterwards was impaired by several days. In addition, while the Guard nationwide appears to have sufficient staffing to discharge its domestic responsibilities, the thin base of personnel in the immediate region as well as the lack of equipment meant that units and equipment would have to be called up to come from far greater distances. Little or no consideration of the time requirements to draw from greater distances appears to have been taken into account in the pre-Katrina decision making.

Prior to the hurricane, Lt. Col. Pete Schneider of the Louisiana National Guard spoke confidently of the Guard's readiness and ability to move after the storm had hit.²¹⁰ Once the hurricane had hit, Guard spokespeople continued to talk confidently of the adequacy of the response.²¹¹ Little of this was borne out by events, however, and as the situation deteriorated on several different fronts, the nature of the information coming from the Guard began to change. Although officials typically denied that the deployment of troops to Iraq was interfering with the Guard's ability to respond quickly,²¹² on occasion a Guard officer would disagree.²¹³ Lt. General Blum acknowledged that his force had been stretched thin: "Well, in addition to the 75,000 soldiers that I have overseas in Iraq, in Afghanistan, in Kosovo, and Bosnia, and the Horn of Africa, we have five states that are fighting forest fires in the Northwest, and now we have four states that are dramatically affected by a

Critical Questions

Institutional Weaknesses and Failures in Implementation

Who Does What? In a system of shared governance, all levels of government have a responsibility to serve and protect our citizens. But what role should each play and what does Katrina teach us about the answer to that question?

- Federal planners apparently assumed that state and city first responders would be able to cope with the immediate aftermath of an emergency the size and extent of Katrina. Since it is not realistic to assume these levels of government could provide an effective first response in a situation where an event – whether it is Katrina or a major terrorist attack – will wipe out much of the infrastructure on which first responders depend, why and how did federal planners make this mistake?
- More broadly, what theory of federalism should be used in this area? Storms the size of Katrina, and events like the tragedy of September 11, 2001, are not local events, because they impact the entire country, causing economic and other cascading problems for all Americans. Moreover, all Americans, and rightly so, share the cost of the emergency and the expensive efforts to comfort those affected and help them rebuild their lives and their businesses.
 - In light of these impacts, is it advisable to continue to rely on states and cities to be primarily responsible for emergency planning and response, with FEMA playing only a backup role?
 - If so, shouldn't the federal government, which represents and serves all of the country, be responsible for monitoring and ensuring the competence and adequacy of state and local planning and emergency efforts?

FEMA: Throughout the disaster, FEMA seemed unable to react flexibly, even to the point of preventing volunteer rescue personnel from moving forward in the early days after the hurricane,²¹⁹ and being unaware of existing resources like the hospital ship Bataan that could have provided more timely relief. In the first days after the disaster, adequate supplies, personnel, and resources clearly were not available to move into the area in a timely fashion. There are also disturbing reports of lack of situational awareness well into the disaster at the highest levels of FEMA.

- To what extent were the problems at FEMA attributable to:
 - a lack of experience of the FEMA leadership in emergency planning and implementation?
 - the emphasis in DHS on:
 - ◆ responding to the consequences of potential threats posed by terrorists?
 - ◆ relying on outsourcing and privatization which diverted FEMA employees from emergency planning and implementation and was itself ineffective in providing emergency planning and implementation?
 - decreases in funding for FEMA and for hurricane disaster planning?
 - the loss of experienced FEMA personnel who left the government? Why have so many senior, experienced personnel left FEMA?
 - the management and accountability structure in DHS? Would these problems be solved by make FEMA an independent agency once again?
 - the priority setting process at FEMA and DHS? Having recognized that the flooding of New Orleans was one of the top three worst potential catastrophes facing the United States, why did FEMA fail to act more quickly to follow-up on its “Southwest Louisiana Catastrophic Hurricane Plan”?
- To what extent is FEMA's failure to protect against known risks and contingencies a function of the failure of DHS to effectively integrate FEMA, and to what extent is this failure attributable to the lack of effective White House and congressional oversight?

Critical Questions, Continued Institutional Weaknesses and Failures in Implementation

National Guard: The country has traditionally relied on the National Guard to back up first responders by providing police and logistic support. A significant portion of the nation's National Guard Force, however, is on active duty in Iraq, including up to 40 percent of the Louisiana National Guard, and guard units at home are short of equipment because it has been diverted to Iraq. Available National Guard units in Louisiana were slow to arrive because they had not been mobilized in advance, although the potential for the catastrophe that occurred was widely recognized before the storm hit. Guard units that initially arrived were ineffective at protecting the people left behind or providing them with badly needed food and water. What accounts for the failure of the National Guard to provide an effective and rapid back-up to the first responders in New Orleans?

- To what extent was the failure of the National Guard to act effectively in the initial aftermath of the storm a function of:
 - the failure to mobilize
 - ◆ the Louisiana National Guard prior to when the Hurricane struck, and why did this not happen?
 - ◆ National Guard troops from other states to back up the Louisiana National Guard, and what factors explain the delays in getting these additional guard units to New Orleans?
 - the failure of the Louisiana National Guard to anticipate the negative impact of reduced troop strength and lack of equipment on the Guard's capacity to respond to emergencies? Were these concerns brought to the attention of the Governor of Louisiana or other state and federal officials?
 - the lack of adequate training of Guard units concerning how to approach and address civilians in the city?
 - the failure of the National Guard to coordinate its activities with local and state officials, first responders, and FEMA, and what factors were responsible for the lack of coordination?

local hurricane or this latest hurricane.”²¹⁴ When asked a few days later why New Orleans had been allowed to become lawless, Blum explained that the Guard had expected the local police to handle that.²¹⁵ He emphasized that the National Guard's role was still to help the local police – not to take charge.²¹⁶ He also cited limitations of the Emergency Mutual Assistance Compact to explain why it had been difficult to get out-of-state military police into the area.²¹⁷

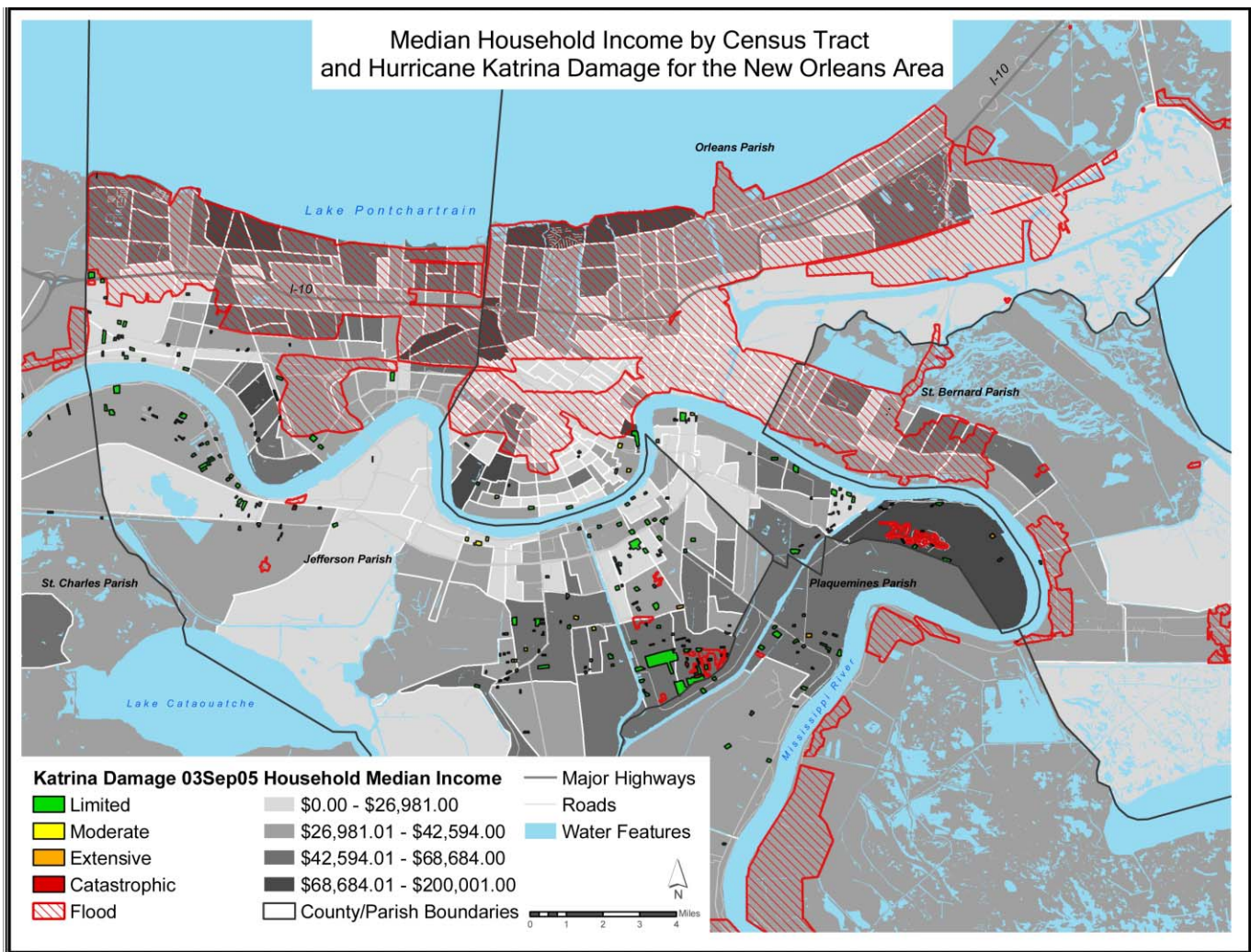
What is more, of the National Guard's 45 brigades, only a handful are considered “enhanced,” and those include two from Louisiana and Mississippi in Iraq, said Lawrence Korb, who handled personnel and Guard issues as Assistant Secretary of Defense under President Ronald Reagan. “They had their crack troops there in Iraq. They have the best equipment, the best training,” Korb said. “It may be only 30 percent that's over in Iraq, but it's the best 30 percent.”²¹⁸

The Two Americas: Race, Class, and Injustice

Earlier sections have described how public health, safety, and environmental policies, on the one hand, and emergency response planning and implementation on the other, fell short and contributed to the devastating effects of Hurricane Katrina. This section highlights how race, class, and injustice were key dimensions of these failed policies. The devastating effects – the lost lives, the demolished homes, the shattered communities, the affronts to dignity – were suffered disproportionately by people of color and low-income people in New Orleans. “Natural disasters” such as hurricanes, earthquakes, and floods are sometimes viewed as “great social equalizers:” they strike unpredictably and at random, affecting black and white, rich and poor, sick and well alike. However, as Katrina has laid bare, the harms are not visited randomly or equally in our society. A reporter for *The New York Times* put it bluntly: “The white people got out. Most of them, anyway. . . . it was mostly black people who were left behind.”²²⁰

Who Was Most Vulnerable

It is society's most vulnerable who were “left behind” by government efforts to assess, to plan for, and to respond to a storm of Katrina's magnitude. And this was predictably so. A host of government decisions were



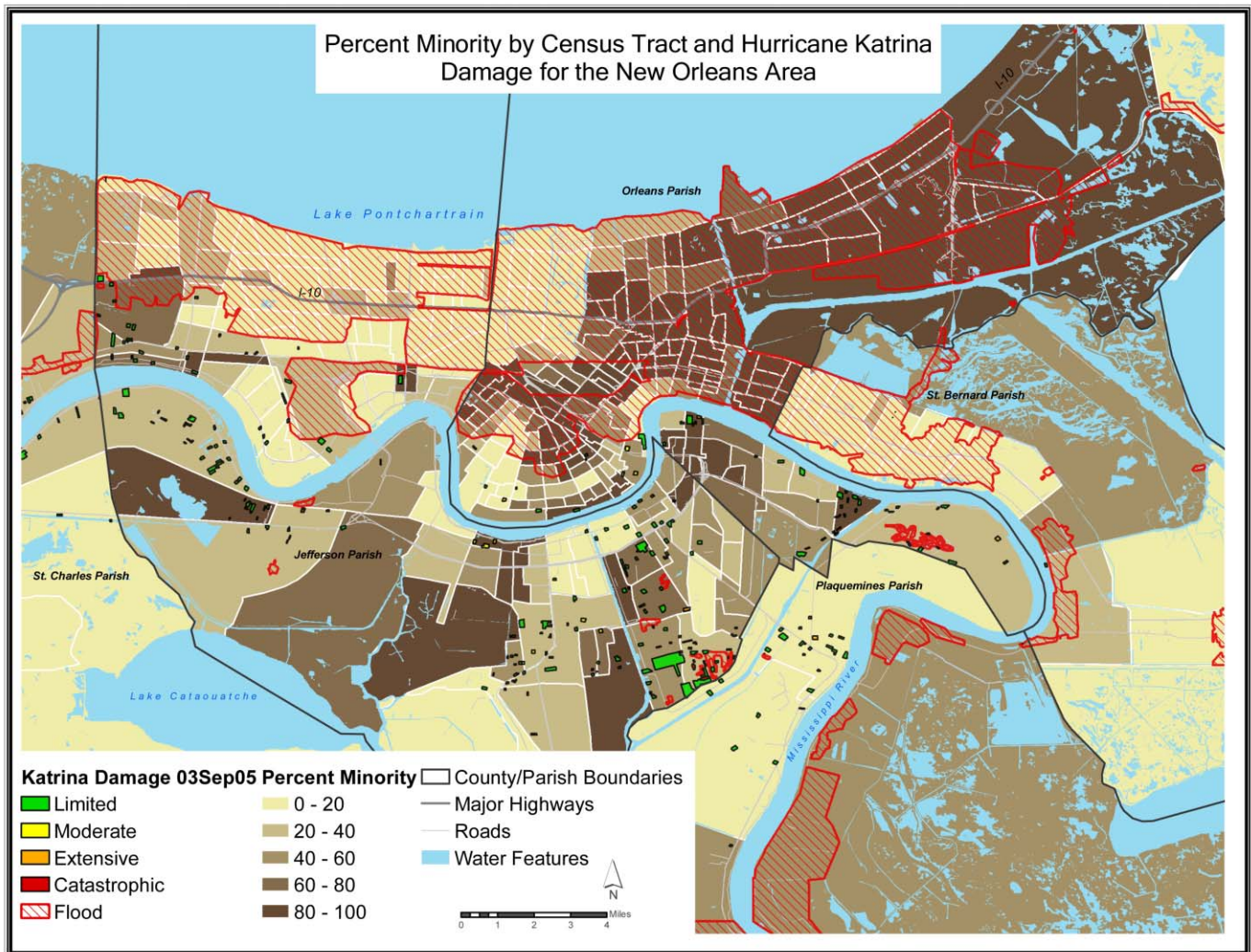
made – each of which had the potential to mitigate or exacerbate the effects of a hurricane for the people of New Orleans – against a social, economic, and political backdrop that made the disproportionate impacts of certain government choices virtually inevitable. Where the choice was to forego the basic services and protections typically provided by a government, it should have been clear to decision makers precisely *who* would be left to fend for themselves.

Twenty-eight percent of people in New Orleans live in poverty.²²¹ Of these, 84 percent are African-American.²²² Twenty-three percent of people five years and older living in New Orleans are disabled.²²³ An estimated 15,000 to 17,000 men, women, and children in the New Orleans area are homeless.²²⁴ The lowest lying areas of New Orleans tend to be populated by those without economic or political resources.²²⁵ The city's Lower Ninth Ward, for example, which was especially hard hit and completely inundated by water, is among its poorest and lowest lying

areas.²²⁶ Ninety-eight percent of its residents are African-American.²²⁷ As Craig E. Colten, a geologist at Louisiana State University and an expert on New Orleans' vulnerable topography explains: “[I]n New Orleans, water flows away from money. Those with resources who control where the drainage goes have always chosen to live on the high ground. So the people in the low areas were the hardest hit.”²²⁸

Of the households living in poverty, many have no access to a car: 21,787 of these households without a car are black; 2,606 are white.²²⁹ This lack of access became crucial, given an evacuation plan premised on the ability of people to get in their cars and drive out of New Orleans.²³⁰

In fact, it is not only the case that government decision makers should have known just who would be left to suffer the harms of protections foregone, but that they did know.²³¹ Community groups and environmental justice scholars, notably Robert Bullard, founder and



director of the Environmental Justice Resource Center and Ware Professor of Sociology at Clark Atlanta University, have also made clear precisely who would be most at risk.²³² Furthermore, many commentators have noted that the disproportionate impacts experienced by the poor and black communities from Katrina is part of a pattern of environmental disasters in which low-income communities and communities of color are overlooked in the preparations before such disasters occur and receive less rapid assistance afterwards.²³³ Previous examples include Hurricane Hugo in 1989 and the Graniteville, South Carolina train crash and release of deadly chlorine gas in 2005.²³⁴

***Race, Class, and Justice: 'Another Case of Government for Some'*²³⁵**

Moreover, the fact that the deaths, losses, and indignities of Katrina disproportionately affected people of color and the poor is not at all extraordinary. Hurricane Katrina may be a catastrophic, “once in a lifetime” event. But the same disregard by government health, safety, and environmental agencies for the lives and circumstances of the most vulnerable marks the everyday experience of these people. Indeed, environmental justice advocates have for some time labored to point out that people of color and the poor disproportionately comprise the communities that are overburdened by pollution, underserved by public projects and amenities, and underprotected by government decision makers.²³⁶

The maldistribution of environmental harms and benefits observed throughout the United States is especially acute

in the Deep South. Robert Bullard, in *Dumping in Dixie: Race, Class, and Environmental Quality*, explains:

The Deep South is stuck with [a] unique legacy – the legacy of slavery, Jim Crow, and white resistance to equal justice for all. This legacy has also affected the region’s ecology. Southerners, black and white, have less education, lower incomes, higher infant mortality rates, and lower life expectancy than Americans elsewhere. . . . Lax enforcement of environmental regulations has left the region’s air, water, and land the most industry-befouled in the United States.²³⁷

Robert Bullard further observes that blacks remain underrepresented in the relevant decision making bodies, including government regulatory agencies. He thus echoes an important claim raised by environmental justice advocates in the South and elsewhere: those affected have often been denied the opportunity meaningfully to participate in decisions affecting their health, safety and environment.²³⁸

For long-time residents and advocates, then, Katrina highlighted issues that are all too familiar. Damu Smith, Executive Director of the National Black Environmental Justice Network notes that, even before Katrina, impoverished African-Americans were the ones most exposed to environmental harms.²³⁹ In a similar vein, Beverly Wright, director of the Deep South Environmental Justice Center at Xavier University of New Orleans, observed that the government’s lack of a plan for responding to Katrina echoes the government’s lack of a plan for responding to the “upsets,” explosions, and other emergencies that have for years threatened the communities that live at the fence line of Louisiana’s polluting facilities – predominantly communities of color and low-income communities.²⁴⁰

Within the city of New Orleans, the picture is similar, but includes issues peculiar to urban areas. Robert Bullard sheds light on the racial dimensions of the urban environment in the South:

Race continues to be a potent variable in explaining the spatial layout of urban areas, including housing patterns, street and highway configurations, commercial development, and industrial facility siting. . . . The differential residential amenities and land uses assigned to

black and white residential areas cannot be explained by class alone. For example, poor whites and poor blacks do not have the same opportunities to “vote with their feet.” Racial barriers to education, employment, and housing reduce mobility options available to the black underclass and the black middle class.²⁴¹

In New Orleans race is in fact an important variable in understanding the spatial layout in terms of proximity to polluting facilities, access to public amenities, and, as noted above, protection (whether natural or built) from floods. The Agricultural Street Landfill, described above²⁴² is located in a neighborhood that is 94 percent African-American.²⁴³ As Monique Harden, Co-Director of Advocates for Environmental Human Rights, based in New Orleans, summarizes: “What Katrina has exposed is decades of benign neglect and racism.”²⁴⁴ Katrina has brought to the fore other aspects of injustice as well.

Shifting Responsibility, Shifting Blame

Moves to eviscerate government protection of health, safety, and the environment are most tenable where those burdened can be viewed as “other” or where their circumstances are not lived or imagined by many Americans.²⁴⁵ The current Bush Administration in particular has endorsed a shift in responsibility for basic health, safety, and environmental protections. It has sought to diminish the government’s role in assuring even minimally healthful conditions for all, leaving it to those at risk to protect themselves. The effect of this shift is to burden people of color and the poor – because these groups are disproportionately the ones who are most exposed and most vulnerable, they will be the ones left to fend for themselves.²⁴⁶ They are also the ones with the fewest resources to do so.

Such “risk avoidance” approaches are sometimes defended by the claim that they will provide the same amount of protection for human life as the alternatives, but at a lower cost. In the case of New Orleans, rather than reduce the risks to the public by, for example, regulating activities that destroyed wetlands and other natural storm protections or funding adequate flood control measures, the government opted to rely on evacuation warnings leaving people to avoid the risks themselves. However, the “same amount” of protection *could not* by this means be provided, given the inability of

so many of New Orleans' residents to evacuate on their own. As noted above, many of those living in poverty have no car, particularly African-Americans. Many of the poorest depend on public assistance checks typically mailed on the first of the month, so have very little money at the end of the month to cover the expenses of gas, a hotel, or food on the road.²⁴⁷ To these people, a government order to evacuate is hardly a guarantor of safety. Robert Bullard observes: "evacuation, if you don't have a car, a credit card or a place to go, sounds like trading the deep sea you know for the devil you don't."²⁴⁸

Government officials tend not to acknowledge publicly the fact that it was impossible for many people to evacuate. Indeed, Michael Brown, the director of FEMA demonstrated his profound ignorance of, or utter disdain for, the circumstances of those unable to leave as he chastised them for "choosing not to heed" the evacuation order.²⁴⁹ This "blame the victim" strategy is one hallmark of the anti-regulatory agenda of the current administration that is troubling in general and particularly from the perspective of environmental justice.

In a similar vein, on the heels of the government's failure to anticipate the need for and provide the most basic of supplies to the thousands stranded in the Superdome, some government officials and others cast aspersions on those made desperate by the conditions. In so doing, they dehumanized these people, thereby legitimizing the failure to provide for a minimally human existence.

Assessing Risks: Exposure and Vulnerability

Government assessment of the health, safety, and environmental risks appears to have relied on assumptions about people's resources for survival and recovery that simply do not match the reality of New Orleans' poor. Many of these people lack access to health care, have no homeowner's or renter's insurance, and are without savings or other means to survive the loss of even one paycheck. And, Monique Hardin notes, Louisiana has an especially poor history of providing a social and environmental safety net for its citizens.²⁵⁰

As environmental justice advocates have pointed out in other contexts, because of people's differing access to resources, an environmental insult of the same intensity may have widely differing effects as between those who are poor and black, and those who are affluent and white.²⁵¹ As a consequence, the National Environmental Justice Advisory Council has observed that agencies will get it wrong unless they assess and manage risk in light of a more complete understanding of people's vulnerability to environmental harms.

Justice in Cleanup and Rebuilding

Katrina also raises questions of justice in cleanup and rebuilding. The EPA has begun testing the floodwaters in New Orleans, and has found them to have elevated levels of toxic pollutants such as lead and bacteria such as *e. coli* and coliform. Over 500 sewage plants in

Louisiana have been damaged or destroyed.²⁵² Community members and environmental justice leaders have raised concerns about when and how these contaminants will be cleaned up, citing evidence of inequities in environmental cleanups more generally.²⁵³ They and others have also questioned the rush to waive standard health,

safety, environmental, and social protections. While it might have been important to waive normal Clean Water Act permits to allow the waters to be pumped out of a flooded city as quickly as possible, other waivers that are being considered are more questionable.²⁵⁴

Community members and leaders are also concerned about efforts to rebuild New Orleans. How will these efforts address homelessness and displacement? How will they address the loss of community and social networks that among other things function as important resources for the city's poor? New Orleans is – or was – 67 percent African-American.²⁵⁵ Will Katrina be a vehicle for permanently displacing black residents from the city, for intensified gentrification, as is occurring more generally? Will people of color and the poor be involved in important rebuilding decisions? Will they be the ones to get the jobs created by the massive New Deal-style public works programs that could potentially be

Government officials tend not to acknowledge publicly the fact that it was impossible for many people to evacuate. This 'blame the victim' strategy is one hallmark of the anti-regulatory agenda of the current administration that is troubling in general and particularly from the perspective of environmental justice.

Critical Questions

The Two Americas: Race, Class and Injustice

Environmental justice advocates have long worked to bring attention to many of the very issues of race, class, and injustice that were exposed by Hurricane Katrina. Perhaps the most critical question posed by the aftermath of the hurricane is whether we will confront head-on the issues of racial and class inequities. It is people of color and the poor who disproportionately comprise the communities that are overburdened by pollution, underserved by public projects and amenities, and underprotected by government decision makers. And it is people of color and the poor who are largely absent from the relevant decision making processes, having been excluded or ignored despite the fact they are often the ones most affected.

A complete analysis of race, class, and injustice in this context cannot be undertaken in the absence of the voices and perspectives of those affected. CPR cannot and does not purport to speak for these people, and urges decision makers in all quarters to listen as those affected speak for themselves. Questions that warrant further investigation include the following.

- Did the institutional mechanisms for emergency preparedness and response planning systematically generate a response that was certain to have racial and class disparities?
 - If so, what measures must be taken to ensure that everyone is accorded equal protection from emergencies – regardless of race or income level?
 - Was there a racial disparity in the manner and order in which people were evacuated and protected during the critical days after Katrina hit? Anecdotal accounts of such disparities should be investigated.
- Government officials were aware before the storm that evacuation plans failed to provide means to allow evacuation by many residents who were poor and that these plans would leave people of color disproportionately unable to evacuate.
 - Why did these predictions go unaddressed?
 - Is this part of a larger pattern? For example, is there a similar lack of planning for the evacuation of such communities in the shadow of refineries, chemical plants and other industrial facilities in the wake of a facility accident?
- What steps must be taken to ensure that race or class disparities don't affect the cleanup methods selected and used in different areas?
 - What steps are being taken to ensure that the affected communities have adequate opportunities to participate in the relevant decision making processes?
- Widespread public concern has been expressed for assisting the poorest among those adversely affected by the hurricane.
 - To what extent is special attention being given to assisting the poorest of the displaced persons in hiring and other aspects of the reconstruction process?
 - To what extent might other vulnerable groups be disparately impacted in the critical months that follow such a massive dislocation, including farm workers, the disabled, and the elderly?
- Concerns have been expressed about the potential racial and class disparities that could arise from rebuilding efforts.
 - What means exist to enable systematic oversight on these issues?
 - What steps are being taken to ensure that the poor and people of color have adequate opportunities to participate in the decision making processes associated with rebuilding?

developed to address cleanup and rebuilding?²⁵⁶ Beverly Wright highlights some of these concerns:

Who will be involved in the rebuilding, and the redesigning of New Orleans? Just before the hurricane, African-Americans, middle class African-Americans, our grassroots people were basically fighting for their life. We were fighting gentrification at a rate we have never seen before. We were fighting the takeover of our public schools.²⁵⁷

These concerns do not appear to be misplaced. According to *The Wall Street Journal*, the city's old-line families, many of whom live in the Uptown district, where their homes remain largely intact and unscathed by Katrina, indeed have a particular vision of New Orleans' future—and they have already met with the mayor to begin “mapping out a future for the city”.²⁵⁸

The power elite of New Orleans . . . insist the remade city won't simply restore the old order. New Orleans before the flood was burdened by a teeming underclass, substandard schools and a high crime rate. The city has few corporate headquarters.

The new city must be something very different, [James] Reiss says, with better services and fewer poor people. “Those who want to see this city rebuilt want to see it done in a completely different way: demographically, geographically and politically,” he says.²⁵⁹

It is already clear that the plans for the city's future will be contested.²⁶⁰ If decisions about that future are to be just, they cannot be made – as so many decisions have been in the past – through processes that exclude New Orleans' people of color and poor.

Moving Forward

Katrina was both a natural and an unnatural disaster. Hurricanes are natural phenomena that will inflict harm and cause damage. The planning and implementation of mitigation efforts to reduce the incidence of such harm and damage are human phenomena, as are the planning and execution of evacuation, rescue and recovery efforts to move people to safety and minimize the loss of life and property. Likewise, the development

and implementation of environmental and energy policies that do not worsen the impact of inevitable natural disasters are human choices. These human elements are fundamental obligations of the federal, state and local governments. The preliminary analysis provided in this report suggests that long before August 29, 2005, these elements had been ill-considered, improperly planned, diverted to other purposes, misdirected through short-sighted decisions, neglected in favor of other less vital priorities, under-funded, under-equipped, and understaffed. As a result, long before Katrina caused the levees to fail, government appears to have failed. This report highlights some of these apparent failures and urges careful investigation and a renewed commitment to an investment in the common good.

As this report has stressed throughout, it is too early to reach definitive conclusions about the lessons we can learn in the wake of this tragedy. However, certain preliminary assessments are warranted, and it is not too early to consider the vision that ought to guide our response to these events.

The Conservative Vision

For many conservatives, Katrina seems to present an opportunity to implement an agenda that includes deregulation and limiting tort remedies.²⁶¹ The Senate Environment and Public Works Committee, for example, is considering legislation that would suspend any law governing air, water or land in any state that is responding to the hurricane, thereby authorizing EPA to grant waivers in states located far from the storm on the pretense that hurricane relief efforts make this necessary.²⁶² Conservatives also want to pass legislation to expand oil and gas drilling on public lands, including the Alaska National Wildlife Refuge, remove offshore drilling bans, shift the primary responsibility for permitting new oil refineries from EPA to DOE, and otherwise providing a series of exemptions for refineries from the Clean Air Act.²⁶³ In addition, oil refineries have revised their efforts to obtain liability protection for producing the fuel additive MTBE that was dropped from the energy bill Congress passed because of the opposition of cities with contaminated water supplies.²⁶⁴ Conservatives have also redoubled their efforts to amend and weaken NEPA because, they claim, environmental litigation under NEPA is responsible for the failure of the Corps to finish engineering projects that would have

better protected New Orleans from flooding, although, as shown earlier, these claims are entirely specious.²⁶⁵

Other items on the conservative agenda extend beyond the issues discussed in this report, although they fit the same pattern. Conservatives are using Katrina, for example, to adopt measures that advance their economic agenda, such as school vouchers and repeal of labor laws.²⁶⁶ The White House, for its part, was quick to suspend a law that requires employers to pay the locally prevailing wage to construction workers on federally financed projects, even though this adversely impacts workers who lived in the very areas that were destroyed.²⁶⁷

Conservatives have reacted to Katrina in one more way. They interpret the failure of the government to respond effectively to Katrina as proof of their belief that government is always inept because governmental bureaucracies are by their very nature ineffective. David Brooks, for example, observes there is a “paradox at the heart of the Katrina disaster, which is that we really need government in times like this, but government is extremely limited in what it can effectively do.”²⁶⁸ This argument, as Albert Hirschman has demonstrated, is a staple of the conservative movement. For two hundred years, Hirschman notes, conservatives have sought to head off progressive government by arguing such efforts are futile.²⁶⁹ If a program fails, conservatives are quick to assume that this is proof that government cannot work. As Hirschman notes, “There is a rush to judgment and no allowance is made for social learning or for incremental, corrective policy-making.”²⁷⁰

The Progressive Vision

From a progressive perspective, the lesson that Katrina teaches is that we must redouble efforts for better government. The kind of planning and execution demanded by a disaster like Katrina simply cannot be carried out without competent government that is adequately funded, has its eyes on the proper priorities and is genuinely concerned with the public good and the empowerment of all citizens. CPR’s *A New Progressive Agenda for Public Health and the Environment* documents how progressive government has made substantial strides in cleaning up the air and water, ensuring that the application of pesticides does not adversely affect human health or the environment, creating workplaces free from occupational illnesses and accidents, reducing hazardous

waste management practices, preventing the marketing of dangerous toxic chemicals, halting the use of environmentally destructive surface mining practices, accelerating the cleanup of hazardous substances that have been released into the environment, and reducing injuries and fatalities from automobile accidents and dangerous products.²⁷¹ While there is much still to be done in these areas and others, no one can seriously doubt that the country is better off than it was in the 1950s when the country had only a few government programs to address these dangers. What the conservative “futility” argument conveniently overlooks is the accomplishments of progressive government. When adequately funded and led, the bureaucracy much maligned by conservatives has an admirable track record in protecting the public.

A New Progressive Agenda for Public Health and the Environment sets out a series of fundamental principles that animate a vision of the positive and vital role of government. These principles can help guide decision making as we reexamine our policies and priorities in the aftermath of Hurricane Katrina.

Among these principles are:

Address the Source Not the Victim: Pollution control and cleanup laws and policies that place the burden of avoiding harm on citizens, rather than requiring control by the sources of pollution, are unfair and expose all of us to higher risk in the event of a catastrophe. We all benefit if government takes seriously its duty to protect the public from harm instead of shifting the burden to the individuals most affected, in the emergency planning and response context, as well as in health and environmental regulation.

Reduce Ignorance / Democracy Demands Disclosure: The many questions about the toxic soup of floodwater and sludge left by the hurricane highlights the vital importance of collection and disclosure of information about potentially hazardous substances produced, used, and stored by a wide array of industries.

Better Safe than Sorry: Before August 2005, the risk to New Orleans posed by a Category 4 or 5 storm could be expressed statistically, but whether it would happen, and if so when, could not be predicted with certainty. A precautionary approach to planning and preparation for such emergencies may be both necessary to satisfy the American public’s basic moral impulses and a sound

investment. Similarly, in evaluating our energy policy, we should employ a precautionary approach that accounts for the contribution of fossil fuels to climate change.

Be Fair: A commitment to improving the well-being of all Americans requires that there be a fair distribution of environmental and other burdens. The planning for and response to Hurricane Katrina, as well as the distribution of risks created by the legal status quo before the Hurricane, placed the most vulnerable of citizens at the highest risk. The widespread outrage over the failures of the evacuation and emergency response suggests that Americans are committed to a legal status quo that takes greater account of fundamental fairness.

Public Resources Belong to Everyone: American law and society have long recognized the public interest in natural resources such as wetlands. In addition to concern for the value of these resources for future generations, in the aftermath of Hurricane Katrina, we are reminded of the key role wetlands play in protecting people and property from storm impacts today. Ecosystem services and values like flood control are often overlooked in decisions regarding the fate of natural resources, even under laws that purport to protect the public interest. We must improve our policies to better assure that the public interest is fully assessed in relevant decisions.

Make Government Work: Perhaps no message is clearer in the wake of Hurricane Katrina. Government has a vital role to play in protecting life and property from natural and man-made disasters and in helping the recovery from such disasters. But government requires adequate funding and appropriately structured institutions to perform these critical roles. Those who

advocate further weakening of government would either leave us unprotected or turn important functions over to unaccountable private hands. Neither option can safeguard the public.

A critically important element of the response to Hurricane Katrina notably absent from the conservative agenda is an independent and impartial investigation of

The governmental failures revealed by Katrina are not the failures of a progressive government. While we do not yet understand exactly what went wrong, the evidence assembled here makes this much clear: some of the needless death and destruction in New Orleans is attributable to a rejection of progressive principles and to a hollowing out of the government that left it without the resources and experienced personnel needed to fulfill its vital role of protecting people and the environment.

how government failed to protect New Orleans and its most vulnerable citizens.²⁷² As this report demonstrates, many important questions have arisen concerning both the events leading up to Katrina and the government's reaction afterward. Since key questions involve failures on the part of the White House, an investigation controlled by Republicans is unlikely to be credible. The appointment of independent and national commission similar to the 9/11 Commission is important for another reason.

This "unnatural disaster" appears to have many complicated causes. An investigation that focuses only on emergency response planning and implementation will not tell us everything we need to know. As this report demonstrates, other important issues concern the implementation of wetlands and Superfund law and policy. A job of this scope is best handled by a group similar to the 9/11 Commission.

The governmental failures revealed by Katrina are not the failures of a progressive government. While we do not yet understand exactly what went wrong, the evidence assembled here makes this much clear: some of the needless death and destruction in New Orleans is attributable to a rejection of progressive principles and to a hollowing out of the government that left it without the resources and experienced personnel needed to fulfill its vital role of protecting people and the environment.

About the Authors

An Unnatural Disaster: The Aftermath of Hurricane Katrina is a collaborative effort of the following member scholars and staff of the Center for Progressive Reform.

David M. Driesen is a member scholar of the Center for Progressive Reform and is Associate Professor at the Syracuse University College of Law, Syracuse University Center for Global Law and Practice. He is also Adjunct Associate Professor at the College of Environmental Science and Forestry of the State University of New York. **Alyson Flournoy** is a member of the board of directors of the Center for Progressive Reform and is Professor and Director of the Environmental and Land Use Law Program at the University of Florida Levin College of Law. **Sheila Foster** is a member scholar of the Center for Progressive Reform and Professor at Fordham Law School. **Eileen Gauna** is a member scholar of the Center for Progressive Reform and Professor at Southwestern University School of Law. **Robert L. Glicksman** is a member scholar of the Center for Progressive Reform and the Robert W. Wagstaff Professor of Law at the University of Kansas School of Law. **Carmen G. Gonzalez** is a member scholar of the Center for Progressive Reform and Associate Professor of Law at Seattle University School of Law. **David J. Gottlieb** is a member scholar of the Center for Progressive Reform and Professor of Law at the University of Kansas School of Law. **Donald T. Hornstein** is a member scholar of the Center for Progressive Reform and the Aubrey L. Brooks Professor of Law at the University of North Carolina School of Law. **Douglas A. Kysar** is a member scholar of the Center for Progressive Reform and Assistant Professor of Law at Cornell Law School. **Thomas O. McGarity** is President of the Center for Progressive Reform and holds the W. James Kronzer Chair at the University of Texas Law School. **Catherine A. O'Neill** is a member scholar of the Center for Progressive Reform and Associate Professor of Law at Seattle University School of Law. **Clifford Rechtschaffen** is a member scholar of the Center for Progressive Reform and Professor and Co-director, Environmental Law & Justice Clinic at Golden Gate University School of Law. **Christopher Schroeder** is a member of the board of directors of the Center for Progressive Reform and the Charles S. Murphy Professor of Law & Public Policy Studies and Director of the Program in Public Law at Duke University School of Law. **Sidney Shapiro** is a member of the board of directors of the Center for Progressive Reform and the University Distinguished Chair in Law at Wake Forest University School of Law. **Rena Steinzor** is a member of the board of directors of the Center for Progressive Reform and the Jacob A. France Research Professor of Law and Director of the Environmental Law Clinic at the University of Maryland School of Law. **Joseph P. Tomain** is a member scholar of the Center for Progressive Reform and is Dean Emeritus and the Wilbert and Helen Ziegler Professor of Law at the University of Cincinnati College of Law. **Robert R.M. Verchick** is a member of the board of directors of the Center for Progressive Reform and the Wendell H. Gauthier ~ Michael X. St. Martin Eminent Scholar Chair in Environmental Law at the Loyola University, New Orleans School of Law. **Karen Sokol** is a Policy Analyst at the Center for Progressive Reform.

Special thanks to Marie Lynn Miranda, Associate Research Professor in the Environmental Sciences and Policy Division of the Nicholas School of the Environment and Earth Sciences at Duke University for the maps featured in this report.

Notes

¹ Twenty-five percent of the nation's coastal wetlands reside in southern Louisiana. MIKE TIDWELL, *BAYOU BLUES: THE RICH LIFE AND TRAGIC DEATH OF LOUISIANA'S CAJUN COAST* 6 (2003).

² U.S. ARMY CORPS OF ENG'RS, 1 LOUISIANA COASTAL AREA (LCA), *LOUISIANA: ECOSYSTEM RESTORATION STUDY, FINAL* § 1.1 (Nov. 2004), available at <http://www.lca.gov/final/main_report1.aspx>.

³ *Id.*

⁴ Sydney Blumenthal, *No One Can Say They Didn't See It Coming*, SALON, Aug. 31, 2005, available at <http://www.salon.com/opinion/blumenthal/2005/08/31/disaster_preparation/> (last visited Sept. 21, 2005).

⁵ U.S. ARMY CORPS OF ENG'RS, *supra* note 2, at § 1.1. A complex of deep-draft ports, including the Port of South Louisiana, handles more tonnage than any other port in the Nation. *Id.* Five years ago, "Louisiana led the Nation with production of 592 million barrels of oil and condensate (including the outer continental shelf), valued at \$17 billion, and was second in the Nation in natural gas production with \$1.3 billion (excluding the outer continental shelf)." *Id.* In addition, more than 29% of the country's crude oil supply and nearly 34% of its natural gas supply moves through Louisiana, which, incidentally, also hosts about half of the nation's refining capacity. *Id.* This relationship helps explain the dramatic surges in fuel prices that immediately followed Katrina.

⁶ Fisheries in the Gulf of Mexico provide about 20% of all seafood consumed in the United States. Nearly all of that catch is dependent, in some way, on the universe of microscopic plant and animal life first nurtured in the Louisiana Coastal Plain. Oliver A. Houck, *Land Loss in Coastal Louisiana: Causes, Consequences, and Remedies*, 58 TUL. L. REV. 3, 84-86 (1983).

⁷ About 70% of all birds that migrate through the United States use the Mississippi and Central flyways. U.S. ARMY CORPS OF ENG'RS, *supra* note 2, at § 1.1. The coastal plain also supports several endangered or previously endangered species, including bald eagles, brown pelicans, alligators, and various kinds of whales. Houck, *supra* note 6, at 90. The birdlife moving through southern Louisiana supports significant commercial enterprises, including tourism, birding, and hunting. Houck, *supra* note 6, at 88-90.

⁸ *Id.* at 78-79. The marshes' natural store of fresh water also acts as a bulwark against intruding salt water, which, were it allowed to flow uninhibited up the bayous, would

destroy crucial shellfish habitat and poison groundwater supplies south of New Orleans. *Id.* at 80-81.

⁹ *Id.* at 99 (estimating an annual value of around \$10 billion in 1983, using two different valuation methods).

¹⁰ U.S. ARMY CORPS OF ENG'RS, *supra* note 2, at iii. In the 1970s, Louisiana was losing an estimated 25,200 acres per year from a combination of natural and human process. *Id.* From 1990 to 2000, the rate slowed to 15,300 acres per year. *Id.*

¹¹ *Id.* That loss would represent ten percent of Louisiana's remaining coastal plain. *Id.*

¹² *Id.* § 2.1.1.4.

¹³ Houck, *supra* note 6, at 15.

¹⁴ U.S. ARMY CORPS OF ENG'RS, *supra* note 2, § 2.1.1.4.

¹⁵ *Id.* § 2.1.2.2.

¹⁶ Hydraulic forces erode the banks of such canals, causing them to widen at sometimes alarming rates. The surface area of the coast's artificial waterways may, itself, account for "two to four percent of [the coast's] total land mass." Houck, *supra* note 6, at 37.

¹⁷ *Id.* at 39-40.

¹⁸ See TIDWELL, *supra* note 1, at 131-32.

¹⁹ The projects included restoring wetlands near New Orleans with mechanical pumps, shoring up the eroding coast of Cameron Parish, and revitalizing beaches on select barrier islands. *Id.* at 132-33.

²⁰ TIDWELL, *supra* note 1, at 134.

²¹ *Id.* at 134.

²² Mark Schleifstein, *Corps Seeks Help to Scale Down Plan*, TIMES-PICAYUNE (New Orleans), Apr. 10, 2004. Money was not the only thing siphoned off from Louisiana's coastal restoration efforts. In the spring of 2004, New Orleans's *Times-Picayune* reported that Army Corps officials involved in restoring Louisiana's wetlands had "been sent to assist those fighting in and rebuilding Iraq, including oversight of a similar wetlands restoration project there" at the mouth of the Tigris and Euphrates River. *Id.*

²³ Kathleen Babineaux Blanco, *Saving America's Wetland*, WASH. POST, Dec. 8, 2004, at A31 (op-ed).

²⁴ Michael Scherer, *Bush Fought Funding in Energy Bill for Gulf Coast Protection*, SALON, Sept. 1, 2005 available at <http://www.salon.com/news/feature/2005/09/01/against_funding/> (last visited Sept. 21, 2005).

- ²⁵ See Alyson C. Flournoy, *Section 404 at Thirty-Something: A Program in Search of a Policy*, 55 ALA. L. REV. 607, 644 (2004).
- ²⁶ Graphic, *First Line of Defense: Hoping the Levees Hold*, TIMES-PICAYUNE (New Orleans), available at <http://www.nola.com/hurricane/popup/nolalevees_jpg.html>.
- ²⁷ *Id.*
- ²⁸ Ralph Vartabedian, *Much Wider Damage to Levees Is Disclosed*, L.A. TIMES, Sept. 13, 2005, available at <<http://www.latimes.com/news/nationworld/nation/la-na-corps13sep13,0,5962987.story?coll=la-home-headlines>> (last visited Sept. 21, 2005).
- ²⁹ Dan Froomkin, *White House Briefing: A Dearth of Answers*, WASH. POST, Sept. 1, 2005, available at <http://www.washingtonpost.com/wp-dyn/content/blog/2005/09/01/BL2005090100915.html?nav=rss_politics> (last visited Sept. 21, 2005).
- ³⁰ Michael Grunwald, *Canal May Have Worsened City's Flooding*, WASH. POST, Sept. 14, 2005, at A21.
- ³¹ Jerry Mitchell, *E-Mail Suggests Government Seeking to Blame Groups*, CLARION-LEDGER (Miss.), Sept. 16, 2005, at A1, available at <<http://www.clarionledger.com/apps/pbcs.dll/article?AID=/20050916/NEWS0110/509160369/1260>> (last visited Sept. 21, 2005) (quoting Corps of Engineers spokesperson John Hall); John McQuaid & Mark Schleifstein, *Evolving Danger*, TIMES-PICAYUNE (New Orleans), June 23, 2002, at J12.
- ³² McQuaid & Schleifstein, *Evolving Danger*, *supra* note 31.
- ³³ Mitchell, *supra* note 31; McQuaid & Schleifstein, *Evolving Danger*, *supra* note 31.
- ³⁴ Mitchell, *supra* note 31; McQuaid & Schleifstein, *Evolving Danger*, *supra* note 31.
- ³⁵ Grunwald, *supra* note 30.
- ³⁶ LAKE PONTCHARTRAIN BASIN FOUND., MARTELLO CASTLE WETMAAP, *Background Information*, available at <http://wetmaap.org/Martello_Castle/Supplement/mc_background.html>.
- ³⁷ McQuaid & Schleifstein, *Evolving Danger*, *supra* note 31.
- ³⁸ *Id.*
- ³⁹ Andrew Martin & Andrew Zajac, *Corps: Lack of Funds Did Not Contribute to Flooding*, CHI. TRIB., Sept. 2, 2005, at 1.
- ⁴⁰ John McQuaid & Mark Schleifstein, *Shifting Tides*, TIMES-PICAYUNE (New Orleans), June 26, 2002, at 14.
- ⁴¹ Andrew Martin & Andrew Zajac, *Flood-Control Funds Short of Requests*, CHI. TRIB., Sept. 1, 2005, at 7.
- ⁴² *Id.*
- ⁴³ Reuters, Andy Sullivan, *Budget Cuts Delayed New Orleans Flood Control Work*, Sept. 1 2005, available at <<http://www.alertnet.org/thenews/newsdesk/N01279059.htm>> (last visited Sept. 21, 2005).
- ⁴⁴ Michael Grunwald & Susan B. Glasser, *Experts Say Faulty Levees Caused Much of Flooding*, WASH. POST, Sept. 21, 2005, at A1.
- ⁴⁵ Michael Grunwald, *Money Flowed to Questionable Projects*, WASH. POST, Sept. 8, 2005, at A1.
- ⁴⁶ *Id.*
- ⁴⁷ McQuaid & Schleifstein, *supra* note 31.
- ⁴⁸ See, e.g., R. Emmett Tyrell, Jr., *Eco-Catastrophe Echoes*, WASH. TIMES, Sept. 16, 2005.
- ⁴⁹ Mitchell, *supra* note 31.
- ⁵⁰ *Hearing on Hurricane Protection Plan for Lake Pontchartrain and Vicinity Before the Subcomm. on Water Res. of the House Comm. on Pub. Works and Transp.*, 95th Cong., 2d Sess. 20 (1978) (testimony of Colonel early J. Rush III) [hereinafter *House Hearing on Pontchartrain Hurricane Protection Project*].
- ⁵¹ *Save Our Wetlands v. Rush*, Civ. No. 75-3710, slip op. at 5 (E.D. La. 1977).
- ⁵² *Id.* at 6.
- ⁵³ U.S. GEN. ACCOUNTING OFFICE, IMPROVED PLANNING NEEDED BY THE CORPS OF ENGINEERS TO RESOLVE ENVIRONMENTAL, TECHNICAL AND FINANCIAL ISSUES ON THE LAKE PONTCHARTRAIN HURRICANE PROTECTION PROJECT 2 (GAO/MASAD-82-39, Aug. 17, 1982).
- ⁵⁴ U.S. GEN. ACCOUNTING OFFICE, COST, SCHEDULE, AND PERFORMANCE PROBLEMS OF THE LAKE PONTCHARTRAIN AND VICINITY, LOUISIANA, HURRICANE PROTECTION PROJECT 16 (PSAD-76-161, Aug. 31, 1976) [hereinafter GAO, COST, SCHEDULE, AND PERFORMANCE PROBLEMS].
- ⁵⁵ See *House Hearing on Pontchartrain Hurricane Protection Project*, *supra* note 49.
- ⁵⁶ ORLEANS LEVEE DIST. BD. OF COMM'RS, THE ORLEANS LEVEE DISTRICT: HISTORY, available at <<http://www.oreanslevee.com/History1.htm>>.
- ⁵⁷ Grunwald, *supra* note 30.
- ⁵⁸ U.S. GOV'T ACCOUNTABILITY OFFICE, IMPROVED ANALYSIS OF COSTS AND BENEFITS NEEDED FOR SACRAMENTO FLOOD PROTECTION PROJECT 20 n.13 (GAO-04-3, 2003).
- ⁵⁹ All of the figures in this paragraph were reported in U.S. EPA, *Update: Response to Hurricane Katrina* (Sept. 19, 2005),

available at <<http://www.epa.gov/katrina/activities.html#sep13>> [hereinafter EPA, RESPONSE KATRINA].

⁶⁰ *Id.*

⁶¹ Marla Cone and Ashley Powers, *EPA Warns Muck Left by Floodwaters Is Highly Contaminated*, LA TIMES (September 16, 2005), available at <http://www.latimes.com/news/nationworld/nation/la-091605nola_lat,0,5316762.story?coll=la-home-headlines> (last visited Sept. 24, 2005).

⁶² *Id.*

⁶³ Ryan Parry, *Mississippi Burning: Pollution Hells as Fires, Explosions and Oil Spills Follow*, THE DAILY MIRROR (U.K.), Sept. 3, 2005, at 6, 7; see also Sewell Chan & Andrew Revkin, *Water Returned to Lake Pontchartrain Contains Toxic Material*, N.Y. TIMES, Sept. 7, 2005, at A1. The two spills occurred at a Bass Enterprise storage depot in Venice and at a Murphy Oil facility in Chalmette. The Bass spill was estimated at about 68,000-78,000 barrels and the Murphy spill at about 10,000 barrels. See Jim Loney, *It's Almost Unimaginable, the Things We Are Going to Have to Deal With*, Sept. 6, 2005, available at <<http://hartmannwatchwatch.blogspot.com/2005/09/its-almost-unimaginable-things-we-are.html>> (last visited Sept. 24, 2005); Susanne Pagano, *EPA Finds Louisiana Floodwaters Contaminated with Lead, Coliform*, 36 BNA ENV'T REPORTER 1870 (Sept. 9, 2005).

⁶⁴ Associated Press, *Katrina and the Environment*, Sept. 16, 2005, available at <<http://www.cbsnews.com/stories/2005/09/16/Katrina/main855409.shtml>> (last visited Sept. 21, 2005).

⁶⁵ The Administrator of EPA has indicated that all tests conducted by the agency of waters in the flooded residential areas of New Orleans exceed by at least ten times the levels determined by EPA to be safe for human exposure for bacteria that include *e. coli* and fecal coliform. See Pagano, *supra* note 63 (indicating that EPA stopped measuring the amount of bacteria in the water when the levels reached the ten-fold point). See also EPA, *EPA and LDEQ Report Potential Health Risks from Sediments*, available at <<http://yosemite.epa.gov/opa/admpress.nsf/d9bf8d9315e942578525701c005e573c/387f99c6a7a0b7808525707e0062479d!OpenDocument>>. By some accounts, fecal coliform has been found in some of the floodwaters at levels thousands of times higher than the levels designated by EPA as safe. Dina Cappiello, *Tainted Water*, HOUSTON CHRONICLE, Sept. 13, 2005, available at <<http://www.chron.com/cs/CDA/ssistory.mpl/special/05/katrina/3351081>> (last visited Sept. 24, 2005). Several people have already died from exposure to bacteria closely

linked to cholera and some people have fallen ill with *Vibrio vulnificus*, a common marine bacteria. Genevieve Roberts, *Bacteria in Floodwater Blamed for Three Deaths*, THE INDEPENDENT, Sept. 8, 2005, available at <<http://news.independent.co.uk/world/americas/article311127.ece>> (last visited Sept. 24, 2005); CNN, *At Least Thirty Found Dead in Nursing Home*, Sept. 8, 2005, available at <<http://www.cnn.com/2005/US/09/07/katrina.impact/index.html>> (last visited Sept. 24, 2005); Pagano, *supra* note 63.

⁶⁶ Cappiello, *supra*, note 65.

⁶⁷ Marla Cone, *Floodwaters a Soup of Pathogens, EPA Finds*, L.A. TIMES, Sept. 8, 2005, at A18.

⁶⁸ Pagano, *supra*, note 63.

⁶⁹ Cone, *supra*, note 67.

⁷⁰ See, e.g., Andrew Gumbel & Rupert Cornwell, *After Katrina: The Toxic Timebomb*, THE INDEPENDENT, Sept. 7, 2005, available at <<http://news.independent.co.uk/world/americas/article310814.ece>> (last visited Sept. 24, 2005).

⁷¹ Cappiello, *supra*, note 65.

⁷² CNN, *EPA: Bacteria, Lead in New Orleans Floodwaters*, Sept. 15, 2005, available at <<http://www.cnn.com/2005/TECH/science/09/14/katrina.environment.ap/index.html>> (last visited Sept. 24, 2005).

⁷³ Juliet Eilperin, *Flooded Toxic Waste Sites Are Potential Health Threat*, WASH. POST, Sept. 10, 2005, at A15.

⁷⁴ Cone, *supra* note 67. Some of these chemicals are known to cause or are suspected of causing adverse health effects such as cancer, birth defects, and neurological problems. Rebecca Claren, *"The Entire Community Is Now a Toxic Waste Dump,"* SALON, Sept. 9, 2005, available at <<http://www.salon.com/news/feature/2005/09/09/wasteland/index.html>> (last visited Sept. 24, 2005).

⁷⁵ Sewell Chan & Andrew Revkin, *Water Returned to Lake Pontchartrain Contains Toxic Material*, N.Y. TIMES, Sept. 7, 2005, at A1.

⁷⁶ EPA, RESPONSE KATRINA, *supra* note 59.

⁷⁷ A few days after the hurricane hit New Orleans, an explosion occurred at a chemical factory located 15 blocks from the French Quarter and two miles from the Louisiana Superdome and the New Orleans Convention Center, which housed the bulk of the city's refugees. Parry, *supra* note 63.

⁷⁸ See Reuters, Jim Loney, *Few Choices to Rid New Orleans of Poisoned Water*, Sept. 6, 2005.

⁷⁹ Gumbel & Cornwell, *supra* note 70.

⁸⁰ Amy Althans, *Presentation to Focus on Revival of Lake Basin Foundation Chief Talks to AAUW*, TIMES PICAYUNE (New Orleans), January 13, 2005; Leslie Williams, *Beach Group Has Game Plan: Natural Feel Desired for Area Along Lake*, TIMES PICAYUNE (New Orleans), Sept. 6, 2004.

⁸¹ See Eilperin, *supra* note 73.

⁸² Ms. Subra is a nationally recognized expert who testified before the U.S. Senate Environment & Public Works Committee on Superfund Reauthorization in 1997. The testimony is available at <http://epw.senate.gov/105th/sub_9-04.htm>. She can be reached at either (337) 367-2216 or (337) 578-3994.

⁸³ The Agriculture Street site operated from 1912 until 1959, but was reopened in 1965 to receive debris created by Hurricane Betsy. The combination of garbage and service station oil waste often caused fires at the site, and during that period, local residents called it “Dante’s Inferno.” A complete, 12-page site description explaining the contamination and remediation of this site was available on the EPA web site as of September 10, 2005. As of September 23, 2005, this document was replaced by a three-page version that is far less informative. A paper copy of the original site description, entitled *Agriculture Street Landfill* with an EPA Publication date of April 6, 2005 is on file with the authors [hereinafter referred to as “Original Agriculture Street Landfill Description”]. The revised version is available at <<http://www.epa.gov/earth1r6/6sf/pdffiles/0600646.pdf>>.

⁸⁴ Among the issues surrounding the site, in addition to the inadequacy of the remedy, explains Darryl Malek-Wiley, an environmental justice organizer with the Sierra Club, is the government’s role in the 1970s in “encouraging first-time black homebuyers” to settle in a development that residents later learned to be on top of the former landfill. Eilperin, *supra* note 73.

⁸⁵ AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, PUBLIC HEALTH ASSESSMENT: AGRICULTURE STREET LANDFILL, available at <http://www.atsdr.cdc.gov/HAC/PHA/agriculturestreet/asl_p1.html>.

⁸⁶ EPA picked up 52,615 tons of soil, or an average of 86 tons per acre, and put down 177,293 cubic yards of clean fill in its place. See Original Agriculture Street Landfill Description, *supra* note 83.

⁸⁷ For an account of the trip, see <http://www.ejrc.cau.edu/unchr_ej.htm>. For further information about environmental justice issues at Superfund sites, see *infra* notes 220-60 and accompanying text (*The Two Americas: Race, Class and Injustice*), and Alicia Lyttle,

Agriculture Street Landfill: Environmental Justice Case Study (U. Mich., Jan. 2003), available at <<http://www.umich.edu/~snre492/Jones/agstreet.htm>>; <<http://www.ejrc.cau.edu/POCEG-02.PDF>>; and Robert D. Bullard, *Environmental Justice in the 21st Century* (Envtl. Justice Res. Ctr.), available at <<http://assets.cambridge.org/052166/0629/sample/0521660629ws.pdf>>.

⁸⁸ See EPA Site Description, *Bayou Bonfouca, Slidell, Louisiana*, available at <<http://www.epa.gov/earth1r6/6sf/pdffiles/0600574.pdf>>.

⁸⁹ Louisiana Dep’t of Env’t. Quality, *Fish Consumption and Swimming Advisories* (Jan. 11, 2005), available at <<http://www.deq.state.la.us/surveillance/mercury/fishadvi.htm#table>>.

⁹⁰ AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, PUBLIC HEALTH ASSESSMENT: BAYOU BONFOUCA, available at <http://www.atsdr.cdc.gov/HAC/PHA/bonfouca/bon_p3.html>.

⁹¹ A complete, 8-page site description explaining the contamination and remediation of this site was available on the EPA web site as of September 10, 2005. As of September 23, 2005, this document was replaced by a three-page version that is far less informative. A paper copy of the original site description, entitled *Madisonville Creosote Works* with an EPA Publication date of September 6, 2005 is on file with the authors. The revised is available at <<http://www.epa.gov/earth1r6/6sf/pdffiles/0600653.pdf>>.

⁹² Unfortunately, there are no “deep pocket” corporations in evidence around the three sites described above, and the only alternative is for the Superfund to pick up the tab.

⁹³ Meredith Preston & Susan Bruninga, *Amendment to Reinstate Industry Tax to Support Trust Fund Defeated in Senate*, 35 BNA ENV’T REPORTER 536 (March 12, 2004). For more information on the battle to reinstate the tax, see Dean Scott, *Senators Criticize Cut in EPA Water Fund, Challenge Pace for Superfund Cleanups*, 46 BNA ENV’T REPORTER, 263 (Feb. 11, 2005).

⁹⁴ President Bush has recommended holding Superfund spending level, adding only \$32 million to the program in his most recent budget. Because of the missing money, EPA will only be able to address 40 sites in the upcoming year, down from an average of 80 during the Clinton Administration. *Id.*

⁹⁵ See CLIMATE CHANGE 2001: IMPACTS, ADAPTATION, AND VULNERABILITY CONTRIBUTION OF WORKING GROUP II TO THE THIRD ASSESSMENT OF GLOBAL CLIMATE CHANGE 766 (McCarthy et al. eds., 2001).

⁹⁶ Kevin Trenberth, *Climate: Uncertainty in Hurricanes and Global Warming*, 308 SCIENCE 1753, 1754 (June 17, 2005). See also Kerry Emanuel, *Increasing Destruction of Tropical Cyclones Over the Past Thirty Years*, 436 NATURE 686 (Aug. 4, 2005); Thomas R. Knutson, Robert E. Tuleya, *Impact of CO₂-Induced Warming on Simulated Hurricane Intensity and Precipitation: Sensitivity to the Choice of Climate Change Model and Convective Parameterization*, 17 J. CLIMATE 3477 (2004).

⁹⁷ Nearly 90% of U.S. energy economy is based on fossil fuels and the United States consumes about 25% of the world's oil production. DOE ENERGY INFO. AGENCY, ANNUAL ENERGY REVIEW 2004, at 8-9 (Aug. 2005) available at <<http://www.eia.doe.gov/emeu/aer/contents.html>>.

⁹⁸ DANIEL L. ALBRITTON, ET AL., INTERGOV'TL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: SYNTHESIS REPORT (Robert T. Watson et al. eds., 2001), available at <http://www.grida.no/climate/ipcc_tar/vol4/english/>.

⁹⁹ See, e.g., NAT'L COMM'N ON ENERGY POL'Y, ENDING THE ENERGY STALEMATE: A BIPARTISAN STRATEGY TO MEET AMERICA'S ENERGY CHALLENGES (Dec. 2004); ENERGY FUTURE COALITION, CHALLENGE AND OPPORTUNITY: CHARTING A NEW ENERGY FUTURE 27-29, 86-100 (2003); WILLIAM J. CLINTON PRESIDENTIAL FOUND., CONFERENCE PROCEEDINGS OF NEW THINKING ON ENERGY POLICY: MEETING THE CHALLENGES OF SECURITY, DEVELOPMENT, AND CLIMATE CHANGE (Dec. 6, 2004) (video of the forum available at <<http://www.clintonpresidentialcenter.org/index.htm>>).

¹⁰⁰ Private international energy firms such as British Petroleum and the Shell Group and domestic firms such as Cinergy have adopted the concept of sustainable development in their overall energy planning, making sustainability a public-private partnership. See, e.g., Brit. Petroleum, *Environment and Society: Climate Change*, at <<http://www.bp.com/subsection.do?categoryId=4451&contentId=3072030>> (British Petroleum's webpage on climate change); Shell Group, *Environment and Society*, at <http://www.shell.com/home/Framework?siteId=royal-en&FC3=/royal-en/html/iwgen/environment_and_society/dir_environment_and_society.html&FC2=/royal-en/html/iwgen/leftnavs/zzz_lhn7_0_0.html> (Shell Group's webpage on environmental issues, including climate change and renewable resources); Cinergy, *Sustainability*, at <<http://www.cinergy.com/sustain/default.asp>> (Cinergy's webpage on sustainable development).

¹⁰¹ See LAW OF ENERGY FOR SUSTAINABLE DEVELOPMENT (Adrian J. Bradbrook et al. eds., 2005); RICHARD L.

OTTINGER ET AL., COMPENDIUM OF SUSTAINABLE ENERGY LAWS (2005); U.N. DEV. PROGRAMME, ENERGY FOR SUSTAINABLE DEVELOPMENT: A POLICY AGENDA (Thomas B. Johnsson & José Goldemberg eds., 2002); IUCN ENVTL. LAW PROGRAMME, ENERGY LAW AND SUSTAINABLE DEVELOPMENT (Adrian J. Bradbrook & Richard L. Ottinger eds., 2003).

¹⁰² Despite the recently enacted Energy Policy Act of 2005 (EP Act of 2005), as reported in H. R. REP. NO. 109-190 (2005), we continue to favor large-scale, capital-intensive, national fossil fuel firms and industries. The recently enacted EP Act of 2005 does provide some funding for renewable resources and for research and development in new energy technologies and higher energy efficiencies. Nevertheless, the bulk of the Act favors traditional energy industries and provides, according to a Congressional Research Service report, over \$4 billion to the oil industry, \$3 billion to the coal industry, and over \$5 billion to the nuclear power industry. See ROBERT L. BAMBERGER & CARL E. BEHRENS, CONG. RESEARCH SERV., ENERGY POLICY: COMPREHENSIVE ENERGY LEGISLATION (H.R. 6) IN THE 109TH CONGRESS (July 29, 2005), available at <<http://www.usembassy.it/pdf/other/IB10143.pdf>>. The Act favors traditional energy industries while loosening environmental restrictions, loosening restrictions on oil and gas drilling on our nation's coasts, failing to reduce dependence on foreign oil, and failing to reduce oil consumption even with the simple expedients of improved vehicle fuel standards and requirements for greater use of renewable energy resources. See MINORITY STAFF OF HOUSE COMM. ON GOV'T REFORM, FLASH REPORT: KEY IMPACTS OF THE ENERGY BILL — H.R. 6 (July 2005); Bamberger & Behrens, *supra*.

¹⁰³ DOE ENERGY INFO. AGENCY, *supra* note 97.

¹⁰⁴ Peter Maas, *The Braking Point*, N.Y. TIMES MAG. 30 (Aug. 21, 2005); PAUL ROBERTS, *THE END OF OIL* (2004).

¹⁰⁵ Links to sources for this timeline and a more complete timeline can be found at <<http://www.thinkprogress.org/katrina-timeline>>.

¹⁰⁶ Press Release, U.S. Dept. of Comm., After 10 Years, Hurricane Andrew Gains Strength (Aug. 21, 2002), at <http://www.nhc.noaa.gov/NOAA_pr_8-21-02.html>.

¹⁰⁷ See Daniel Zwerdling, *Hurricane Risk to New Orleans*, AM. RADIOWORKS (Sept. 2002, Minn. Public Radio & NPR News), at <<http://americanradioworks.publicradio.org/features/wetlands/hurricane1.html>>.

¹⁰⁸ See, e.g., David R. Baker, *Thousands Dead, 1 Million Evacuated. Katrina? No, Simulation Run Last Year*, S.F.

CHRON., Sept. 9, 2005; Joel K. Bourne, *Gone with the Water*, NAT'L GEOG., Oct. 2004, available at <<http://www3.nationalgeographic.com/ngm/0410/feature5/>>; Zwerdling, *supra* note 107.

¹⁰⁹ Eric Berger, *Keeping Its Head Above Water*, HOUS. CHRON., Dec. 1, 2001.

¹¹⁰ See, e.g., Leonard Witt, *No Plan Ever Made to Help New Orleans' Most Vulnerable*, ATLANTA J-CONST., Sept. 1, 2005 (25,000 to 100,000); Shirley Laska, *What If Hurricane Ivan Had Not Missed New Orleans?*, 29 NAT. HAZARDS OBSERVER (2004) (40,000 to 60,000); Bourne, *supra* note 108 (50,000); Zwerdling, *supra* note 107 (20,000 to 100,000).

¹¹¹ City of New Orleans Comprehensive Emergency Management Plan, Annex I: Hurricanes, available at <<http://www.cityofno.com/portal.aspx?portal=46&tabid=26>>, pt. 3.

¹¹² See City of New Orleans Comprehensive Emergency Management Plan, Special Needs Shelter Plan, available at <<http://www.cityofno.com/portal.aspx?portal=46&tabid=28>>, pt. I.

¹¹³ State of Louisiana, Emergency Operations Plan, Supplement 1A: Southeast Louisiana Hurricane Evacuation and Sheltering Plan (Jan. 2000), at annex C, pp. C-2 to C-5, available at <<http://www.ohsep.louisiana.gov/plans/EOPSheltersupplement.pdf>> [hereinafter Southeast Louisiana Hurricane Evacuation and Sheltering Plan]; City of New Orleans Comprehensive Emergency Management Plan, Annex I: Hurricanes, *supra* note 111.

¹¹⁴ *New 'Times-Picayune' Editorial Hits Feds for Blaming Others*, EDITOR & PUBLISHER, Sept. 7, 2005, available at <http://www.editorandpublisher.com/eandp/news/article_display.jsp?vnu_content_id=1001055628> (last visited Sept. 11, 2005).

¹¹⁵ *Id.*

¹¹⁶ Bruce Nolan, *In Storm, N.O. Wants No One Left Behind*, TIMES-PICAYUNE (New Orleans), July 2, 2005, available at <<http://www.nola.com/search/index.ssf?/base/news-10/1122184560198030.xml?nola>> (last visited Sept. 9, 2005).

¹¹⁷ Laska, *supra* note 110.

¹¹⁸ John McQuaid & Mark Schleichstein, *Left Behind*, TIMES-PICAYUNE (New Orleans), June 24, 2002, available at <http://www.nola.com/hurricane/index.ssf?/washingaway/leftbehind_1.html> (last visited Sept. 19, 2005) (alterations in original). Louisiana's Emergency Operations Plan also recognizes that "[s]heltering of evacuees outside of the [Greater New Orleans Metropolitan Area] becomes necessary in a Category 3 or higher hurricane." Southeast

Louisiana Hurricane Evacuation and Sheltering Plan, *supra* note 114, at II-1.

¹¹⁹ Southeast Louisiana Hurricane Evacuation and Sheltering Plan, *supra* note 113, at III-5.

¹²⁰ State of Louisiana Emergency Operations Plan, Supplement IC: Shelter Operations Plan (Jan. 2000), at 11, Part Three, sec. III.A.1, available at <<http://www.ohsep.louisiana.gov/plans/EOPShelter-supplement.pdf>>.

¹²¹ Southeast Louisiana Hurricane Evacuation and Sheltering Plan, *supra* note 113, at IV-2; see also *id.* at III-4. Obviously, this instruction was never implemented in preparation for Katrina.

¹²² See *id.* at III-5 (instructing parish officials to "[a]ssist person with mobility limitations to find last resort refuge," and providing that persons at "last resort" refuges "who cannot be evacuated in time to avoid the storm will remain" in these refuges).

¹²³ See Michael Perlstein & Brian Thevenot, *Evacuation Isn't an Option for Many N.O. Area Residents*, TIMES PICAYUNE, Sept. 15, 2004, at Metro, p. 1.

¹²⁴ Laska, *supra* note 110.

¹²⁵ *Id.*

¹²⁶ Nolan, *supra* note 116.

¹²⁷ *Id.*

¹²⁸ See Lise Olsen, *City Had Evacuation Plan But Strayed from Strategy*, HOUS. CHRON., Sept. 8, 2005.

¹²⁹ The 64 larger buses accommodate only around 60 people each, and the current estimate of the number of people without the resources to evacuate is 134,000. See Nolan, *supra* note 116. FEMA provided 500 buses to evacuate approximately 25,000 people from the Superdome alone. Associated Press, *Refugees Heading to Texas*, Sept. 1, 2005, available at <<http://www.foxnews.com/story/0,2933,167926,00.html>> (last visited Sept. 11, 2005).

¹³⁰ Mark Schleichstein, *Preparing for the Worst*, TIMES PICAYUNE, May 31, 2005, available at <www.nola.com/news/t-p/frontpage/indexssf2/base/news-31117519029150100.xml>. Matthews further noted that the viability of whatever plan the city could implement would depend on whether RTA and New Orleans public school officials could find volunteer bus drivers. *Id.*

¹³¹ Nolan, *supra* note 116.

¹³² *Id.*

¹³³ See *supra* notes 107-10 and accompanying text.

¹³⁴ See Letter from Rep. Tom Davis, Chairman & Rep. Henry Waxman, Ranking Minority Member, House Comm. on Gov't Reform, to Michael Chertoff, Secretary of DHS (Sept. 9, 2005), available at <<http://democrats.reform.house.gov/Documents/20050909123505-34183.doc>> (describing the IEM contract and the hurricane simulation exercise and requesting further documentation of activities undertaken pursuant to the contract); Press Release, IEM, IEM Team to Develop Catastrophic Hurricane Disaster Plan for New Orleans & Southeast Louisiana (June 3, 2004), available at <www.ieminc.com/Whats_New/Press_Releases/pressrelease060304_Catastrophic.htm>.

¹³⁵ Press Release, FEMA, Hurricane Pam Exercise Concludes (July 23, 2004), available at <<http://www.fema.gov/news/newsrelease.fema?id=13051>>. Michael L. Brown, Louisiana's Deputy Director for Emergency Preparedness, bears no relation to Michael D. Brown, the former Director of FEMA who resigned shortly after Katrina hit the Gulf Coast. Ken Silverstein & Josh Meyer, *Louisiana Officials Indicted Before Katrina Hit*, L.A. TIMES, Sept. 17, 2005, available at <<http://www.calendarlive.com/printedition/calendar/qtakes/la-na-money17sep17,0,7229986.story>> (last visited Sept. 19, 2005).

¹³⁶ Richard A. Webster, *Terrible Traces: N.O. Evacuation Fails to Account for Thousands*, NEW ORLEANS CITY BUS., Sept. 27, 2004.

¹³⁷ Associated Press, Ron Fournier & Ted Bidris, *Hurricane Simulation Predicted 61,290 Dead*, Sept. 9, 2005, available at <http://news.yahoo.com/s/ap/20050909/ap_on_re_us/katrina_what_planners_feared>; see also Knight Ridder, Seth Borenstein, *Federal Government Wasn't Ready for Katrina, Disaster Experts Say*, Sept. 1, 2005, available at <<http://www.commondreams.org/headlines05/0901-01.htm>>.

¹³⁸ Eric Lipton, et al., *Disarray Marked Path from Hurricane to Anarchy*, N.Y. TIMES, Sept. 11, 2005, at 1.

¹³⁹ NOAA, Nat'l Weather Serv., Urgent Weather Message, Aug. 28, 2005, available at <http://wikisource.org/wiki/August_28_2005_10:11_AM_CDT_NOAA_Bulletin> (last visited Sept. 9, 2005) (emphasis added).

¹⁴⁰ Associated Press, *Mandatory Evacuation Ordered for New Orleans*, Aug. 28, 2005.

¹⁴¹ Other factors constraining the ability of the poorest residents to evacuate are discussed *infra* note 247 and accompanying text.

¹⁴² Compare U.S. CENSUS BUREAU, LOUISIANA QUICKFACTS (2000), at <<http://quickfacts.census.gov/qfd/states/22/>

2255000.html> (stating that 27.9% of New Orleans residents are living in poverty), with U.S. CENSUS BUREAU, USA QUICKFACTS (2000), at <<http://quickfacts.census.gov/qfd/states/00000.html>> (stating that 12.4% of U.S. residents are living in poverty).

¹⁴³ See *Race in New Orleans: Shaping the Response to Katrina?* (Democracy Now! radio broadcast, Sept. 2, 2005) (transcript available at <<http://www.democracynow.org/article.pl?sid=05/09/02/1419218>>) (interview with Dr. Beverly Wright, Director of the Deep South Center for Environmental Justice); *infra* text accompanying note 240.

¹⁴⁴ David Gonzalez, *From Margins of Society to Center of Tragedy*, N.Y. TIMES, Sept. 2, 2005.

¹⁴⁵ Associated Press, *Mandatory Evacuation Ordered for New Orleans*, Aug. 28, 2005; Olsen, *supra* note 128.

¹⁴⁶ BBC News, "Looting and lawlessness are widespread in flood-stricken New Orleans as people made homeless by Hurricane Katrina grow increasingly desperate," Sept. 1, 2005, available at <<http://news.bbc.co.uk/1/hi/world/americas/4205074.stm>>

¹⁴⁷ Associated Press, *The Decision Won't Come Soon on the Superdome's Future*, Sept. 8, 2005, available at <<http://www.philly.com/mld/inquirer/sports/12585714.htm>> (last visited Sept. 9, 2005).

¹⁴⁸ Joseph B. Treaster & Deborah Sontag, *Local Officials Criticize Federal Government Over Response*, NY TIMES, Sept. 2, 2005.

¹⁴⁹ Erika Bolstad, *Thousands Finally Leaving, Headed to Uncertain Future*, PHIL. INQUIRER, Sept. 2, 2005.

¹⁵⁰ BBC News, *Refugees Tell Tales of Horror*, Sept. 2, 2005, available at <<http://news.bbc.co.uk/1/hi/world/americas/4207944.stm>> (last visited Sept. 9, 2005).

¹⁵¹ Wil Haygood & Ann Scott Tyson, *It Was as If All of Us Were Already Pronounced Dead*, WASH. POST, Sept. 15, 2005, at A1..

¹⁵² David Rohde et al., *Vulnerable and Doomed in the Storm*, N.Y. TIMES, Sept. 19, 2005, available at <www.nytimes.com/2005/09/19/national/nationalspecial/19victims.html> (last visited Sept. 22, 2005).

¹⁵³ BBC News, *New Orleans Evacuation Under Way*, Sept. 1, 2005, <<http://news.bbc.co.uk/2/hi/americas/4203718.stm#map>> (last visited Sept. 22, 2005).

¹⁵⁴ Rohde et al., *supra* note 152.

¹⁵⁵ *Id.*

¹⁵⁶ Stephen J. Hedges, *Navy Ship Nearby Underused*, CHI. TRIB., Sept. 4, 2005, <<http://www.chicagotribune.com/news/>

nationworld/chi-0509040369sep04,1,4144825.story? page=1> (last visited Sept. 22, 2005).

¹⁵⁷ Eventually, it dispatched a 135-foot landing craft loaded with a crew of 16, including a doctor, as well as food, water and medical supplies, to travel the ninety miles up the Mississippi to New Orleans. Before the landing craft could deliver its cargo, the Bataan was dispatched to stand off Gulfport, Miss., and the landing craft was called back to the ship. *Id.*

¹⁵⁸ Interview by Karen Sokol with Dana Lynn, displaced New Orleans evacuee, Houston, Tx. (Sept. 2, 2005).

¹⁵⁹ See Haygood & Tyson, *supra* note 151; see also Scott Gold, *Trapped in an Arena of Suffering*, L.A. TIMES, Sept. 1, 2005, at <http://www.nola.com/newslogs/breakingtp/index.ssf?/mtlogs/nola_Times-Picayune/archives/2005_08.html#075561> (last visited Sept. 11, 2005) (noting that by Wednesday, August 31, the Superdome “had degenerated into horror,” and that officials were “turn[ing] away hundreds”); Keith Spera, *Desperation, Death on Road to Safety*, TIMES-PICAYUNE (New Orleans), Aug. 31, 2005, at <http://www.nola.com/newslogs/breakingtp/index.ssf?/mtlogs/nola_Times-Picayune/archives/2005_08.html#075561> (last visited Sept. 11, 2005) (noting that new evacuees from flooded areas were being taken to the Convention Center). When Don Carr went to the French Quarter to get food and water for his family and neighbors staying on the second story of a house in his neighborhood in the 8th Ward, police told him that “six more feet of water was coming and to get to the Superdome.” When he and the rest of his group arrived at the Dome, however, the guards would not allow them or hundreds of others to enter. Interview by Karen Sokol with Don Carr, displaced New Orleans evacuee, Houston, Tx. (Sept. 5, 2005).

¹⁶⁰ Interview by Karen Sokol with Kay Brown, displaced New Orleans evacuee, Houston, Tx. (Sept. 5, 2005).

¹⁶¹ Larry Eichel, *Unlike 9/11: Government Response Blasted*, PHIL. INQUIRER, Sept 4, 2005.

¹⁶² *Id.*

¹⁶³ Associated Press, *Administration Feeling Heat for Response to Katrina*, USA TODAY, Sept. 2, 2005; see also Peter Whoriskey & Susan Levine, *Guard Troops Descend Upon the Chaos*, WASH. POST, Sept. 4, 2005, at A1 (“The National Guard arrived here in force Friday . . .”).

¹⁶⁴ A Defense Department Briefing by Lt. Gen. H. Steven Blum described the National Guard arrival at the convention center on Friday:

. . . a potentially very dangerous volatile situation in the convention center where tens of thousands of people literally occupied that on their own. We had people that were evacuated from hotels, and tourists that were lumped together with some street thugs and some gang members that – it was a potentially very dangerous situation.

We waited until we had enough force in place to do an overwhelming force. Went in with police powers, 1,000 National Guard military policemen under the command and control of the adjutant general of the State of Louisiana, Major General Landreneau [at noon Friday] stormed the convention center, for lack of a better term, and there was absolutely no opposition, complete cooperation, and we attribute that to an excellent plan, superbly executed with great military precision. . . .

Had we gone in with less force it may have been challenged, innocents may have been caught in a fight between the Guard military police and those who did not want to be processed or apprehended, and we would put innocents’ lives at risk. As soon as we could mass the appropriate force, which we flew in from all over the states at the rate of 1,400 a day, they were immediately . . . moved right to the scene, briefed, rehearsed, and then they went in and took this convention center down.

Dep’t of Def., News Briefing, Sept 3, 2005 (presented by Lt. Gen. H. Steven Blum, National Guard Bureau Chief) (transcript available at <<http://www.dod.mil/transcripts/2005/tr20050903-3850.html>>).

¹⁶⁵ *A Free Fall from Grace*, CONN. POST, Sept. 3, 2005.

¹⁶⁶ *A Ruined City Left for Dead*, CANBERRA TIMES (Australia), Sept. 3, 2005, at 1.

¹⁶⁷ *Frustration Boils*, THE ADVOCATE (Baton Rouge), Sept. 2, 2005, at 1-A (“Gov. Kathleen Blanco warned looters that 300 Arkansas National Guardsmen, “fresh from Iraq,” have arrived in the storm-stricken city. And they are “more than willing” to shoot criminals on sight, she said.”).

¹⁶⁸ *A Ruined City Left for Dead*, *supra* note 166.

¹⁶⁹ See, e.g., CNN, *Convoys Bring Relief to New Orleans*, Sept. 2, 2005, available at <<http://www.cnn.com/2005/US/09/02/katrina.impact/index.html>> (last visited Sept. 22, 2005) (quoting CNN’s Barbara Starr reporting of Lt. Gen. Russel Honore, “A few moments ago, he stopped a truck full of National Guard troops . . . and said, ‘Point your weapons down, this is not Iraq’”).

- ¹⁷⁰ Susan B. Glasser & Michael Grunwald, *The Steady Buildup to a City's Chaos*, WASH. POST, Sept. 11, 2005, at A1.
- ¹⁷¹ *Id.*
- ¹⁷² *Id.*
- ¹⁷³ Larry Eichel, *Unlike 9/11: Government Response Blasted*, PHIL. INQUIRER, Sept 4, 2005.
- ¹⁷⁴ See Michelle Millhollon, *Blanco Says Feds Pledged Buses*, THE ADVOCATE (Baton Rouge), Sept. 18, 2005, available at <http://www.2theadvocate.com/stories/091805/new_blanco001.shtml> (last visited Sept. 20, 2005); Glasser & Grunwald, *supra* note 170.
- ¹⁷⁵ Lipton, et al., *supra* note 138.
- ¹⁷⁶ Millhollon, *supra* note 174.
- ¹⁷⁷ *Id.*
- ¹⁷⁸ Secretary Michael Chertoff, U.S. Dep't of Homeland Sec., *CBS News' Face the Nation* (Sept. 4, 2005), transcript available at: <http://www.cbsnews.com/htdocs/pdf/face_90405.pdf> (last visited Sept. 22, 2005).
- ¹⁷⁹ See *supra* notes 134-35 and accompanying text for a discussion of the FEMA-IEM planning exercise.
- ¹⁸⁰ Rescue planning, for example, had apparently concluded that one line of communication would remain open, but when both cell phone and land lines failed, for days rescuers had only short-range walkie-talkies. Daniel Zwerdling and Laura Sullivan, *Katrina: What Went Wrong* (NPR News, Sept. 9, 2005), at <<http://www.npr.org/templates/story/story.php?storyId=4839943>> (last visited Sept. 22, 2005).
- ¹⁸¹ Susan B. Glasser and Josh White, *Storm Exposed Disarray at the Top*, WASH. POST, Sept. 4, 2005, available at <<http://www.washingtonpost.com/wp-dyn/content/article/2005/09/03/AR2005090301653.html>> (last visited Sept. 22, 2002).
- ¹⁸² Byjon Elliston, *Disaster in the Making*, INDEPENDENT WEEKLY (U.K.), Sept. 22, 2004, available at <<http://www.indyweek.com/durham/2004-09-22/cover.html>> (last visited Sept. 22, 2005).
- ¹⁸³ *Id.*
- ¹⁸⁴ *Id.*
- ¹⁸⁵ *Id.*
- ¹⁸⁶ *Review of the Gen. Accounting Office Report on the Federal Emergency Management Agency's Activities After the Terrorist Attacks on September 11, 2001: Hearing Before the U.S. Senate Comm. on Environment & Public Works*, 108th Cong. (2003) (statement of Dale Shipley, Executive Director, Ohio Emergency Management Agency), available at <http://epw.senate.gov/hearing_statements.cfm?id=212197> (last visited 09/22/2005).
- ¹⁸⁷ Elliston, *supra*, note 182.
- ¹⁸⁸ *Hearing Before the Subcomm. on Veterans Affairs, Housing and Urban Development and Independent Agencies of the Senate Appropriations Comm.* (Statement of Joe Allbaugh, Director, Federal Emergency Management Agency) 107th Cong. (2001), available at <<http://www.fema.gov/library/jma051601.shtm>>.
- ¹⁸⁹ *Id.*
- ¹⁹⁰ Elliston, *supra*, note 182.
- ¹⁹¹ *Id.*
- ¹⁹² Charlie Savage, *Slow Response Exposes Holes in Planning*, BOSTON GLOBE, Sept. 4, 2005.
- ¹⁹³ Glasser and White, *supra* note 181.
- ¹⁹⁴ On August 12, 2005 Brown resigned and President Bush appointed R. David Paulison as Acting Under Secretary and head of FEMA. U.S. Federal Emergency Management Agency, *R. David Paulison Named Acting Homeland Security Under Secretary/FEMA Head*, September 13, 2005, Press Release No. HQ-05-249, available at <<http://www.fema.gov/news/newsrelease.fema?id=18835>>.
- ¹⁹⁵ See Brett Arends, *Brown Pushed from Last Job: Horse Group: FEMA Chief Had To Be 'Asked to Resign'*, BOSTON HERALD, Sept. 3, 2005, at 5 (“[Brown] got the job through an old college friend who at the time was heading up FEMA.”).
- ¹⁹⁶ *Id.*
- ¹⁹⁷ *Id.*
- ¹⁹⁸ According to their online bios on the FEMA website, Chief of Staff Patrick Rhode came to FEMA after a stint as “deputy director of National Advance Operations for the George W. Bush Presidential Campaign,” see <<http://www.fema.gov/about/bios/rhode.shtm>>, Deputy Chief of Staff Scott Morris was a media strategist for the 2000 campaign, see <<http://www.fema.gov/about/bios/smorris.shtm>>.
- ¹⁹⁹ Ron Harris, *Changing Role of National Guard Takes Toll on Its Citizen Soldiers*, ST. LOUIS POST-DISPATCH, Aug. 1, 2005.
- ²⁰⁰ *Id.*
- ²⁰¹ Harris, *supra* note 200. See also Mark Sappenfield, *Katrina Poses Key Test for Stretched National Guard*, CHRISTIAN SCIENCE MONITOR, Sept. 2, 2005, available at <<http://www.csmonitor.com/2005/0902/p02s01-usmi.htm>> (last visited Sept. 22, 2005); William S. Lind, *Destroying the*

National Guard, LewRockwell.com, Sept. 25, 2004, <<http://www.lewrockwell.com/lind/lind40.html>> (last visited Sept. 25, 2005).

²⁰² Bryan Bender, *Demands of Wars Since 9/11 Strain National Guard's Efforts*, BOSTON GLOBE, Sept. 2, 2005. In part because the gear used in combat zones is often battle-damaged, “[t]he National Guard Bureau estimates that its nationwide equipment availability rate is 35 percent, about half the normal level, according to Pentagon statistics.” *Id.*

²⁰³ Philip Dine, *National Guard Insists Iraq War Not Hampering Hurricane Response*, THE TRIBUNE (Port St. Lucie/Fort Pierce, FL), Sept. 4, 2005.

²⁰⁴ Yunji de Nies, *LA National Guard Wants Equipment to Come Back From Iraq*, ABC26 WGNO NEWS, August 1, 2005.

²⁰⁵ *Id.*

²⁰⁶ *Id.*

²⁰⁷ Tom Bowman, *National Guard to Double Relief Forces*, BALTIMORE SUN, Sept. 1, 2005, 5A.

²⁰⁸ Dave Moniz, *Guard Relief Hurt by Obsolete Equipment*, USA TODAY, Sept. 20, 2005, available at <http://www.usatoday.com/news/washington/2005-09-19-guards-equipment_x.htm> (last visited Sept. 22, 2005).

²⁰⁹ Bender, *supra* note 202. Another estimate of Guard availability: “[W]hen Hurricane Katrina hit, Louisiana had “65 percent of its troops available for state missions; Mississippi, 60 percent; Alabama, 77 percent; and Florida, 74 percent,” according to the Department of Defense. *Hurricane Response Demonstrates Guard's State, Federal Capabilities*, REGULATORY INTELLIGENCE DATA, Aug. 29, 2005. About 3,000 Guard troops had been deployed overseas to Iraq and Afghanistan from each of Louisiana and Mississippi. Donna Miles, *Guard Bureau Hotline Links Deployed Troops, Hurricane-Struck Families*, AMERICAN FORCES PRESS SERVICE, THE NATIONAL GUARD, available at <<http://www.ngb.army.mil/news/story.asp?id=1756>> (last visited Sept. 25, 2005).

²¹⁰ CNN Breaking News, *Hurricane Katrina Upgraded to Category 5*, Aug. 28, 2005, transcript available at <<http://transcripts.cnn.com/TRANSCRIPTS/0508/28/bn.01.html>> (last visited Sept. 22, 2005).

²¹¹ By 7 a.m. August 29, at least 3500 Louisiana National Guard troops were on duty throughout the state. *National Guard Responds to Hurricane Katrina*, REGULATORY INTELLIGENCE DATA, Aug. 29, 2005. Lt. Col. Schneider reportedly told Fox News that the Guard was prepared to operate the Superdome shelter “for as long as it takes.” *Id.*

Schneider also predicted adequate food, water, and cots at the shelters, and said that the Guard had helicopters available to help if needed. *Troops Ready to Assist with Hurricane Katrina*, ARMY NEWS SERVICE, Aug. 29, 2005. When looting began, Lieutenant General H. Steven Blum of the Army National Guard Bureau assured the public that the National Guard would help police bring the looting under control: “We have the National Guard called out in significant numbers, with more on the way to augment, not displace, the local civilian law enforcement. They will have law enforcement powers. They will work to augment the local police departments and the state police departments to ensure that this looting gets under control as quickly as possible.” *Rita Cosby Live & Direct* (MSNBC television broadcast, Aug. 29, 2005).

²¹² For example, Michael Brown’s predecessor at FEMA, Joe Allbaugh, stated that “If anyone is telling you that Iraq is getting in the way, well that’s hogwash.” Or, “There are plenty,” said Lt. Col. Mike Milord of the National Guard Bureau. “There are about 331,000 Army National Guard and 106,000 in the Air Guard, so nationwide about 437,000. Subtract 100,000 for all deployment operations, and you still have 337,000 National Guard available.” David A. Sanger, *After Storm, a Tough New Test for Bush*, INTERNATIONAL HERALD TRIBUNE, Sept. 2, 2005, at 1.

²¹³ When questioned on this issue, Major General Harold Cross of the Mississippi National Guard briefly admitted that he could use more resources:

If I had all of my Guard forces here, obviously I would have been able to respond more quicker, without question. But, you know, we’re also fighting an enemy forward, too, and that’s the global war on terrorism. And sure, I would like to have three times as many forces always in the state that I’ve got, always in a state in their readiness centers, ready to respond to individual communities immediately. But we don’t have those resources.

All Things Considered: Mississippi Guard Focusing on Food, Water (NPR News, Sept. 3, 2005), transcript available in LEXIS, Nexis Library, NPR File (statement of Major General Harold Cross).

²¹⁴ *Id.*

²¹⁵ *Defense Department Briefing on Ongoing National Guard Response to Hurricane Katrina*, Sept. 3, 2005, transcript available at <<http://www.dod.mil/transcripts/2005/tr20050903-3850.html>> (last visited Sept. 22, 2005) (“The real issue . . . is that no one anticipated the disintegration or the erosion of the civilian police force in New Orleans.”).

²¹⁶ *Id.* (“As long as there’s one uniformed police officer in the city of New Orleans, we will send as many National Guard soldiers to augment, support, and work in support of that lone law enforcement officer as necessary.”).

²¹⁷ *Id.* (“When they put the original EMAC together it was really for disaster response. Law enforcement was not envisioned. So it has to be handled as a separate process.”).

²¹⁸ *Id.*

²¹⁹ There are numerous reports of services being offered and turned down. Mayor Daley of Chicago offered emergency, medical and technical help prior to the hurricane’s landfall, but was turned down. The American Ambulance Association tried to send 300 emergency vehicles to the flood zone, but was turned down. Col. Tim Tarchick of the Air Force Reserve said his helicopters could have been airborne and recovering survivors in six hours. It took 34 hours to get authorization for them to go. Director Brown urged fire and rescue departments outside of the Gulf Coast States not to send skilled personnel. Glasser and White, *supra* note 181 (Daley and AAA); CBS News, *Memo Tells Story of FEMA Delays*, Sept. 7, 2005, available at <<http://www.cbsnews.com/stories/2005/09/07/katrina/printable821650.shtml>> (last visited Sept. 22, 2005) (Tarchick and fire and rescue departments).

²²⁰ Jason DeParle, *Broken Levees, Unbroken Barriers: What Happens to a Race Deferred*, N.Y. TIMES, Sept. 4, 2005, § 4, at 1.

²²¹ U.S. Census, *Census 2000 Demographic Profile Highlights, New Orleans, Louisiana*, available through <<http://factfinder.census.gov>> (hard copy on file with authors).

²²² U.S. Census, *Poverty Status in 1999 by Sex by Age (2000), Racial or Ethnic Grouping: Black or African American Alone, New Orleans, Louisiana*, PCT 142, Census 2000 Summary File 4 (SF 4), available through <<http://factfinder.census.gov>> (hard copy on file with authors).

²²³ U.S. Census, *Census 2000 Demographic Profile Highlights, New Orleans, Louisiana*, available through <<http://factfinder.census.gov>> (hard copy on file with authors).

²²⁴ City of New Orleans Health Department, *Homeless Healthcare*, available at <<http://www.cityofno.com/portal.aspx?portal=48&tabid=6>>.

²²⁵ DeParle, *supra* note 220 (quoting Craig E. Colten, Louisiana State University).

²²⁶ *Id.*; Greater New Orleans Community Data Center, *Lower Ninth Ward Neighborhood: Income & Poverty*, available at <<http://gnocdc.org/orleans/8/22/income.html>> (poverty

rates in the Lower Ninth Ward ten percent higher than in Orleans Parish generally).

²²⁷ Greater New Orleans Community Data Center, *Lower Ninth Ward Neighborhood: People and Household Characteristics*, available at <<http://gnocdc.org/orleans/8/22/people.html>>.

²²⁸ DeParle, *supra* note 220.

²²⁹ *Id.*

²³⁰ *Id.* See also *supra* notes 106-77 and accompanying text (*The Failures of All Levels of Government to Plan for Emergency Evacuation of All New Orleans Residents*).

²³¹ Researchers from a variety of relevant disciplines made explicit the identities of the likely victims. For example, an article by Shirley Laska of the Center for Hazards Assessment, Response and Technology at the University of New Orleans faulted a hurricane evacuation plan that depended almost entirely on individuals’ ability to drive their cars to safety. “For those without means, the medically challenged, residents without personal transportation, and the homeless, evacuation requires significant assistance.” Laska, *supra*, note 111. Laska estimated that some 120,000 people in New Orleans do not have cars and cited the implications, born of experience during Hurricane Ivan in 2004:

Residents who did not have personal transportation were unable to evacuate even if they wanted to. A proposal made after the evacuation from Hurricane Georges to use public transit buses to assist in their evacuation out of the city was not implemented for Ivan. If Ivan had struck New Orleans directly it is estimated that 40-60,000 residents of the area would have perished.

Id. In a five-part series published from June 23-27, 2002, *The New Orleans Times-Picayune* similarly highlighted the fact that “a large population of low-income residents do not own cars and would have to depend on an untested emergency public transportation system to evacuate them.” McQuaid & Schleifstein, *supra* note 118. A significant portion of those left behind, it observed, “are going to lose their lives.” *Id.*

²³² “For years, these advocates have been telling anyone who’d listen that blacks in New Orleans were far more affected by environmental problems than the white folks in, say, the Garden District – and would be far more vulnerable to a disaster. They’ve long realized a truth that the response to Hurricane Katrina seems to be proving: people in power viewed the city’s poorest residents as, says Robert Bullard, expendable in some sense.” Liza

Featherstone, *Race to the Bottom: Slow Katrina Evacuation Fits Pattern of Injustice During Crises*, GRIST MAGAZINE, Sept. 8, 2005, available at <<http://www.grist.org/news/maindish/2005/09/08/featherstone-katrina/index.html?source=daily>> (last visited Sept. 22, 2005).

²³³ *Id.*

²³⁴ *Id.*

²³⁵ See Makani Themba-Nixon, *Another Case of Government for Some*, Sept. 6, 2005, available at <www.alternet.org/story/25058/> (last visited Sept. 22, 2005).

²³⁶ See, e.g., CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS (Robert D. Bullard, ed. 1993); LUKE W. COLE AND SHEILA FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT (2000); CLIFF RECHTSCHAFFEN AND EILEEN GAUNA, ENVIRONMENTAL JUSTICE: LAW, POLICY AND ENVIRONMENTAL REGULATION (2002).

²³⁷ ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS AND ENVIRONMENTAL QUALITY 97, 105 (3d ed. 2000).

²³⁸ *Id.* at 26.

²³⁹ Along the Lower Mississippi Industrial Corridor – more infamously known as “Cancer Alley” – between Baton Rouge and New Orleans, “there are scores of polluting facilities lining the Mississippi River on both sides of the river. You’re talking about numerous petrochemical plants, plastic production facilities and other heavy industries that are contributing to the pollution flowing into the Mississippi River. Now, near these facilities, in the shadow of these plants, are scores of African-American communities, mostly African-American impoverished communities. People, black and white and Latino, who live in these areas, are exposed to a toxic soup of chemicals regularly released into the air, into the soil, into the water.” *Dozens Dead as Hurricane Katrina Slams into Gulf Coast: A Look at Extreme Weather, Oil Development and Who Gets Hit the Hardest*, Interview by Amy Goodman with Damu Smith (Aug. 30, 2005), available at <<http://www.democracynow.org/article.pl?sid=05/08/30/1354242#transcript>> (last visited Sept. 22, 2005).

²⁴⁰ *Race in New Orleans: Shaping the Response to Katrina?*, Interview by Amy Goodman with Beverly Wright (Sept. 2, 2005), available at <<http://www.democracynow.org/article.pl?sid=05/09/02/1419218>>.

²⁴¹ BULLARD, *supra* note 237, at 5-6.

²⁴² See *supra* notes 83-87 and accompanying text (*Agriculture Street Landfill – The Black Love Canal*).

²⁴³ AGENCY FOR TOXIC SUBSTANCES DISEASE REGISTRY, HEALTH CONSULTATION: AGRICULTURAL STREET LANDFILL, NEW ORLEANS, ORLEANS PARISH, LOUISIANA, 3 (citing 1990 U.S. Census data).

²⁴⁴ Featherstone, *supra* note 232.

²⁴⁵ See, e.g., Catherine A. O’Neill, *Risk Avoidance, Cultural Discrimination, and Environmental Justice for Indigenous Peoples*, 30 ECOLOGY L. Q. 1 (2003).

²⁴⁶ *Id.*

²⁴⁷ Peter Applebome, *et al.*, *A Delicate Balance is Undone in a Flash, and a Battered City Waits, Special Section: Storm and Crisis*, N.Y. TIMES, Sept. 4, 2005, A22; As Natasha Brown, a New Orleans evacuee, explained while waiting to see a doctor at a shelter in Houston, “most of these people (who were unable to leave) live paycheck to paycheck.” Interview by Karen Sokol with Natasha Brown, displaced New Orleans evacuee, Houston, Tx. (Sept. 5, 2005).

²⁴⁸ Jonathan Tilove, *Katrina Lays Bare Deep U.S. Racial Inequalities*, THE DETROIT NEWS, Nation/World, Sept. 4, 2005, available at <<http://www.detnews.com/2005/nation/0509/04/A09-303272.htm>> (last visited Sept. 22, 2005).

²⁴⁹ CNN, *FEMA Chief: Victims Bear Some Responsibility* (Sept. 1, 2005) available at <<http://www.cnn.com/2005/WEATHER/09/01/katrina.fema.brown/index.html>> (last visited Sept. 22, 2005) (“Michael Brown also agreed with other public officials that the death toll in the city could reach into the thousands. ‘Unfortunately, that’s going to be attributable to people who did not heed the advance warnings,’ Brown told CNN. ‘I don’t make judgments about why people chose not to leave but, you know, there was a mandatory evacuation of New Orleans,’ he said.”).

²⁵⁰ Featherstone, *supra* note 232.

²⁵¹ National Environmental Justice Advisory Committee, *Ensuring Risk Reduction in Communities with Multiple Stressors: Environmental Justice and Cumulative Risks/Impacts: Draft Report* (2004).

²⁵² *New Orleans Toxic Tide*, Desert Morning News Web Edition, Sept. 8, 2005, available at <<http://www.deseretnews.com/dn/view/0,1249,605152846,00.html>> (last visited Sept. 22, 2005).

²⁵³ See, e.g., Brad Knickerbocker and Patrik Jonsson, *New Orleans’ Toxic Tide*, CHRISTIAN SCIENCE MONITOR (Sept. 8, 2005).

²⁵⁴ See, e.g., Michael Janofksy, *Bill Would Let E.P.A. Relax Rules for Cleanup*, N.Y. TIMES, Sept. 16, 2005, at A18.

²⁵⁵ U.S. Census, *Louisiana Quick Facts*, (2000), available at <<http://quickfacts.census.gov/qfd/states/22/2255000.html>>

²⁵⁶ Featherstone, *supra* note 232.

²⁵⁷ Interview with Beverly Wright, *supra* note 240.

²⁵⁸ Christopher Cooper, *Old-Line Families Escape Worst of Flood and Plot the Future*, THE WALL STREET JOURNAL, Sept. 8, 2005, at A1.

²⁵⁹ *Id.*

²⁶⁰ Peter H. King, *Above the Water, Plans Float for Rebuilding City*, THE SEATTLE TIMES, Sept. 12, 2005, at A1.

²⁶¹ John R. Wilke & Brody Mullins, *After Katrina Republicans Back A Sea of Conservative Ideas*, WALL STREET JOURNAL, Sept. 15, 2005, at B1.

²⁶² Michael Janofksy, *Bill Would Let E.P.A. Relax Rules for Cleanup*, N.Y. TIMES, Sept. 16, 2005, at A18 (national edition).

²⁶³ INSIDE EPA, Sept. 9, 2005, at 1, 6-7; BNA ENV'T'L REP., Sept. 9, 2005, at 1873.

²⁶⁴ Wilke and Mullins, *supra* note 261, at B9.

²⁶⁵ See notes 48-56 & accompanying text.

²⁶⁶ Wilke & Mullins, *supra* note 261, at B9.

²⁶⁷ *A Shameful Proposition*, N.Y. TIMES, Sept. 10, 2005.

²⁶⁸ David Brooks, *The Best-Laid Plan: Too Bad It Flopped*, N.Y. TIMES, Sept. 11, 2005.

²⁶⁹ ALBERT O. HIRSCHMAN, THE RHETORIC OF REACTION: PERVERSITY, FUTILITY, JEOPARDY 72 (1991).

²⁷⁰ *Id.* at 78.

²⁷¹ A NEW PROGRESSIVE AGENDA FOR PUBLIC HEALTH AND THE ENVIRONMENT: A PROJECT OF THE CENTER FOR PROGRESSIVE REGULATION (Christopher H. Schroeder & Rena Steinzor eds. 2004).

²⁷² Spencer S. Hsu & Josh White, *Separate Inquiry Fails to Gain Support*, WASH. POST, Sept. 15, 2005, at A15 (“The Senate voted along party lines yesterday to reject the creation of an independent panel to investigation the government’s fumbling response to Hurricane Katrina.”).

About the Center for Progressive Reform

Founded in 2002, the Center for Progressive Reform is a 501(c)(3) nonprofit research and educational organization dedicated to protecting health, safety, and the environment through analysis and commentary. CPR believes sensible safeguards in these areas serve important shared values, including doing the best we can to prevent harm to people and the environment, distributing environmental harms and benefits fairly, and protecting the earth for future generations. CPR rejects the view that the economic efficiency of private markets should be the only value used to guide government action. Rather, CPR supports thoughtful government action and reform to advance the well-being of human life and the environment. Additionally, CPR believes people play a crucial role in ensuring both private and public sector decisions that result in improved protection of consumers, public health and safety, and the environment. Accordingly, CPR supports ready public access to the courts, enhanced public participation and improved public access to information.



1200 New York Ave., NW, Suite 400, Washington, DC 20005

202-289-4026 (phone) / 202-289-4402 (fax)

www.progressivereform.org

© Center for Progressive Reform