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THE SECOND IN A SERIES OF TWO HEARINGS TO DISCUSS THE RESPONSE TO HURRICANE KATRINA

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

NOVEMBER 2, 2005

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ONE HUNDRED NINTH CONGRESS
FIRST SESSION

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C O N T E N T S

THE SECOND IN A SERIES OF TWO HEARINGS TO DISCUSS THE RESPONSE TO HURRICANE KATRINA

WEDNESDAY, NOVEMBER 2, 2005

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m. in room 406, Senate Dirksen Building, Hon. James M. Inhofe (chairman of the committee) presiding.

Present: Senators Inhofe, Warner, Bond, Isakson, Vitter, Jeffords, and Lautenberg.

Senator INHOFE. Our meeting will come to order.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

I have been told that we will have quite a few members here, but they are not here. We have to stay on schedule. I will ask the first panel to go ahead and be seated, and we will do some opening statements. I want to welcome all of you here.

I have to pay particular interest to my good friend, Dale Hall, who has assumed a new position and has really done a great job in the region. I appreciate very much your being here.

We welcome you to this committee's oversight hearing on Activities in Response to Hurricane Katrina. The EPW Committee has been actually engaged since the hurricane struck land. We have had numerous briefings, we have had, I guess, about four briefings and committee hearings on this. In addition to that, several of us from the committee went down and met with Senator Vitter and others on site.

There is a good reason for that, because we have the jurisdiction in this committee: we have the EPA, the Army Corps of Engineers, the Federal Highway Administration, the Nuclear Regulatory Commission, the Economic Development Administration, GSA, and the Fish and Wildlife Service. With that jurisdiction, we have more than any other committee has. So we are very interested in staying on top of this, knowing exactly where we are.

Since I gave a lengthy statement at the start of the first hearing, I will be brief today. There is no doubt that we face many challenges when responding to disasters—in the days leading up to the disaster, the days following the long-term recovery. What happened with Katrina was unprecedented for this country. It is vital that

we properly assess the role of the Federal Government to find out what has worked and what has not worked.

While we can look back on the initial responses to make judgments, there is still much work to be done. For example, the EDA has not played a major role to date. They may quickly become a major player in both the rebuilding of the Gulf States as well as a possible partner in addressing the lack of refining capacity that was exploited as a result of recent hurricanes.

I am glad to see Sandy Baruah here representing the EDA today. Sandy, it is also my hope that we can get you confirmed as soon as possible. In the meantime, you do a good job as "acting" in that position.

The NRC's role was completed once the hurricane passed and the facilities came back on line. They did a tremendous job of designing and carrying out their action plan. I hope that others can use their preparedness and execution as a model of how to do it right. If we are to have a future with a strong nuclear energy presence, which is something that I know we will have to have if we are going to become anywhere close to independent in the future, then we have to have confidence in the NRC. They have certainly come through in recent disasters with my vote of confidence. So I welcome you, Chairman Diaz, to this hearing.

Fish and Wildlife, I have already talked about my good friend Dale Hall. He has done some things, we have done some things in Oklahoma that have shown good models for the rest of the country. We are looking forward to that.

I also want to welcome David Winstead, who is here representing the Public Buildings Service of the GSA. Since the storm affected such a large geographic area, the PBS had numerous facilities impacted, more than 3 million square feet of space in 83 facilities.

Of course, I want to welcome Mayor Nagin and the others. I met Mayor Nagin down in New Orleans right after the disaster took place. He has had his hands full down there.

With that, we will get on with the hearing. I would like to have opening statements from first of all the Senator on this committee that was most directly affected.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Good morning and welcome to this committee's oversight hearing on activities in response to Hurricane Katrina. The EPW Committee has been actively engaged since the hurricane struck land. We have held numerous briefings and a day long stakeholder meeting on actions related to Katrina. In October, we held the first of a two-part hearing on the actions of agencies under the jurisdiction of this committee. EPA, the Army Corps and the Federal Highway Administration testified at that hearing. Today, we are holding part two and this one will include the Nuclear Regulatory Commission, the Economic Development Administration, GSA and the Fish and Wildlife Service. We will also hear from the Mayor of New Orleans as well as a business leader and environmental justice expert as they provide their assessment of how all of these agencies, from both the first hearing and this hearing, have responded.

Since I gave a lengthy statement at the start of the first hearing, I will be brief today. There is no doubt that we face many challenges when responding to disasters—in the days leading up to the disaster, the days following and the long-term recovery. What happened with Katrina was unprecedented for this country. It is vital that we properly assess the role of the Federal Government to find out what has worked and what has not worked.

While we can look back on the initial response to make judgments, there is still much work to be done. For example, while EDA has not played a major role to date, they may quickly become a major player in both the rebuilding of the Gulf States as well as a possible partner in addressing with the lack of refining capacity that was exploited as a result of the recent hurricanes. I am glad to see Sandy Baruah here representing EDA today. Sandy, it is also my hope that we can get you confirmed soon so that you will no longer have the title "Acting".

NRC's role was completed once the hurricane passed and the facilities came back on line. They did a tremendous job of designing and carrying out their action plan. I hope that others can use their preparedness and execution as a model of how to do it right. If we are to have a future with a strong nuclear energy presence, then we have to have confidence in NRC, and they certainly came through the recent disasters with my vote of confidence. I want to welcome Chairman Diaz here this morning and look forward to hearing from him.

The Fish and Wildlife Service went above and beyond the call of duty during Katrina. An agency that is known for taking care of wildlife, quickly became an agency that would rescue people. We should all be proud of their dedication and it is good to see Dale Hall here representing them today.

I also want to welcome David Winstead, who is here representing the Public Building Service of the GSA. Since the storm affected such a large geographic area, the PBS had numerous facilities impacted—more than 3 million square feet of space in 83 facilities.

And, of course, I want to welcome Mayor Nagin and the others who are on the subsequent panels, including Mr. Hines and Dr. Chapital. I want thank them for coming to Washington. Mayor Nagin is a very busy man right now and I do appreciate him making the effort to be here today. I look forward to discussing the issues with them.

Senator INHOFE. Senator Vitter.

OPENING STATEMENT OF HON. DAVID VITTER, U.S. SENATOR FROM THE STATE OF LOUISIANA

Senator VITTER. Thank you, Mr. Chairman.

I want to thank you and the Ranking Member for holding this important hearing today in response to the devastating hurricanes that hit Louisiana and neighboring States.

Senator INHOFE. Let me interrupt you just a moment, Senator Vitter.

Would you chair this hearing while I run, and then I will be back shortly? I would appreciate that very much.

Senator VITTER [presiding]. I also want to thank all of the witnesses for being here today, particularly our Mayor, Mayor Nagin.

Just over 2 months have passed since our Nation witnessed a destructive hurricane, Katrina, that left an entire metropolitan area evacuated, flooded, completely closed for weeks, and then of course just a few weeks later, Louisiana was struck by another major storm, Hurricane Rita. We have lost over 1,000 lives and hundreds of billions of dollars in economic activity. Now is a critical time for the rebuilding effort.

Several major businesses have pledged to come back to rebuild in New Orleans, but there are many other businesses that are really deciding right now as we speak whether to come back or relocate.

A key factor, and I can't emphasize this enough, a key, leading factor in terms of that decision on the part of so many individuals and businesses is strong hurricane protection that could withstand a Category 5 hurricane. People need absolute assurance that the level of hurricane and flood protection will be much greater than before Hurricane Katrina. They don't want to relive the catastrophic effects experienced over the last few months. Clearly, re-

building the levees to withstand a Category 5 hurricane will help alleviate the fears people have about moving back and reinvesting their lives and businesses in New Orleans.

Just as clearly, this is an absolute national priority, because nothing could be more foolish than our not getting that job done, and then again, within our lifetime facing another $100 billion, $150 billion price tag as another similar storm hits New Orleans.

We are not only building stronger levees, buildings and infrastructure, but of course we are also trying to revive a shattered economy. We need to help our local job base remain strong and provide incentives that will bring even more jobs and businesses back to New Orleans to get our economy up and running again.

As I have stressed many times, the response and recovery to Hurricane Katrina is not some parochial, narrow Louisiana issue. Our area fuels this Nation with 20 percent of the energy needed to power the United States. Virtually every American is paying higher gas and home heating oil prices. That is going to have a detrimental effect on our Nation's economy.

In addition, the ports between the mouth of the river and Baton Rouge comprise the largest port system in the world. That system provides 36 States with maritime commerce and midwestern farmers depend on our ports and waterways to get their crops to market.

Louisiana's offshore industry provides up to 36 percent of the domestic seafood consumed in this country: shrimp, crawfish, oysters, much more. Much of our ecosystem and fishing fleet has been destroyed. So there again is a third major national impact.

Finally, our coastal estuary is one of the most productive in the Nation and supports the life of the majority of wildlife in the Gulf of Mexico.

I recognize and support the important oversight role and authority of this committee. But with that authority comes extraordinary responsibility for acting quickly, decisively and boldly to immediately provide the confidence to our citizens that a more secure New Orleans will be open for business. We need to rebuild Louisiana so people are safe from future hurricanes. We need hurricane and flood protection levees that will sustain Category 5 protection. The only appropriate response to the protection of south Louisiana is programmatic authority to implement this strong hurricane and flood protection in a fast track manner, because that is absolutely critical to getting people back, jobs back, investment back.

So with that, I look forward to hearing from all of our witnesses today. Thanks very much.

[The prepared statement of Senator Vitter follows:]

STATEMENT OF HON. DAVID VITTER, U.S. SENATOR FROM THE STATE OF LOUISIANA

Chairman Inhofe and Ranking Member Jeffords, thank you for holding this very important hearing today in response to the devastating Hurricanes that my home State of Louisiana has unfortunately experienced first-hand. I would also like to thank each of the witnesses for being here today, especially those from Louisiana.

Just over 2 months have passed since our Nation witnessed the destruction of Hurricane Katrina—an entire major metropolitan area evacuated, flooded and completely closed for weeks. A few weeks later, Louisiana was struck by another major storm, Hurricane Rita.

We have lost over a thousand lives and hundreds of billions of dollars in economic activity. Now is a critical time for the rebuilding effort. Several major businesses have pledged to come back to rebuild in New Orleans. However, there are many other businesses that are deciding now about whether to relocate elsewhere or come back and rebuild in Louisiana.

A key factor for bringing back businesses and citizens to New Orleans is strong hurricane protection that could sustain a Category 5 storm. People need assurance that the level of hurricane and flood protection will be much greater than before Hurricane Katrina. They do not want to relive the catastrophic effects experienced over the past few months. Clearly, rebuilding the levees to withstand a Category 5 storm will help alleviate the fears people have about moving back and reinvesting their lives and businesses in New Orleans.

We are not only rebuilding stronger levees, buildings and infrastructure, but also reviving a shattered economy. We need to help our local job base remain strong and provide incentives that will bring even more jobs and businesses back to New Orleans to get our economy up and running again.

As I have stressed many times, the response and recovery to Hurricane Katrina is not just a Louisiana issue. Louisiana literally fuels this Nation with 20 percent of the energy needed to power the United States. Virtually every American is paying higher gas and home heating oil prices and that is going to have a detrimental affect on our Nation's economy. The ports between Baton Rouge and New Orleans comprise the largest port system in the world. We provide 36 States with maritime commerce and mid-western farmers depend upon our ports and waterways to get their crops to market. Louisiana's offshore industry provides up to 30 percent of the domestic seafood consumed in this country shrimp, crawfish, oysters and many more. Much of our ecosystem and fishing fleet is destroyed. Finally, our coastal estuary is one of the most productive estuaries in the Nation and supports the life of the majority of wildlife in the Gulf of Mexico.

I recognize and support the important oversight role and authority of this committee. With that authority comes the extraordinary responsibility of acting quickly, decisively, and boldly to immediately provide the confidence to our citizens that a bigger, better New Orleans is open for business. We need to rebuild Louisiana so people are safe from future hurricanes. We need hurricane protection and levees that will sustain a Category 5 hurricane. The only appropriate response to the protection of south Louisiana must include programmatic authority to implement strong hurricane protection and flood prevention that is critical to the rebuilding and economic recovery effort.

I look forward to hearing from the witnesses. Thank you.

Senator VITTER. Senator Isakson, do you have an opening statement?

OPENING STATEMENT OF HON. JOHNNY ISAKSON, U.S. SENATOR FROM THE STATE OF GEORGIA

Senator ISAKSON. I will be brief, Senator Vitter. I thank you for chairing the hearing. I thank the Chairman for calling the hearing. I think all of us associate ourselves with the remarks of Senator Vitter, because we kind of suffered together with the two Senators from Louisiana during the tragedy of Katrina. We also suffered together a little bit with the post-Katrina aftermath, where the Government came under great criticism, particularly FEMA and others, for the response they did at the time.

But that is behind us. The comment I would like to make in concert somewhat with what Senator Vitter said, is from a Senator from another State, a southern State but somewhat removed, although we have a lot of Louisiana's kids right now in our public schools, because they have come to Georgia to take care of that, as we respond and as we rebuild, and as a former real estate developer, this is a redevelopment project.

I would encourage each of your agencies to recognize that we need an overall, coordinated plan, inter-governmentally, so that the agencies that are responding in different ways are coordinated and

so that the vision for that plan is something that everyone understands.

I don't know what New Orleans will look like 20 years from now. But I do know what it looks like, and how it looks will depend greatly on how the agencies coordinate and how the plans develop. Probably beginning and ending with what is done with the estuary, what is done with the lake, what is done with the river and what decisions we make.

So my encouragement is to have an intergovernmental agency cooperation attitude and a central master plan. I do not know whose responsibility it would be to ultimately decide on what that plan is, and it certainly needs to be coordinated between the responsibility of the Federal Government under its Stafford Act responsibilities as well as our other responsibilities, in coordination with the State of Louisiana and with the city of New Orleans.

The American taxpayers, I believe, are willing to do their share and their responsibility in helping the people of Louisiana recover. The enthusiasm of that will be directly proportionate to the appearance and the reality of governmental cooperation and fiscal responsibility. The only way you can do that is to have an executed plan where the agencies are coordinated together.

With that, I appreciate the time, Mr. Chairman.

Senator VITTER. Thank you, Senator.

Senator Kit Bond of Missouri.

OPENING STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Senator BOND. Thank you very much, Senator Vitter. Thank you very much for chairing this hearing.

Let me say that Senator Vitter is new on the Senate side, with a lot of experience on the House side. He has stepped up and been a very effective, responsible voice for the recovery efforts in his devastated State. There is nothing like being thrown into one of the biggest crises that this Nation has seen in recent history in your first year here. You have the admiration and support of all of us as you go forward.

I am delighted to see some good friends here who can make things happen at the Federal level. I think our responsibility is to make sure things happen properly. Let's make them happen correctly. You have talked about the need for moving forward quickly on a fast track with the Corps of Engineers. Well, you well know and Senator Isakson well knows that as we are trying to move a Water Resources Development Act to authorize the Corps of Engineers to move forward, we have some on the other side of the aisle who want to put more impediments in the way, they want to slow it down, they want more red tape.

Well, Senator, I am from a State that knows something about floods. In 1993, 1995, we had hundred year floods, we had devastation throughout. We had to fight an Administration then who didn't even want to rebuild the levees. At least now I think you have the Federal Government understanding that levees save lives, protect billions and billions of dollars of property loss that otherwise would occur. We want to work with you to make sure that you get those levees.

I know that EDA is going to come through with help in grants and our good friend, the Commissioner of Public Buildings in GSA is probably going to be building some great new public monuments and replacing them, although I understand many of them came through unscathed. I served as a clerk on the Fifth Circuit Court of Appeals in 1963 and 1964, and admired that New Orleans courthouse for the Court of Appeals.

I think there are some very tough decisions that have to be made and we are being asked to foot a very significant Federal bill. We want to make sure that the planning is done properly and there is a means of enforcing it. As one who has done a lot of work and had to move people out of flood plains in Missouri where they had been flooded, the city of Plattsburg, and I could go down the list, the city of Times Beach.

We moved them out of the flood plain. Does it really make sense to put poor people 20 feet below sea level? No matter what kind of levee you build, what makes sense? OK. I think it makes sense, certainly there is an area of New Orleans that was not flooded that needs to be protected. Can we protect all of the outlying areas of New Orleans with a Category 5 levee?

This is something that needs to be decided in cooperation between the local officials and representatives of the Federal Government that are going to have to pay for it. I had a very disturbing conversation with a friend I had known 40 years ago who grew up in New Orleans, a dedicated person who loves New Orleans. He said, our biggest problem is we can't have any effective land use planning. We try to develop a land use plan and somebody goes to the local city councilman with some means of persuasion, I will not get into what that is, and they get a variance.

If we are going to be making these major investments in New Orleans, is there going to be a system which is thought out and takes into account all the interests of stakeholders, the protection of the people who are there and that can and will be enforced? With the kind of Federal investment we are making there, I think we have to be sure that we are not putting people needlessly at risk.

There is a lot that we have learned from this disaster. Unfortunately, we have had the privilege of learning from other disasters, and I am one of those who can say I had the experience, experience being what you get when you expected to get something else, helping my State recover from the disastrous floods 12 and 10 years ago.

I sympathize with you, I am going to work with you, but we, and I think you have been a very responsible voice, and we need to have a responsible plan that comes with the major input from the people who live there, live in New Orleans, but with a guarantee that there are going to be limits and restrictions placed on development so that we protect what we can and make other provisions in other areas.

I'm sorry, I have another meeting to go to, but as one who chairs the subcommittee that handles WRDA, we hope we can work with you and pass a WRDA bill that doesn't have any more restrictions on it, that recognizes that building levees saves lives. Had we built one in New Orleans, we would have saved a heck of a lot of money.

Building levees should not be a sport just for more legal red tape and lawsuits.

Thank you, Senator, and best wishes.

Senator INHOFE. Thank you, Senator. Now we will hear from our first panel, starting with Dr. Nils Diaz, Chairman of the U.S. Nuclear Regulatory Commission.

Dr. Diaz.

STATEMENT OF HON. NILS J. DIAZ, CHAIRMAN, NUCLEAR REGULATORY COMMISSION

Mr. DIAZ. Thank you, Mr. Chairman. It is my privilege on behalf of the Nuclear Regulatory Commission to discuss our preparations and response to Hurricane Katrina and the results of the combined efforts of NRC licensees, our Federal and State partners, and the NRC in protecting public health and safety, the environment, and the common defense and security. My full testimony, Mr. Chairman, with an actual, factual NRC time line for the Hurricane Katrina activities, has been submitted for the record.

I will start at the end, Mr. Chairman. The three nuclear powerplants affected by Hurricane Katrina along the Gulf Coast are safe and secure and were safe and secure throughout the period of concern. The radioactive sources under Agreement States' authority or directly under NRC authority are safe and secure. The well established and frequently tested capabilities of the NRC, our Federal and Agreement States partners, and our licensees were exercised and proved to be effective during Hurricane Katrina.

Our emergency preparations are always focused on three distinct protective actions: prevention, monitoring, and mitigation. In the particular case of hurricanes, prevention through preparedness has been effective to date and we will continue to stress full preparedness.

We continue to assess new lessons learned from Katrina and other hurricanes. These will be taken into consideration to make our capabilities and those of our licensees even better. Communications is one of those key areas that we are working on for further improvement. At the same time, we will be working in cooperation with Federal and State agencies to further improve preparedness capabilities in NRC's areas of jurisdiction.

Mr. Chairman, of primary concern in NRC emergency preparedness activities are the nuclear powerplants. We take this very seriously, because of their importance and because of their complexity. On the other hand, we have the advantage of many years of practice. Practice makes better. At specific locations with well-known characteristics and capabilities, of the 64 power reactor sites in the country, about half need and have specific emergency procedures to deal with hurricanes because of their locations. Through the years, these capabilities have been exercised, and recently they have been exercised often.

Radioactive sources, typically sealed and in devices, present us with a different challenge in variety and location, but they do have lesser risks. I must acknowledge at this point the tremendous support we have received from the State and Federal authorities in establishing the safety and security of radioactive sources.

Mr. Chairman, I would like to recognize the effort's by NRC licensees, local, State and Federal law enforcement officers, and the National Guard to provide the vigilance and support to maintain the safety and security of nuclear powerplants and radioactive sources in the States affected by the hurricanes. I also want to recognize the efforts of many, but especially DHS/FEMA, in promptly evaluating off-site emergency preparedness and response capabilities for the nuclear powerplants after the hurricanes passed, to allow those plant sites to return safely to service and provide electricity to affected areas.

These joint NRC–FEMA and reactor licensees' efforts were used for Hurricanes Katrina, Rita and now Wilma. The affected powerplant sites in Florida and along the Gulf Coast have resumed supplying electricity to support recovery of the regional infrastructure.

Last but not least, I want to recognize the discipline and consistent work of the NRC staff to prepare for and discharge emergency activities for every national disaster that has threatened our licensed facilities, including Hurricane Katrina. Our preparations and rigor have paid off.

Again, I thank you. I will be pleased to answer your questions.

Senator VITTER. Thank you, Dr. Diaz, very much.

Next we will hear from Mr. Sandy Baruah, Acting Assistant Secretary of Commerce, for the Economic Development Administration.

STATEMENT OF SANDY K. BARUAH, ACTING ASSISTANT SECRETARY OF COMMERCE FOR ECONOMIC DEVELOPMENT ADMINISTRATION

Mr. BARUAH. Senator Vitter, thank you very much. Let me thank the Chairman and the Ranking Member and the members of this committee for having me here today.

This is a timely matter for me to comment on, as I have just returned from Louisiana. Yesterday along with the Director of the Minority Business Development Agency, I saw first-hand the devastation to the great city of New Orleans. In addition, I visited at length with the Mayor of Baton Rouge and others from the region. It is exceptionally clear to me, Senator Vitter, that our Nation faces an unprecedented challenge but a unique opportunity to recover from this terrible natural disaster.

The Administration, the Department of Commerce and the Economic Development Administration are committed to the economic revitalization of the Gulf Coast. As you are aware, President Bush has called for an unprecedented effort to promote the region's recovery and economic revitalization. The focus of these efforts is to implement a regional, collaborative, multi-pronged approach aimed at providing appropriate incentives and targeted Federal investments to create the conditions in which the private sector can confidently again invest in the region's economic recovery.

While we are not here today asking for additional funding, we will be participating in the recovery efforts using our existing human and financial resources. EDA is proud to be a supporting player in the Federal effort to get people back to work and businesses, both large and small, back on their feet.

EDA has a long history of supporting proven and effective long-term recovery. The Agency has played varying roles in most of the major natural disasters over the past 40 years. Additionally, under the National Response Plan, EDA represents the Department of Commerce as a primary agency in Emergency Support Function No. 14, which focuses on long-term community recovery.

Of course, EDA over the years has accepted several mission assignments from FEMA, including for Hurricane Katrina, and we are pleased to support FEMA's lead role in these recovery efforts.

One of the nice things about being part of the Commerce family is our sister agency, NOAA. Because of NOAA's good work in this year and years past, we were able to anticipate the active hurricane season that we have just witnessed. Under the direction of Secretary Gutierrez, EDA began to prepare to support economic recovery efforts prior to Katrina's landfall. In the days following the hurricane, Secretary Gutierrez announced grants to the States of Louisiana and Mississippi for $4 million for each State and two additional grants for $450,000, and $390,000 to Alabama for immediate economic planning purposes.

In addition, we immediately established an internal hurricane recovery task force and began to make our regional staff available to the Governors of Louisiana, Mississippi and Alabama. As the recovery efforts progress, EDA will continue to leverage our available resources for the purposes of effective revitalization efforts that result in real, meaningful and long-term economic impacts.

EDA designs its investments to ensure significant leveraging of private sector resources. Because even in situations like this where the Federal Government plays an important and major role, at the end of the day, it is the private sector's ability, ability and willingness to invest in a region that is the key factor for creating job opportunities and long-term economic growth.

Additionally, the Bureau will work closely with the Office of Inspector General with regard to the award and administration of all Katrina-related disaster recovery funds. EDA views the Office of Inspector General as a valuable partner.

While it is important that Federal, State and local governments move smartly to address immediate needs, economic revitalization efforts must be based on a sound economic development strategy. To this end, it is important to work not only with State and local officials, but also with the region's business leaders. Business leaders and private and public sector officials must share a common vision for the rebuilding of the Gulf region in order to ensure maximum effectiveness.

EDA is proud to play a supporting role in the coordinated Federal response to this unprecedented natural disaster. Thank you for your time. I appreciate the opportunity to be here today.

Senator VITTER. Thank you. Next we have the Hon. Dale Hall, Director of the U.S. Fish and Wildlife Service.

STATEMENT OF HON. H. DALE HALL, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

Mr. HALL. Thank you, Mr. Chairman, Senator Isakson, members of the committee. It is a real pleasure for me to be here today.

Along with my written testimony you have in front of you a handout with some slides in it that you might like to peruse as we go through.

It truly is a pleasure to be here, because even though our hearts are broken over the tragedy and the devastation of the storm, our hearts are also uplifted by the story I have to tell you now about the response of the Fish and Wildlife Service employees to try and help their neighbors and friends.

At the initial response after Katrina, within 24 hours, we had people on the ground helping to rescue and take people out of harm's way. Within 4 days, we had a full service command center set up at Big Branch March National Wildlife Refuge, just outside of Mandeville, LA and about 25 miles north of New Orleans.

Our people provided assistance in rescuing over 4,500 people during the aftermath, cleared 14½ miles of roads, 10 miles of fire breaks, more than 300 driveways and 4 major parking lots so other command centers could be set up. We conducted reconnaissance on 65 miles of roadways covering more than 100 streets, so that the people could return to their homes.

In all, more than 600 of our employees worked in the aftermath of Katrina and did shifts at Big Branch Marsh National Wildlife Refuge, where we provided food, shelter, water, fuel, showers, laundry and other facilities to the workers on the ground besides our own people, the American and International Red Cross, National Guard, U.S. Immigration Service, Customs Service and FEMA personnel.

We served over 25,000 meals to Louisiana workers and to the people at the Louisiana Heart Hospital, 3,600 showers and 1,900 loads of laundry. That may not sound like the earth-moving activities that one would expect, but to the workers those showers and those clean clothes meant an awful lot.

The resources that were impacted were significant. I would like to add a little note here, that there was a personal note for me. My wife's family is from Louisiana. She is from Bunkie. I have relatives in Mandeville and my daughter was a nurse at Memorial Medical Center. She was stranded inside the hospital for 4 days until officers from the Louisiana State Police, the Texas Parks and Wildlife Department and U.S. Fish and Wildlife Service rescued her and the remaining members of the medical staff and several patients that were left in there. So this is close to me in many ways.

When we look at our other family, the Fish and Wildlife Service family and our lands, Breton National Wildlife Refuge has lost over half of its land mass. We have had over 150,000 acres of coastal marshes impacted, and that impacted sea turtle nesting and red-cockaded woodpecker. The timber has been blown over to a significant level. Sixteen National Wildlife Refuges were closed during the aftermath.

As a response to this, the Administration has asked for $61 million to help us repair and rebuild some of those structures. Prior to Katrina, coastal wetland loss in Louisiana was about 24 square miles per year. Those marshes provided a lot of benefit to the people, to their protection, to their economy, to their culture.

We believe that one of the strongest things that we can do is actually recognize the role that those coastal wetlands play in buffering storms and in slowing down the wind and the storm surge in particular. The coastal marsh restoration and rebuilding should be highly considered as part of the storm abatement project, right along with levees and other flood gates and structures, because those structures can help protect the protective measures as well as the people that sit behind those.

In closing, Mr. Chairman, there is no way that I can tell you here today how proud I am of the response of our employees. Twenty-one of our people lost everything that they had, and yet the very next day, they were up at Big Branch Marsh saying, what can I do, and they continued to work throughout the aftermath to help everyone else. That is the kind of dedication that came from the people in the Fish and Wildlife Service and the other agencies to respond to this and do what we could to help our neighbors.

Thank you, Mr. Chairman, Senator Isakson, and I look forward to answering any questions you may have.

Senator VITTER. Thank you very much, Director Hall.

To round out Panel I, we have Mr. David Winstead, Commissioner, Public Buildings Service, General Service Administration.

STATEMENT OF HON. DAVID L. WINSTEAD, COMMISSIONER, PUBLIC BUILDINGS SERVICE, GENERAL SERVICE ADMINISTRATION

Mr. WINSTEAD. Good morning, Mr. Chairman, Senator Isakson, members of the committee. My name is David Winstead, and I am Commissioner of the Public Buildings Service with GSA. I thank you for inviting me here today to respond to your questions on Hurricane Katrina and the follow-up recovery efforts. I would ask that my written statement be made part of the record.

GSA, as you know, manages a diverse portfolio of real estate for the Federal Government, over 340 million square feet of space in office buildings, courthouses, border station warehouses and other facilities. We serve nearly 60 agencies over 400 bureaus, the U.S. courts, Congress and house over a million Federal employees. We really view ourselves at Public Buildings Service as sort of mission enablers, providing the work places solutions for the Federal agencies.

This year has obviously been a challenge for all of us. Six hurricanes have struck the United States. We have seen all the news on Hurricane Katrina, Rita, and Wilma and I am sure, Senator, you have great first-hand experience. Actually, my family is from New Orleans, my mother's family, so I have been down there as well.

While all these impact our customers and our real estate assets in the Gulf Coast region, Hurricane Katrina was obviously the worst. The impact zone was 200 miles wide, ranging as far as Louisiana and as far east as Florida, north to Kentucky and spanning two GSA regions. I am very pleased this morning to have two people that were instrumental in our response, both in Region 4, in Florida, Alabama and Mississippi, Tom Walker, behind me, who headed up that effort, and also in Region 7, which is Louisiana-Texas, Jim Weller, who was very active down there in Louisiana.

Also Bill Matthews, who is the Assistant Commissioner for Office of Real Property Asset Management here as well.

In the face of this unprecedented demand created by these three hurricanes, GSA's first priority was to support FEMA. We provided and continue to provide communications support, emergency relief supplies, facility space, office equipment and contracting services. The level of support required of GSA has been greater than we have ever experienced. The hurricanes posed two additional challenges to the PBS, and that was to provide space and continued service to our Federal customers' employees, and to safeguard our real estate assets.

To meet these two challenges, GSA drew from an extensive experience of professionals in our property management field, leasing, architectural and engineering disciplines. The GSA hurricane response strategy was developed from lessons learned by our well-practiced regional associates in our regions who have been very active, both in Regions 4 and 7, and also have been aided from our central office here in Washington.

The strategy has comprised both advance preparation, looking at storm patterns and buildings that were being threatened, customer communication and 24-hour hot lines, damage assessment, returning customers to operational facilities as soon as possible, and returning owned and leased property to operational status. This last step may be as simple as obviously waiting for the area power to come back on or as complex as both repairing or completely replacing facilities or find other lease options.

We begin our advance preparation once the National Weather System projects a hurricane, buildings located within the path are identified and reviewed, preventive actions are taken, daily conference calls and readiness occur and regional personnel follow the direction of local officials regarding evacuation. Preventive actions include testing and obviously fueling generators, inspecting and securing building components, shutting down building systems where possible, placing sandbags where appropriate and boarding up lower levels of multi-story buildings.

I would comment in the case of Hurricane Katrina, when the storm surge was predicted for Gulfport, MS, the first three floods of the Dan Russell Federal Building and Courthouse were boarded up at an expense, and this was predicted, and we did this in advance as a preventive measure, and the overall cost was $20,000. But the investment saved the Federal taxpayer an estimated $1 million in projected damage had that action not occurred.

To maintain our communication with our Federal employees and customers about their buildings, we establish hot lines and Web sites. Our command structure and rapid response teams are described more fully in my written statement.

In terms of our real property assets, GSA suffered no catastrophic losses due to Hurricane Katrina. Damages included power outages, water intrusion, power distribution equipment damage, limited structural damage, mold buildup, broken windows and related activities. Of the 42 Government-owned locations the most substantial damage occurred in New Orleans where buildings withstood obviously wind and severe water floods.

This is a testament to the design and construction of our building inventory, both in terms of our older and more historic buildings, such as the New Orleans Federal Custom House as well as the new Federal Building, which I mentioned, which is the Dan Russell Federal Building and Courthouse in Gulfport.

In contrast, the leasing inventory fared less well with damages ranging from total loss to minor repairs. About 12 to 15 leases may require us to terminate the lease. Within the GSA-provided space, there are approximately 2,600 Federal employees and 28 Federal agencies that have been impacted. To date, all customer agencies are operational and as of October 27, 3 Government-owned and 33 leased facilities, for a total of 36, remain closed as a result of the storm. But these are now being addressed on follow-up action.

I know I am out of time here, Senator. I would be happy to answer any questions.

Senator VITTER. Thank you very much, Mr. Winstead.

We are also joined by Senator John Warner of Virginia. I want to welcome the Senator and invite any opening comments.

OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE COMMONWEALTH OF VIRGINIA

Senator WARNER. Thank you, Mr. Chairman. First I would like to commend you for your industrious efforts on behalf of not only Louisiana but the whole belt that suffered, the whole belt of States there. Mr. Chairman, I think it is also important that your work to persuade the President to, as we announced this morning, to have this new individual who becomes, through Mike Chertoff, the focal point.

I also want to thank the Mayor, who will soon be before this panel. I was privileged to come down with a group very early on, and I remember sitting in that room and listening to you and your colleagues. I think history will have to record who did what when, why and so forth. But we have to go forward.

I was much impressed. I watched carefully the television, as others, about individuals. One fellow got up this morning and he said, "you know, if we could just get the Government out of my business, I could have this trailer park up and these people would be in here over the weekend." I think we need to look at those options.

I commend you, Mr. Chairman, for your work.

Senator VITTER. Thank you, Senator.

I will kick off the questioning. I wanted to first ask all of you a follow-up to Senator Warner's comment. As you know, yesterday the Administration announced the appointment of a single Federal point person, a Federal coordinator for reconstruction and recovery in the entire devastated region. That is going to be Don Powell, who has been serving as the chair of FDIC.

I want to ask you three things. No. 1, have you received, in your agency, specific information about the creation of that position? No. 2, have you made plans to brief Mr. Powell about how you fit into the puzzle on the Federal side? No. 3, how do you think your response in terms of this recovery effort needs to change in light of this single Federal point person? How will that change the way you do business day to day as part of the ongoing recovery effort?

We will just go from my left to right.

Dr. Diaz.

Mr. DIAZ. Thank you, Mr. Chairman. We have just received the normal amount of information, both by the press and by our normal internal communications. But nothing really significantly specific that we can move on. But we of course will be ready to brief and have been always ready to brief our Federal counterparts.

We do not believe that our response will change significantly. The reason is that we really have a very distinct advantage, because we have been doing this for so many years. We already know who we need to be in contact with, when we need to be in contact with them, how we need to be in contact with them. So we have very, very localized assets that are able to be quickly deployed to areas for which we know where they are, we know what the problems are, we know what the characteristics are.

We actually have been for many, many years exercising with FEMA, and with the States, to be able to provide not only the preparation that is needed but the support. There would be one area that I think we would emphasize when the integration takes place, and that is the area of communications. We do believe that we can enhance and should enhance our communications, and that our partners, both the Federal, State and local agencies will probably benefit from enhanced communications.

Senator VITTER. Mr. Baruah.

Mr. BARUAH. Mr. Chairman and Senator Warner, we certainly welcome the appointment by the President of Don Powell. We did receive notification from the White House of his appointment and what his role will be.

Regarding briefings for Mr. Powell, Senator, we will do that as part of the whole Department of Commerce. That will probably be led by our Deputy Secretary. We will brief as requested as a Commerce unit, and so we are briefing in the total package of what the Department of Commerce has to offer and what our capabilities are.

Regarding how EDA specifically will change our activities, my answer is hopefully not a great deal. What I mean by that is hopefully that we would always be working in a coordinated Federal fashion anyway. But with the appointment of Mr. Powell, I think we will wait and see and certainly take direction from him in his new role as to how we should best respond.

I think it is very important, the way we look at disaster recovery at EDA is not that EDA has to be all things to all people. We look at it very much as we are a piece of the puzzle, a piece of the Federal puzzle. Just because we don't do everything, there are others that are doing things, and we can support that and we play a very specific role. So we certainly welcome an overall coordinating aspect to the Federal effort.

Senator WARNER. Mr. Chairman, if I could interject.

Senator VITTER. Sure.

Senator WARNER. I think it would be wise if the committee, and I am sure the Executive Branch would provide the committee with exactly how this communication came, because we should then learn from that more about the description and the powers.

Senator VITTER. Absolutely. I think it took the form of two Executive orders, so we need to get those.

Senator WARNER. I think that would be good. I must say, Mr. Baruah, your metaphor, Federal puzzle, is an interesting one. I will have to think about that a little bit. I like that.

[Laughter.]

Senator WARNER. Thank you very much.

Senator VITTER. Mr. Hall.

Mr. HALL. The whole activity of post-storm is being actually worked out of the Secretary of the Interior's office. We provide input and information to them. I have not, at the Fish and Wildlife Service, received specific instructions, because I don't know exactly if I will be or our Agency will be directly working with Mr. Powell. But we assume the Secretary's office will.

The briefings that we will be doing are feeding the U.S. Geological Survey, and we are the two primary agencies in the Department of Interior that have been working down there, USGS from their coastal information and we from the refuges and our work down there.

How it would change our approach, it probably won't. As I stated in my testimony, we tried to lead, follow or get out of the way, depending on what the circumstance called for. If they needed us to get into airboats and go rescue people, then that's what we did. If they needed us to take chainsaws and clear driveways to help the community rebuild, then that's what we did. If they needed us to feed people, that's what we did.

We think that we work with the communities and the other agencies in a very effective manner already. But if there are ways that we can improve, we will certainly try and find those.

Senator VITTER. Mr. Winstead.

Mr. WINSTEAD. Mr. Chairman, likewise, the Public Buildings Service in GSA, David Bibb, our Acting Administrator, myself and other commissioners are aware of this appointment. We will continue to work, obviously in coordinating in this uniform effort. I don't think it will change a lot in terms of our support both at PBS and GSA and FEMA. But we are going to, our established communications will continue with Mr. Powell. We look forward to meeting with him very soon to offer up both our procurement support as well as our expertise in Region 7 and Region 4.

Senator VITTER. All right. I want to recognize Senator Jeffords, the Ranking Member of the committee, from Vermont. Senator, thank you for being here, and please, if you have any opening statement or questions for the panel or both.

Senator JEFFORDS. Thank you very much.

I have followed with interest your efforts to assist. I think you deserve a great deal of credit for what happened.

I ask unanimous consent that my full statement be made a part of the record.

Senator VITTER. Without objection.

[The prepared statement of Senator Jeffords follows:]

STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Good morning. Mr. Chairman, I want to thank you for holding today's hearing, which is part two of the oversight hearing we held on October 6 with the EPA, Army Corps, and Department of Transportation as witnesses.

Hurricanes Katrina and Rita have had a devastating impact on the Gulf Coast of this Nation. It is critical that we do everything that we can to improve the lives of our fellow Americans whose lives have been uprooted.

The Agencies within this committee's jurisdiction have a major role in both the response and the recovery operations for Hurricane Katrina.

I want to extend a welcome to New Orleans Mayor Ray Nagin. It is imperative that we hear your views on the actions of these agencies in response to Katrina, and I am pleased that we will get your perspective.

Mr. Chairman, I am going to take a few minutes to address how we got here and give some context to today's hearing.

Over the last 200 years, we have moved from an ad hoc approach to disaster response to a coordinated, orderly approach.

On September 11th, the Nation was struck by a terrorist attack. The effectiveness of FEMA helped reduce the impact of those events. After September 11th, the Department of Homeland Security was formed.

In what I believe is an example of extremely poor judgment that failed to take into account FEMA's role in responding to natural disasters, FEMA was moved into the Department.

With Katrina, I believe that we witnessed the degradation of our national response system as a result of that change.

As Congress determines what the next steps are, we must ask ourselves are we witnessing a performance failure by the Federal agencies to execute their authorities, or, are we missing needed authority? I believe we have witnessed a performance failure.

In the wake of this performance failure, Congress is stepping in. There have been about 50 Katrina-related bills introduced.

I am concerned that we are returning to the "ad hoc" response to disaster that the Stafford Act was designed to prevent.

We need to return some order to our disaster response capabilities. In the short term, we need to be sure that Katrina recovery proceeds in a sensible manner, given what has occurred to date.

On October 6, I joined my colleagues on the minority side of this committee in introducing S. 1836, the Gulf Coast Infrastructure Redevelopment and Recovery Act, to respond to Hurricane Katrina.

Our legislation will provide direction to those agencies in our jurisdiction to ensure that Katrina recovery happens quickly, protects public health and the environment, and uses federal funds wisely.

In the long-term, we need to move FEMA out of DHS. I am an original cosponsor of Senator Clinton's bill to do just that. I hope the Congress moves quickly to adopt both proposals.

My questions in today's hearing will focus on three issues. First, in the apparent chaos of the response to Hurricane Katrina, what needs to change in the federal response?

Second, as we move into the recovery phase, what are the needs, what are the priorities, what plans are in place, what is lacking?

Third, do these plans make sense for the people of the Gulf Coast?

I look forward to hearing from each of you today. Thank you, Mr. Chairman.

Senator JEFFORDS. Mr. Chairman, I understand that the NRC had very good information from communications with the powerplant licensees during Hurricane Katrina. I know accounting for and securing the most diffuse licensees, such as universities, medical facilities and industrial sources is a significant challenge.

How long did it take NRC to be able to determine that nuclear materials held by non-powerplant licensees were secure?

Mr. DIAZ. Thank you, Senator Jeffords. We actually relied on our Agreement States licensees and our Federal partners on the issue of securing the sources. What happened during Hurricane Katrina, like it happens with many other industrial concerns, was that some of them were very well prepared; others actually had to leave the sources in place and abandon their facilities. That happens in different places.

However, we, before the hurricane struck, actually were dealing not only with FEMA, and with the State, in making sure that we

would establish communications with the licensees. It took us several days to establish where all the sources, the major sources were. We did put into place a combination of Federal and State efforts, led by the State, to make sure we identified where the sources were, we identified that their sources were appropriately not only accounted for but secure.

We eventually used Federal assets to fly over the area with the cooperation of the Department of Energy to locate and make sure that the major sources, what we call Category 1, Category 2 sources, were in these places. We then provided assistance to the State, actually went physically there, and provided assistance to States to make sure that all the sources were accounted for. I can tell you that all the sources that are the major radioactive sources have been accounted for. We have received absolutely no reports of any problems with any sources.

Having said that, Mr. Senator, we did learn from it. By the time that Hurricane Rita was coming over, instead of acting just before and after, we acted significantly ahead of the hurricane. We did the same with Hurricane Wilma. I would like to say, in the State of Florida, 48 hours before Wilma was to hit the State of Florida, every licensee has been contacted and the State of Florida, with our support behind the lines, established ways of ascertaining, after the hurricane, where the sources were, and how the sources were.

So we could have done a little better, but we did what we knew how to do at the time. We did learn from Katrina, and the States learned from Katrina. I can tell you that right now, we are much better prepared to take care of and account for all the radioactive sources in the States of the United States.

Senator JEFFORDS. Thank you.

Mr. Hall, I understand the Fish and Wildlife Service has damage estimates for the structures at the refuge in the areas impacted by Katrina and Rita. But how will you assess the damage to the habitat and the wildlife and when will that be completed?

Mr. HALL. We are actually underway right now to try and get a handle on what happened, what actually happened to the habitat. Spartana Marsh was blown over and just inundated with heavy saltwater and a lot of that is dying. Some of this will be easy to see right away. When windblows come through and whole forests are blown over, then you immediately know what happened.

Some of the salt blow-ins from the storm may take a little bit before we can actually see the death of the marsh. We can already see significant areas that were marsh that are now open water, that were forests and are blown over. We are underway right now trying to make that assessment. We know that on our National Wildlife Refuges alone that over 150,000 acres were impacted. We want to try and get a little better grip and certainty on the numbers before we come back and try and answer exactly how much.

Senator JEFFORDS. Thank you very much. Thank you, Mr. Chairman.

Senator VITTER. Thank you, Senator.

Senator Isakson.

Senator ISAKSON. Thank you, Mr. Chairman.

Mr. Diaz, thank you for the great report. You don't hear all the good news that comes out of tragedies, but to know that our nuclear facilities were all safe and unharmed is a great credit to you and your agency. The same to Mr. Hall, the success story and the response attitude, lead, follow or get out of the way, your agency did a great job in that. I wish everybody had done the same, but you did a great job with that.

Mr. Baruah used a term in his written statement, and I think I heard it a couple of times in his public statement about, talking about the near-term, responding in the near-term to the aftermath of Katrina. I would like to focus a little bit on the long-term. I will start with you, Mr. Hall.

It seems to me the decisions that are ultimately made by the Corps of Engineers are going to have a huge impact on the overall plan for everybody else, am I correct?

Mr. HALL. Yes, sir.

Senator ISAKSON. In fact, I remember talking to Senator Vitter when we first arrived here together. I have a little bit of an investment in New Orleans, I sent most of my money and my children to Tulane and went on my honeymoon there. So I have a special place for the Maison d'Ville and for Tulane University.

But my concern as a former real estate developer in looking at the absolute tragedy is that this is not a chicken or egg thing. The thing that comes first is what the Corps decides to do, both with regard to the estuary as well as the port facility, which is the huge facility that is the economic engine of the city, and to a large measure, to the redevelopment of the city of New Orleans itself.

Do you have any comments on that?

Mr. HALL. Well, we will be, I think you are on target. As I said in my opening statement, I believe very strongly that in order to reach a Category 5 protection level, we have to have coastal marshes out there helping to slow the storms down before they ever reach the structures.

In my view, and I am not an expert on the engineering and hydrology, but in my view, it is the coastal marshes that protect the levees and it is the levees that protect the people. If we want a long-term look at how to make sure that we are prepared for the structures and the investments that we make, we need to look at all of the potential protective mechanisms. Those marshes that have been going away at the rate of 24 square miles a year before Katrina I think probably had an impact on how well the storm was abated.

Senator ISAKSON. Please correct me if this is not a correct statement or semi-accurate statement, but failure for us, let me take that back. To redevelop in the absence of knowing what the decisions are on the Corps and on the infrastructure would be a serious mistake, wouldn't it? To redevelop?

Mr. HALL. Well, I would certainly hope that we have all the facts before we make any decisions.

Senator ISAKSON. I guess the other point I would make, and I know the distinguished Mayor of New Orleans is here and we are going to hear from him, but one of the things also, sometimes great things come out of abject tragedies. Certainly the tragedy in New Orleans is huge.

Redeveloping can be a renaissance. But it also might need that the redevelopment doesn't necessarily totally take the form, the location, the place of what it is replacing. That is one thing that I hope all of you will do in coordinating with Mr. Powell. We want to make sound investments for the future, so when the taxpayers' money is invested, it is invested in improvements, capital improvements that are built in coordination with an infrastructure plan and a Corps analysis that this type of tragedy couldn't happen again to those same redeveloped investments, if I am making myself reasonably clear on that.

Last comment, I want to commend the Economic Development Administration. The key statement that you made, sir, was that the key is the investment of the private sector. If we do smart work on the infrastructure and Government is a catalyst for private sector investment, then the long-term future of New Orleans will be better off than if Government considers itself the key to long-term investment.

Thank you, Mr. Chairman.

Senator VITTER. Thank you, Senator, and I certainly want to echo a lot of your comments. The Corps does need to lead the way in terms of that protection plan and for that very reason. If we go back to the old time table and the regular order in terms if big Corps projects where this wouldn't be done for 20 years, the whole redevelopment is dead in the water for that very reason. So this committee has to play a crucial part in streamlining that process so we can figure it out and have a model and move forward on it in a fairly timely way.

I just want to have one more round of questions. First of all, I know that Chairman Diaz has a flight to catch for a meeting. So I want to thank him now for attending and participating in the hearing. Thank you very much, Chairman.

Mr. DIAZ. Thank you, Senator.

Senator VITTER. I wanted to follow up with Mr. Winstead in particular. In your testimony, you state that as of October 27, 3 Government-owned buildings and 33 leased locations remained closed as a result of Katrina. What is the total universe of which that is a subset, No. 1, and No. 2, what are the plans to get those buildings, 3 owned, 33 leased, back up and running and open? What is the time table for that?

Mr. WINSTEAD. Chairman, within Region 4 and Region 7, we now have the 36 closed buildings remaining as a result of Hurricane Katrina. We are now in the process, through our offices in the regions to get them open over the next number of months. I think they are moving as quickly as they can to make sure that any mold issues and other damage issues are cleaned up as effectively as possible.

Senator VITTER. Is that just the owned side or is that the owned and leased side?

Mr. WINSTEAD. Both owned and leased, there are about, as I mentioned in my testimony, about 12–15 leases that were so severely impacted that termination may be necessary. Some of them are still being negotiated because the leased space is still not suitable. So we are working quickly to find optional available space.

But we are trying to get them back into those buildings after the landlords clean them up.

Senator VITTER. So based on that, is it fair to say within 2 to 3 months most of that will be resolved and reopened?

Mr. WINSTEAD. Senator, I think that is accurate. Jim Weller is here, but we will get for the record actually when those remaining spaces will be completed. But I think it is within that period of time. That is correct.

Senator VITTER. OK. Also, I think you have said that your initial GSA damage estimates were $60 million for total capital repair and replacement costs and $15 million for additional operating costs.

Mr. WINSTEAD. That is correct.

Senator VITTER. Is that your current estimate?

Mr. WINSTEAD. That is correct.

Senator VITTER. The $15 million for operating costs, what does that mean, additional operating costs?

Mr. WINSTEAD. In terms of restoring the space to full operations in terms of equipment that has been damaged, and in terms of obviously the repair work needed on the buildings themselves.

Senator VITTER. I guess I would consider that on the capital repair and replacement side. So I am not sort of understanding the distinction. Wouldn't that go to the $60 million capital repair and replacement?

Mr. WINSTEAD. It is $60 million in terms of repair as well as operating support for getting the tenants back into the space. That is $15 million more on top of the $60 million.

Senator VITTER. OK. What is operating support as opposed to repair, replacement, infrastructure replacement?

Mr. WINSTEAD. It basically includes all the—Jim, do you want to comment?

Mr. WELLER. The extra $15 million is focused on 24-hour operations to super-cool the buildings, to the additional staff we have had to bring in to maintain that and operate those buildings during the initial recovery effort.

Senator VITTER. OK. That's all the follow-up I had. Senator Jeffords, do you have any additional questions?

Senator JEFFORDS. Yes, I do. Mr. Baruah, in your testimony you state that the Administration is not seeking additional funding for EDA to help rebuild the Gulf Coast. Given the scale of the economic development needs in the affected areas, I find this difficult to understand. Don't you think EDA could add more jobs and generate more economic activity if greater resources were brought to the table?

Mr. BARUAH. Senator Jeffords, EDA has played various roles in disasters over the last generation. Since 1969 we have spent roughly a half a billion dollars in disaster recovery situations. But they have ranged from very large engagements such as in 1992, Hurricane Andrew, when EDA had $70 million in supplemental appropriations for the purposes of helping to rebuild Florida after Andrew, to just last year, when Florida was hit by a series of four hurricanes in a row, EDA did not receive special supplemental funds for disaster recovery. But we did use existing regularly appropriated funds, and we worked very closely with Governor Bush's

office and the folks from Florida and were quite effective using our normally appropriated funds.

So again, we view ourselves as part of a larger puzzle. We will play the role that we are asked to play by, obviously, the White House and the Congress.

Senator JEFFORDS. Mr. Winstead, can you comment on how the GSA's ability to respond in a disaster would be altered if you had the authority to enter into emergency leases up to 5 years rather than 180 days under the current authority?

Mr. WINSTEAD. Senator, I think our ability to respond with the current leasing authority has been good in terms of the operations and backing up FEMA. Obviously the new bill that the Chairman has introduced would modify that authority and allow entering into emergency leases for major disasters. It would help facilitate responding quicker. I think that our agency is now looking at that as this bill has been introduced. So I think it would aid our efforts in responding quicker.

Senator JEFFORDS. Thank you. Any other comments?

Thank you, Mr. Chairman.

Senator VITTER. Thank you. I know Director Hall has a meeting with the Secretary and needs to be excused, so I will do that now, and thank you, Director, for being here.

Senator Isakson, do you have any follow-up?

Senator ISAKSON. Just one quick question of Mr. Winstead. Do you have, does GSA have any responsibility over Stafford Act requirements of the Federal Government in terms of infrastructure replacement that is nonfederal in nature?

Mr. WINSTEAD. Senator, I am not absolutely sure of that, but I can get you information on the record on it.

Senator ISAKSON. I know we have some responsibility up to 90 percent of replacement in terms of some infrastructure that is either State or local and not Federal. I was just wondering if you did. That's the only question I have, Mr. Chairman.

Senator VITTER. OK. Thank you. With that, we will dismiss the first panel. Thank you very much for participating.

Our second panel is both very focused and very distinguished. It is the Hon. Ray Nagin, Mayor of New Orleans. The Mayor has been to hell and back several times since the storm. I am not sure where Capitol Hill sits on that spectrum, but in any case, welcome. We are eager to hear your testimony, Mayor.

STATEMENT OF HON. C. RAY NAGIN, MAYOR, CITY OF NEW ORLEANS, LA

Mayor NAGIN. Mr. Chairman, members of the committee, I want to thank you for inviting me here to speak to you today about the City of New Orleans, a wonderful, unique city that has had some devastation. To all the Members of Congress and especially our Louisiana delegation, I want to thank everyone for their hard work and their patience, and most importantly, for their attention to this very important issue.

I would also like to thank the American people for their compassion and generosity that they have shown our citizens who are now spread over at least 44 different States throughout this great coun-

try. You have treated our people very well, and we are eternally grateful.

New Orleans is surrounded by the greater waters of the United States. But while they provide our life blood, they also threaten our very existence. Our levees and pumps protect our city, and although these systems ordinarily meet the water challenges facing us, Hurricanes Katrina and Rita changed lives forever in New Orleans.

As you know, on August 29, 2005, Hurricane Katrina devastated the city of New Orleans, forcing many people to flee, flooding thousands of homes and decimating many lives. Our storm protection systems just did not work well enough. The levees were overtopped and/or destroyed. All business was halted. Hospitals were closed, electricity was stopped, communication systems were nonexistent, and fresh water services were pretty much totally disabled.

Now we have a great challenge before us, ladies and gentlemen. We need to rebuild this great city. In order to do this, we need this committee's help in the combination of structural and nonstructural flood control measures.

Our first challenge is to ensure the safety and security of our citizens. The Chief of the Army Corps of Engineers has assured me that flood defenses for New Orleans will be restored by June 2006, which I might add is the beginning of the next hurricane season, to pre-Katrina levels. The Corps commander also acknowledged that this will provide little comfort in a city devastated by a storm and whose flood protection is not as strong as it should be.

Now is the time for this country to make a commitment to upgrade our levee systems and the associated protection with that. I am humbly asking for you to immediately provide the assistance necessary to protect us against a Category 3 plus storm. Immediately thereafter, follow with an upgrade to a Category 5 protection system that is world-class.

I am also asking for our drainage to be a top priority. The Southeast Louisiana Flood Control, or SELA Project, has to be finished as soon as possible. We must renovate and replace our water and sanitation infrastructures which were badly damaged.

We also need a comprehensive plan to rebuild the marshlands of southeast Louisiana, which you heard from the first panel is incredibly important.

Also with the rebuilding of our levee systems to help protect the city from a dangerous storm, we are also asking you to help us to re-establish our businesses. We must revitalize our business climate with tax breaks to help stimulate re-investment and economic development.

I am asking for the establishment of the New Orleans Katrina Tax Recovery and Jobs Incentives Zone that would include some unique incentives. First off, a 50 percent credit on taxable wages capped at $50,000 for single taxpayers and $100,000 for joint returns. In addition, a 50 percent credit based upon employer's total payroll for employees who live and work in the zone; and an income tax-free zone for manufacturing companies and a full relocation tax credit for uncompensated expenses.

These incentives would last for 5 to 7 years or until the population in New Orleans reached pre-Katrina levels, whichever comes

first. They would have a specific sunset. All we are asking you is to help us to get back on our feet and then we will take it from there.

The city understands the problems businesses face. We were forced to lay off almost half our work force in the city of New Orleans because of the total loss of all revenue streams for the city of New Orleans. We must fix the Stafford Act so governments facing crises like these have more flexibility to pay its workers and to keep critical Government services going.

I know that some progress has been made. The cap, the 25 percent cap has been raised on the CDL funds. But I must point out that the same percentage, the 25 percent, is allowed for a whole city, as someone who is hosting evacuees, there is the same percentage that a city that has lost all of its revenues. I would humbly ask you to take a look at that. Finally, our transportation systems have suffered heavy losses that will require Federal assistance to repair and replace. I would hope that we would look closely at a light rail system that would provide a very much-needed, another tool for rapid evacuation out of the city.

We are already moving to bring New Orleans back. I have a 17-member commission that we have established that has a charge of putting together a master plan to rebuild our city. Their work will be substantially complete, if not finally complete, by the end of this year, which will provide us with the guide that we need to move forward.

Each member of this commission is very diverse, and they are individuals in New Orleans who are of the highest ethics and integrity. We feel as though this is necessary.

In conclusion, we are right now facing a critical point: when businesses and residents are deciding whether to stay where they are or to come back to New Orleans. Eighty percent of our electrical services have been restored in our targeted areas, 60 percent of our gas services have been restored. Water and sewer has been restored in these targeted areas. Schools are reopening. The private sector is ready to invest in New Orleans. They need some comfort and some confidence that the Federal Government is going to provide us the assistance necessary to fix our levee systems, No. 1, so that we can move forward and be confident.

I am encouraged by President Bush's promise of Federal assistance to help us. Because we have the best people in New Orleans and in our area to rebuild our city with the partnership with the Federal Government, we can get the job done.

My administration's track record shows we understand the responsibility that accompanies significant Federal aid. We are committed to spending every penny wisely, whether it is direct funding or whether we are doing it in partnership with the Federal Government.

I want to thank you again for inviting me. New Orleans must be rebuilt. The President basically said he cannot imagine this country without a New Orleans, without its uniqueness and without its commerce. As you talk to the Commerce Department, you are going to find out just how important our port is and the infrastructure as it deals with oil and gas.

I did have the opportunity to meet with Mr. Powell this morning. I had a chance to sit down with him. I am extremely encouraged. He is a man of accomplishments. He is a man of significant integrity. We look forward to working with him and we both pledge to do whatever it takes for us to try and rebuild this great city.

I stand ready to provide whatever information, whatever support that this committee needs as we continue to move forward in dealing with this national crisis. Thank you.

Senator VITTER. Thank you very much, Mr. Mayor. We will kick off questions now.

My first question goes to the fact that I am very concerned that over time, the perception of the Katrina event sort of drifts back to, well, it was another hurricane event, it was a bad hurricane event, maybe it was on the really bad end of the spectrum, but it was just another big hurricane event. Whereas, as you and I know from being on the ground, it is really a whole other category, the evacuation of a major American city, the first time that has happened since the Civil War, first time in modern history.

Can you put some flesh on the bones of that and explain what a major evacuation this is in terms of a major metropolitan area?

Mayor NAGIN. Well, you know, since I don't get the Guiliani pass, I will try and explain it in those terms. When 9/11 happened, which was a traumatic event for the country, it only affected a small portion of New York. This event, this storm, devastated an entire city.

In addition to that, all communication networks were out. Everything was down. Eighty percent of our city was underwater. So for a number of weeks we could not communicate, for a number of days I should say, and we could not move around the city.

In addition to that, according to Admiral Allen, right before the storm hit, we evacuated 1.5 million people out of the metropolitan area of New Orleans. It was the largest, according to Admiral Allen, the largest single evacuation in this country's history. So this is just not an event where a storm comes through and blows hard and knocks down some trees and then everybody is back to normal. This is a storm that totally devastated an area.

The lingering effects of that are still being felt 9 weeks after the event. The devastation, the lost lives, we still have 361 people that are sitting in a morgue in St. Gabriel, LA, where we still have not been able to identify who they are. As of last week, we were still recovering bodies in some sections of the city.

Senator VITTER. Again, going back to the breadth and the scope of the devastation, how many of your citizens are still evacuated, dislocated, and what portion of the electricity is back, not in the targeted areas, which you mentioned, but in the entire city as we speak today?

Mayor NAGIN. Well, as far as the number of people that are back, that is still something that we are trying to get our arms around. But the last report that I saw basically said there were 150,000 people in the city on a daily basis, living and working. At night there were probably 60,000 to 75,000 people that were sleeping in the city overnight. Compare that to 480,000 people that lived in the city prior to the event.

Senator VITTER. Right. What about electricity city-wide?

Mayor NAGIN. Electricity city-wide is about 60 percent. In the targeted areas that we have, it would be everything west of the Industrial Canal to include the west bank of Algiers. In the areas where we haven't been able to get any significant power is in New Orleans East, and in the Lower Ninth Ward.

Senator VITTER. Right. One thing I hear all the time up here is real searching for a common plan and vision coming out of Louisiana. How would you see moving forward with your commission, with the Governor's separate commission and with this new Federal coordinator to sort of present a single common plan that people can embrace up here?

Mayor NAGIN. Well, you know, that is happening naturally as I can see it. Well, maybe naturally or not naturally, it depends upon your perspective. But we put together our commission, it got out front, the President came down and met with our commission and was very impressed. The Governor came out with her commission, which has some very impressive people on it also.

We have a committee structure that is set up, seven key committees. It is my understanding the Governor's commission has pretty much adopted that structure also, with the addition of two more committees.

We have also cross-pollinated each other, so I have one of my commission members who sits on her commission and vice versa. We are in regular communication.

As I mentioned earlier in my testimony, I met with Chairman Powell. I am really encouraged by his knowledge of what is going on and his sense of how he could fit in and how he could help to drive what is going on in our region as far as the rebuild. More importantly, how we can do it at the highest level of integrity to make sure that this country is comfortable that the money and the investment that they make they will get a good return on that.

Senator VITTER. All right. Thank you, Mayor.

Ranking Member Jeffords.

Senator JEFFORDS. Mr. Mayor, I know you are working hard to balance the need for people to return and the need to ensure that the environmental hazards, such as toxic mold, to not put those people at risk. How often are you speaking with or hearing from the EPA and how useful have those communications been?

Mayor NAGIN. Well, we just had another briefing from the EPA this past Monday. The EPA has been working with us pretty diligently to make sure that we are assessing the threats to the public safety.

Initially, the EPA was a little reluctant to issue written reports as far as what was actually going on in the city of New Orleans. Then we finally got some reports and they have been working with us on an ongoing basis to make sure that there are no further threats to our citizens.

If I could, we monitor the hospital activity on a daily basis. We are not at this time seeing any health trends that cause us any concerns, whether they be respiratory issues, the respiratory illnesses that we are seeing in the city of New Orleans is pretty flatlined, and it is not showing any significant increase. So we are going to continue to monitor that with EPA support.

Senator JEFFORDS. What process do you have set up to ensure that consideration of environmental risk is a part of the decision making process when considering whether people should return to New Orleans, and how are you informing those who return of the protections that they should take?

Mayor NAGIN. Everything we do basically centers around public safety, whether it be police support with the National Guard, or whether it be the EPA's concern about any toxins. We are constantly communicating to the public any potential risks that they have. As they come into the city, we have a fact sheet that we are giving everyone, as well as putting on our Web site, which advises them on how to enter the city, what type of masks they should be using if they are in the heavily flooded areas. We are advising them to wear boots and gloves and to make sure that they are taking breaks and they are working in teams and not going in there individually.

Senator JEFFORDS. Can you describe how average citizens of New Orleans, many of whom are spread all over the Nation, are being offered a chance to participate in the planning underway at the Bring New Orleans Back Commission?

Mayor NAGIN. Well, we are basically starting the process, sir, where all of our commission meetings are taped, both for radio and television. In addition to that, I have been going around to the different cities where a significant number of our population is being housed. We are talking to them about the current level of services in the city, the plans, and are in the process of doing charettes to make sure that they have a voice in exactly how the city will be rebuilt.

Senator JEFFORDS. Based on your experiences in Katrina, can you comment on the basic structure of our Federal emergency response system to depend on the State and local governments as first responders and to provide Federal assistance when asked by the State and local governments once their resources are overwhelmed?

Mayor NAGIN. That's a loaded question, right?

[Laughter.]

Senator JEFFORDS. Yes.

Mayor NAGIN. You know, as I reflect upon what happened, I must tell you that we as a country can do much better. I could have done a better job as Mayor, the State could have done a better job, as well as the Federal Government.

My experience with this event basically pointed out a couple of things. There needs to be some final authority that can make the calls within the first 5 days of an event. I kind of witnessed a dance, if you will, as it relates to who had the final authority between the State and the Federal Government. I think that caused a delay in response.

In addition to that, the FEMA support that we received, we had some individuals that were onsite immediately and that were feeding back information. But the support system that FEMA had was just not adequate enough to respond quickly to the needs of this type of crisis.

Senator JEFFORDS. Earlier you mentioned some concerns you had with the Stafford Act. I wondered if you could enlighten me as to what those concerns were and what might we do.

Mayor NAGIN. My concerns are primarily two-fold. I am running a government that basically is out of cash. We had emergency responders that were working 20 to 22 hours a day. We really couldn't pay them. We were able to put through a work plan, which is a whole other discussion on how that process works, on how you get funding, to basically pay our responders.

Once we got it approved and got the money in the bank, we learned that the rules associated with paying first responders would only allow us to pay overtime. So we got $102 million through a work plan to pay first responders and do some other critical things. All I can use it for is overtime. So I have spent maybe $15 million to $20 million of that money. So that money is sitting in the bank.

The second issue is what happens as we try to continue to run city government. We have the Stafford Act that has been modified, I can now pull down 25 percent of my total annual revenues to keep city government going after we have laid off half our work force. The process of getting that money seems to be very slow, No. 1, and it only allows me to operate city government until March of next year. After that, it is kind of anybody's guess on what we are going to do going forward.

Senator JEFFORDS. Thank you very much. Thank you, Mr. Chairman.

Senator VITTER. Thank you. Senator Isakson.

Senator ISAKSON. First of all, I want to thank you, Mayor, for your response to the FEMA question. You didn't take the bait, and you accepted, as all of us should, part of the responsibility. I think that's what all of us have to do looking forward to the future, so I appreciate that.

Back to my questions I had asked in the previous panel. I may not have this right, but the way I see it, the Corps has a number of decisions to be made, both with regard to the estuary and the environment, as well as the Mississippi River, as well as Lake Pontchartrain and as well as the city of New Orleans. It seems to me, you said, I believe, that you had been told by the Corps that they would have the city restored to pre-Katrina levels of protection by June 2006. We all know that means a level Category 3 storm, right?

Mayor NAGIN. Right.

Senator ISAKSON. The long-term prognosis, and what the ultimate protection is going to be, none of us know yet.

Mayor NAGIN. That is true.

Senator ISAKSON. I had asked the question of the previous panel members, or inferred a question which I will ask you directly. It seems to me that the land use of the New Orleans of the future is going to have a lot to do with what decisions the Corps makes or the decisions the Corps makes is going to have a lot to do with the land use, Ninth Ward, for example, other areas within the city of New Orleans.

Is your 17-member commission dealing with the considerations for the new land use of the new New Orleans understanding that

some of the things that were destroyed might not be rebuilt the way they were built originally?

Mayor NAGIN. Well, you know, our commission is definitely dealing with land issues and land use issues. We have ULI, which is the Urban Land Institute, that is working with us, which is an internationally known institute that helps cities and countries to design themselves efficiently. As it relates to the Corps of Engineers, we are making a fundamental assumption right now, as it relates to our planning. That assumption is that the Corps of Engineers, with some help from the best minds in the world, will figure out a way to provide us pretty quickly with adequate protection, storm protection as it relates to Category 3 or Category 3 plus.

I might add that pre-Katrina, the levee systems were at a height of 12 to 13 feet, whereas normally they are 15 feet. But it is pretty much dirt, so it has subsided. The Corps tells me that they are planning to raise those levees at least up to a 17-foot standard with some reinforcements that we never had before.

So with that information, we are looking at how to rebuild the city. It is not just the Ninth Ward that we are considering as far as being somewhat of a challenge, but we have New Orleans East and we have the area around the 17th Street Canal, which is primarily the Lakeview areas. All of those areas are probably going to build to a different standard, one that probably raises their foundations. In addition to that, it may require them to build homes that have on the first levels pretty much garages and then they would live on the second and third levels.

Senator ISAKSON. For me personally, that is very encouraging, that you are taking that comprehensive a look. Because when you do redevelop, you don't ever want to have a do-over again, after what you have been through. There are a lot of things, had we known what we know about Katrina in advance, we would have never done the way we did them.

So now that we have learned that lesson, and I say that because I feel some responsibility to repeat to you some of what I hear, being a member of the Senate from another State that wasn't hit, that is equally compassionate. We have 10,000 Louisiana kids in our public schools and about 23,000 folks in the State of Georgia, if my numbers are about correct.

But folks want to make sure these massive amounts of Federal monies, whether they be Stafford monies or monies in the redevelopment or the improvement of the levee, are done right and are done in coordination with a plan that we don't ever have to do this again, God willing, or we do the best we can to correct the mistakes of the past, which were not mistakes of the head but probably of the heart. We don't want to "throw good money after bad." I think that's what the taxpayers of the United States are looking for.

Mayor NAGIN. We wouldn't want to see that, either, Senator. If I could, I would like to send you an e-mail that I got which basically showed levee systems in Britain, the levee systems that the Dutch have built, as well as the Italians. Then it compared it to what we built. We can do much better. We definitely can build to a world-class standard that we don't have today.

Senator ISAKSON. I will give you my e-mail after your testimony. Thanks.

Mayor NAGIN. Thank you.

Senator VITTER. Thank you. I want to welcome Senator Lautenberg of New Jersey who has joined us.

Senator LAUTENBERG. Thank you, Senator Vitter. I have a statement that I would like included in the record as if presented.

Senator VITTER. Without objection.

[The referenced statement was not received at time of print.]

Senator LAUTENBERG. Mayor, welcome here.

Mayor NAGIN. Thank you.

Senator LAUTENBERG. You come with substantial burdens, but the pleas that you make to the Federal Government are appropriate. New Orleans is one of our great cities in this country and we neglect to see its role in commerce and industry as clearly as we should.

Mayor NAGIN. Yes.

Senator LAUTENBERG. So the shock of this whole thing will never be felt in other places like it was felt in New Orleans, but all of us, I would say, grieved with you. The picture of the people in the water up to their shoulders, in some cases, bundles on their heads, was painful to watch. I think all of us in our way tried to help. I did, and so did many others.

When do you think it was realized that you would have a serious flooding problem? The hurricane hit its force on Monday, right?

Mayor NAGIN. Yes.

Senator LAUTENBERG. When did people in New Orleans recognize that this was going to be——

There was a FEMA gentleman who was on the ground, his name is Marty—I forget his last name—Bahamadi.

Mayor NAGIN. He came to see me right after the storm hit, which was probably some time Monday afternoon.

Senator LAUTENBERG. He was there, I think, Saturday evening or at the latest Sunday. He was the sole FEMA person there.

Mayor NAGIN. Yes. We were waiting for the winds to die down to go out and assess the damage. He came and met with me and he basically told me that he had a chance to get up and fly around the city. He had seen the devastation.

Senator LAUTENBERG. That was after it struck.

Mayor NAGIN. Yes, that was after it struck.

Senator LAUTENBERG. What I am interested in is before. Because I was at another committee that we have, General Accountability Committee, and we had as a witness Dr. Ivor Van Heerden, who is the director of the Center for Studies of Public Health Impacts of Hurricanes at LSU. He handed out several photos and graphs of what might have been taking place. This is Advisory 18, submitted on Saturday at 2200 hours. It says that New Orleans will flood, Saturday.

Did you or the people you were relying on expect that the city would flood anywhere near like it did?

Mayor NAGIN. We knew that this was a pretty serious storm. But if I could step back a minute and just kind of give you some sense of what we were dealing with. Katrina was a very deceptive storm. On Thursday, I think it started to become a major storm. Friday it was pointed toward Florida and maybe parts of Mississippi. On Saturday, it was sunny skies in New Orleans and it was pointed

toward us. At that time we started to escalate the evacuation calls, while people were out at soccer stadiums with their kids.

Saturday afternoon I got a call to contact Max Mayfield, the head of the Hurricane Center in Miami. After talking with Max, I had thought we had done a great job, because we had estimated that we had evacuated at least 80 percent of our residents, which was unprecedented. Max told me at that point in time that this storm was the real deal, the conditions were like none he had seen in his 33 year history, and that if he were me, he would order an evacuation, and get everybody out of that city.

I hung up the phone with him and immediately called my city attorney and said, I don't care what we have to do, we are issuing a mandatory evacuation. Because there was also this legal problem with issuing a mandatory evacuation that you knew you couldn't very well carry out because you had so many residents that depended on public transportation. So the next morning, we issued the mandatory evacuation, expecting that the city would be hit very hard.

Senator LAUTENBERG. When do you think it was apparent that there were problems with the structure of the levees, with their capacity to withstand kind of the more serious strains? Was that talked about in New Orleans over any length of time, or is that a new discovery?

Mayor NAGIN. Well, we always knew that the levee system was built to a Category 3 standard that really hadn't been tested in a while. So we really weren't certain exactly what would happen if we got hit with the big one. We knew from some slosh models that we had that there would be a significant amount of flooding. I sought to advise the citizens, as this threat started to become more of a reality, to make sure that they evacuated first, but if they didn't evacuate, to make sure that they had access to a second floor or third floor.

Senator LAUTENBERG. Because on Thursday, September 1, the President was on the program Good Morning America. He said he didn't think that anybody anticipated the breach of the levees, and we had Marty Bahamadi here. He said there had been several years of discussion about the weakness of the levee system and that problems could occur. I didn't know whether that was a common topic in New Orleans or Louisiana.

Mayor NAGIN. Well, levees are always discussed, Senator. But they are discussed in a couple of different contexts. They are discussed in the context of the city of New Orleans, as it relates to our protection. There are other levee systems in St. Bernard and Plaquemines Parish that we are always talking about, because there are multiple lines of defense as it relates to hurricane protection, the marsh lands, the levees down in St. Bernard and Plaquemines, and then ultimately the levees in New Orleans.

So they are always discussed, but they haven't really been tested since 1965 in a major way, when Hurricane Betsy hit the city.

Senator LAUTENBERG. Do you think the city can be rebuilt to its former self?

Mayor NAGIN. I think it can be rebuilt better. But the issue is, how quickly can we get the levee systems back up to standard and make them even better than they were before.

Senator LAUTENBERG. Mr. Chairman, I am sorry to take, if I can, just 1 minute more. Because as part of the hearing that we had earlier and the graphs that were shown, there seem to have been many instances, and I think one of them was 17th Street, I have marked a page 17th Street——

Mayor NAGIN. Yes.

Senator LAUTENBERG [continuing]. Where the water actually came in under the levees. I don't know how deep you have to put a footing to ever accommodate that kind of a condition. Is that one of the things that is——

Mayor NAGIN. Yes, well, we talked about it after the event, from the standpoint of, we knew we had this breach at the 17th Street Canal, and we were trying to get helicopters up with these 5,000 pound sand bags to basically fill in the gap or the breach area, to stop the flooding. Once we started to drop sand bags, it was revealed at that point in time that there was a 25-foot crater that was in the breach area, if that is what you are talking about.

Senator LAUTENBERG. I have several more questions, Mr. Chairman, but I know that my time is used. So thanks, Mayor. Lots of good luck, and keep up the fight.

Mayor NAGIN. Thank you, sir.

Senator VITTER. Thank you, Senator. Now we have our Chairman returned, Senator Inhofe.

Senator INHOFE. Thank you very much, Mr. Chairman.

Mayor NAGIN. Hello, Mr. Chairman.

Senator INHOFE. Mayor Nagin, my heart bleeds for you. I had a hard job once, I was the mayor of a major city.

Mayor NAGIN. Do you want to swap?

Senator INHOFE. No, sir, I don't.

[Laughter.]

Senator INHOFE. In fact, I have told my friends here, if you want a hard job, you become a mayor.

Mayor NAGIN. Yes, sir.

Senator INHOFE. When I was mayor, you had Mayor Morial, was there.

Mayor NAGIN. Yes.

Senator INHOFE. I was down and met you just a couple of days afterwards, we had the majority leader put together the chairmen of all the committees that were affected and the Ranking Members to go down and visit and assess. This committee has more jurisdiction, as you heard in my opening statement, than any other committees do.

A few weeks ago, there seemed to be a great deal of confusion on opening up parts of the city. You were inviting people back in at the same time we were getting reports from the EPA and from the Centers for Disease Control and some other things—maybe you have already covered this. If you have——

Mayor NAGIN. No, no, go ahead.

Senator INHOFE. On the third panel, a witness charges that people are not being properly informed about the risks upon returning to their homes. I would ask you, how are you handling this? Do you think that is a fair charge to make?

Mayor NAGIN. Well, you know, I think if people are looking at the total repopulation of the city, then I think it was somewhat

risky. But our strategy has always been to work from the dry areas first. Those dry areas were up against the Mississippi, pretty much up against the Mississippi River in the areas that had the least flooding or no flooding at all. From that standpoint, there were never any concerns about any environmental issues. That was always a green light. The only issue we had was, could we get good, safe drinking water through the pipes in the city of New Orleans. We were able to work through that also.

Now, as it relates to other areas of the city, we waited until we got a written report from the EPA before we opened up those areas.

Senator INHOFE. Was there ever any communication problem between you and the EPA or you and the Centers for Disease Control?

Mayor NAGIN. You would have to ask them that. I kept asking for——

Senator INHOFE. Well, I did, and they said to ask you.

[Laughter.]

Mayor NAGIN. Well, I kept asking for written reports, and there seemed to have been a reluctance to grant those. Eventually, we got them.

Senator INHOFE. As you know, this committee has a huge jurisdiction, and it also has jurisdiction over Superfund sites. Senator Vitter and I had written a letter to both the EPA and the Corps of Engineers to caution against opening up old landfills, before they used up the existing capacity. We don't want to be cleaning up New Orleans as the creation of new Superfund sites, especially when Federal dollars are being spent for the intent of cleaning up.

One of the sites that was reopened by the State after we wrote the letter is at least partially owned by the city, it was the old Gentille landfill.

Mayor NAGIN. Yes, sir.

Senator INHOFE. Could you tell us a little bit about that, about the decision to open that up and what problems there might be there, and why we didn't use up the existing capacity of existing landfills that were in a position to do a better job?

Mayor NAGIN. Well, you know, sir, it is my understanding that we were working with the State on that issue, and we got clearance to open it. As far as any other existing landfills, every landfill that is in the area, it is my understanding, is being fully utilized.

Senator INHOFE. We need to explore that, because that's not the information I have. I am not saying that you're wrong and they are right, but somebody is wrong, because we are hearing that there are newer, more modern existing landfill sites that are just partially being used at this time.

Mayor NAGIN. Well, we would like to know where they are. Because we are in the process right now of stacking debris up in three major sites in the city of New Orleans. We have 17 million cubic yards of debris to move. To this date, we have moved about 2 million cubic yards. The issue is going to become, how do we deal with all that debris, do we burn it, do we move it, do we put it in some other landfill.

Senator INHOFE. I was there, and I understand that problem.

But I would, I think it would be worthwhile, Mr. Chairman, for the record, to find out, because we are getting two different stories on existing capacity. Thank you very much.

Senator VITTER. OK. Thank you.

Mayor, I just have a couple of follow-up questions. You talk to business folks all the time.

Mayor NAGIN. Yes.

Senator VITTER. Some are back, many are not. Many are in Houston, Atlanta, elsewhere. What do they want to see and what do they want to hear so that they can come back with the jobs and investment that they represent?

Mayor NAGIN. The thing they would like to see from the Federal Government is a firm commitment on the levee systems. Before they come back and invest, they want to make sure that as they put their employees back in the city of New Orleans, that they can put them back in a safe environment. So the quicker we can confirm that the Corps will be building to a higher Category 3 standard, and we tell the world that, I think you are going to see an unleashing of an incredible amount of business investment.

The second thing they are asking for is an environment that encourages them, a tax environment, a business environment that encourages them and welcomes them back to the city of New Orleans. We are currently working on some State legislation that is going to complement whatever legislation comes out of the Federal Government. I am in the process of looking at, even though we are a broke city, at some incentives on the local level.

So it is my hope and the business community's hope that they will have incentives at all levels of government to encourage them and hopefully somewhat make them whole as they come back to the city of New Orleans.

Third, they are looking for a good public school system. There is some legislation that I think the State is working on as we speak to deal with our public education system, which was in crisis prior to Katrina. So we have a wonderful opportunity to address those three issues.

But the main thing they want to know is, what are we going to do with the levees?

Senator VITTER. Of course, this committee has jurisdiction over the Corps, and exactly that. I guess the challenge is to communicate that commitment early, now.

Mayor NAGIN. Yes.

Senator VITTER. But at the same time, folks up here want to know what that looks like. Of course, it's not designed yet. So we don't really know in any level of detail what at least a Category 5 system looks like exactly. What are your thoughts about how we accomplish communicating that commitment, while still obviously telling folks up here, we're going to work out the details in a responsible way and everything's on the table?

Mayor NAGIN. If I could advise the committee on anything, I think we ought to make a statement and commit to Katrina standards protection, whatever that is.

I would further suggest that the committee form a partnership with the Corps of Engineers and the best minds around the world, put together an advisory group of the Dutch and the Germans with

Americans and whomever else that know this and can do it very well to advise the Corps. I think we give them the support necessary to go get the job done with a time line.

Senator VITTER. Right. Well, the only area where I might disagree is Katrina level standard. Because my understanding of it is that by the time Katrina hit the city, not necessarily Plaquemines Parish, but the city, it was almost certainly Category 3 or less. I think we need at least in the core areas of the city, we need to have an even significantly higher standard than that.

Mayor NAGIN. I would agree with that, Senator. I will tell you this, that if that storm had gone a few miles west of New Orleans, where we would have gotten the brunt of the strongest winds, it could have been worse. It really could have been worse.

Senator VITTER. Thank you.

Mr. Chairman, do you have any follow-up questions?

Senator INHOFE. Mayor Nagin, there is some controversy over what happened in 1977. In 1977, the Corps of Engineers was embarking on a program to enhance the levees. They were enjoined by an environmentalist group called Save the Wetlands from doing that. Do you have any thoughts on that? What are your thoughts on that?

Mayor NAGIN. Well, I think that what happened in 1977, you probably will see a different attitude from the environmentalists. I think you are going to see more openness.

The Corps of Engineers came forth with several ideas since 1977. I also saw a butterfly concept that they proposed to put some protection in the city of New Orleans that was rejected.

I think now that we have had this catastrophic event, there will be more openness to the techniques that the Corps will bring forward.

Senator INHOFE. Yes, but my question really was specifically in 1977, because I have some quotes from some professors at LSU and some people with the Corps of Engineers that were actually there at the time and in charge that had that not happened, that they were going to be in a position to enhance that levee that would have taken care of—they didn't call them Categories 1, 2, 3, 4, 5 back then, but something far better than it was when Katrina hit.

So they specifically said if that, if I recall the quote right, if they had not been enjoined to stop what they were doing that it would have saved the city, one of the LSU professors used that term.

Mayor NAGIN. Well, not to disrespect any professors that are out there, I am sure they have wonderful thoughts and wonderful theses. Most of the modeling that I saw come out of LSU had said if a Category 3 storm with a levee breach had happened, we would lose 10,000 lives. There were other factors in play where we didn't lose nearly that amount.

So I think the theories are nice. But I think we ought to engage the best minds in the world to come up with a system that works in today's environment.

Senator INHOFE. Well, of course, the Corps was claiming at that time that that is what they were doing, they were anticipating that this is not if it was going to happen, but when it happens. I wasn't just referring to professors who are maybe on some philosophical plane that doesn't communicate too well, these were actually the

directors of the Corps of Engineers who were there at the time and were frustrated because they knew that we had to do this, and they were stopped by some environmentalist groups. You weren't there at the time.

Mayor NAGIN. Yes, that predates me. I was in a different world enjoying life.

[Laughter.]

Mayor NAGIN. Mr. Chairman, all I can tell you is that it is a different time and space now. You are going to find people much more open and willing to do what it takes to provide the protection. I don't think there is anyone in America that wants to see this type of devastation ever, ever again. So we are looking at everything at the city and the State level. We have multiple levee boards that are set up by parish or by municipality.

To me, that makes no sense. We should have one levee board that deals with the Corps of Engineers and provides comprehensive protection for the entire region.

Senator VITTER. Just to follow up on that thought, I think the other opportunity that exists, looking forward, is to marry this work with the work we are setting out to do but need to do more aggressively, in my opinion, against coastal erosion, which can get the environmental community excited and hopefully a full partner in terms of doing both together, because they both go to protecting populated areas against this sort of devastation.

Mayor NAGIN. Yes, the coast and marshlands are absolutely critical. I think the formula is for every mile of marshland that we have, it subsides the storm surge by 1 foot, which could be critical when you have a major storm approaching any area along the Gulf.

But if I could make one other point. I just happened to stumble upon this article in the Dallas newspaper. It talked about a new phenomena called the loop current. The reason why I bring this up is these superstorms are most likely not going to go away. The loop current is basically some warm waters that are flowing from the Caribbean around Cuba into the Gulf of Mexico. Normally when a storm hits, there are warm waters in the Gulf, if a storm hasn't hit recently, but it stirs up the cool water.

This loop current has really deep warm water, to the tune of 200 to 300 feet deep. It stays in the Gulf for a long time. It is something that the oil industry was watching and knew about, because of the oil rigs. But the weather scientists are just getting in tune to it.

I bring it up because if these superstorms are going to constantly go in the Gulf, then it is going to impact not only New Orleans, but it is going to impact the entire Gulf Coast. As we are thinking about protection, we might want to think about protecting some other communities as well.

Senator VITTER. Thank you.

Ranking Member Jeffords?

Senator JEFFORDS. No further questions.

Senator VITTER. Thank you very much, Mr. Mayor, for being here. We deeply appreciate it.

Mayor NAGIN. Thank you. I really appreciate your support.

Senator VITTER. If I can have everyone's attention, we will move on to our third and final panel today, Panel III, which is Mrs. Kim

Dunn Chapital, environmental consultant with the Deep South Center for Environmental Justice; and Mr. Bill Hines, director of Greater New Orleans, Inc.

Mrs. Chapital, welcome, and please start your testimony.

STATEMENT OF KIM DUNN CHAPITAL, ENVIRONMENTAL CONSULTANT, DEEP SOUTH CENTER FOR ENVIRONMENTAL JUSTICE

Mrs. CHAPITAL. Thank you, Mr. Chairman, for the opportunity to testify before this committee. Let me begin by introducing myself. My name is Kim Dunn Chapital, and I am here representing the Deep South Center for Environmental Justice at Dillard University in New Orleans, formerly Xavier University of Louisiana. For the past 5½ to 6 years, I have worked for the Deep South Center of Environmental Justice as an environmental trainer. With the Deep South Center, we typically train individuals who are from low-income communities of color in how to properly perform and conduct hazardous materials removal and remediation and emergency response activities, asbestos and lead abatement, as well as mold remediation.

In addition to working for Deep South Center, for the past 21 years, I have been employed by Tulane University's Office of Environmental Health and Safety. Initially, I held the position as a hazardous waste technician there, where I worked for about a year and a half, was promoted to an industrial hygienist, and since 1991, I have worked as the occupational health manager for Tulane University's Office of Environmental Health and Safety.

My activities include coordination of all of the university's asbestos, lead and mold remediation projects. I work with in- house crews as well as abatement contractors.

So I am here today as a voice amongst the thousands of displaced individuals. I am an individual that lives in Gentille in New Orleans. I am totally displaced. My family is spread throughout the United States. So I speak not only for myself, but also for many other primarily low-income people of color.

I also come to you as an individual who is considered to be more or less an expert in the field of environmental health and safety. So I will begin by giving you a little bit of a story that will help you to understand my issues that I think need to be addressed.

Approximately 2½ to 3 weeks after Hurricane Katrina, I returned back to the city for a number of reasons. This was after having lived in shelters and a hotel with family and friends. My family and I were very transient for about the first 8 to 9 days.

But I returned after 2½ to 3 weeks to the city for a number of reasons. No. 1, I had to go to training in order to keep my accreditations and my credentials with the State. No. 2, I needed to address some of my own issues at my own home. Then No. 3, I had been called upon to do quite a bit of environmental consulting. As a result of Katrina, myself and many other individuals have been quite in demand.

However, upon entering my home, where I had to be fully dressed in gear in order to address the issues at my home, I decided I needed to forego the actual consulting opportunities that were before me. Those opportunities were there and they will be

there. I had numbers of people, family, friends, friends of friends who knew people who were calling me, they were asking me questions, Kim, how do I enter my home, what items can I retrieve versus which items do I trash? What do I need to know as far as what protection I need to put on and what I need to wear and how do I decontaminate myself?

So what I opted to do is forego the environmental consulting. I came in, I went to Red Cross locations once or twice a day. I saw to it that individuals had the proper respirators, even though many of them look like masks, and in some instances where these respirators could not be found at Red Cross locations, I went out and I actually purchased them.

I saw to it that people had the proper decontamination buckets and brushes and items that they needed to enter into their homes safely and I educated these people on things that they could and could not do. But most of all, I tried to lend emotional support. Because you see, when your home is here but your new home is there, and your family is spread in so many different locations, it is a logistical nightmare. You are trying to address your insurance issues and you could never understand, unless you have walked 1,000 miles in our shoes.

With all of this in mind, I would like to say that, with information that I have seen, I believe, and information I have read, I believe that EPA and other health agencies should have immediately brought the environmental testing that is done to i.d. toxic and hazardous sites for remediation and cleanup. This will prevent any further or future releases or harms that could be posed to individuals. I also ask that you reject all efforts to weaken public health and environmental laws. Do not waive and weaken laws which guarantee us, the citizens of New Orleans, U.S. citizens, and just human beings, the right to a very clean environment. Finally, one of the things that I noticed that I found very disturbing is that there are not enough public health advisories and information that has been provided, especially to individuals of low economic status, that will help them to properly and safely enter their homes. You see, Katrina blew in on August 29, but Katrina is very much still there. When people enter their homes, there is still water that is in cups, dishes, inside china cabinets, inside homes where it pockets. Many of these individuals are not aware that they should not bring in their children.

I see on a daily basis people coming in with kids. I see people entering residences and workplaces without personal protective equipment on. Whereas they may be given hand sanitizer from, let's say the Red Cross, they may clean their hands, but then they immediately take off their boots and their shoes with those same clean hands and throw them in the trunks of their cars and carry that contamination off-site and possibly to other people.

So I urge you, it is very important that we address these issues if we are to revitalize New Orleans. I was there, I am there currently working, and I intend to go back to New Orleans. If others are to come back, we have to have the trust of the Government that you all will address these issues in order for individuals to return.

Thank you.

Senator VITTER. Thank you, Mrs. Chapital.
Bill Hines.

STATEMENT OF WILLIAM H. HINES, PAST CHAIRMAN AND BOARD MEMBER, GREATER NEW ORLEANS, INC.; COCHAIRMAN, ECONOMIC DEVELOPMENT COMMITTEE, MAYOR'S BRING NEW ORLEANS BACK COMMISSION

Mr. HINES. Thanks, Senator. Good morning, Senator Vitter and Senator Jeffords, and particularly Senator Vitter, thank you for all the work you have been doing to help rebuild our State after the storm.

My name is William Hines. I am the chairman of the executive committee of the law firm of Jones, Walker, Waechter, Poitevent, Carreere and Denegre, which is headquartered in New Orleans. In my role today, I am the immediate past chair and a continuing board member of Greater New Orleans, Inc., which is the public-private partnership that spearheads economic development initiatives for the 10-parish Greater New Orleans region.

I will also mention, although it is not part of the official testimony, I am the current chair of the United Way Board for the New Orleans area. So we are working a lot on social service needs for our community.

Additionally, at the request of Mayor Nagin, I have just been appointed to serve as cochairman of the Economic Development Committee for his Bring Back New Orleans Commission.

I am grateful for the opportunity to appear before you today to discuss the response and recovery efforts affecting the future of New Orleans. On a personal note, I will add this as well, my home also flooded and I probably did not exercise good judgment and stayed during the storm. It was evacuated by boat 5 days after the storm, so I can speak from a personal standpoint of how difficult this was. My family was spread to three different cities. At least two-thirds of us are back together now, my son is now in Michigan, having moved from Tulane.

It cannot be stated often enough: Hurricane Katrina was like no other hurricane before it. The cataclysmic storm caused unprecedented destruction and long-term interruption to governmental services and economic activity. Again, Mayor Nagin and I are the same age, and I was there in 1965 for Hurricane Betsy, which I thought was a horrendous storm, but nothing in comparison to this.

Never in the history of this Nation has a three-State area been hit so hard, nor has an entire U.S. major metropolitan city been evacuated for weeks on end. While Katrina occurred over 2 months ago and seems to be largely fading from the front pages of our Nation's newspapers, the lives of citizens of the Greater New Orleans area have not returned to normal. Many businesses in the region are generating little or no revenue and are struggling to meet payroll, rent and vendor payment obligations.

SBA loan approvals are moving at a snail's pace. Unemployment claims, as of early October, were 16 times the normal rate. This is a new point that the business community in the last 2 days, when they heard I was testifying, asked that I really stress to this committee, because this is clearly a Federal issue. One additional illus-

trative example of how life in the New Orleans region has not returned to normal concerns the U.S. Postal Service. Most regional businesses, including our law firm, banks, Tulane and others are missing over a month of mail. We basically received no mail from the month of September, and the Postal Service is telling us they are not sure when they can get that to us.

Without receipt of payment checks, vouchers, bills and other important and time sensitive business documents, commerce within the region is significantly hampered. This backlog must be eliminated, and it represents the one area where Federal assistance can help the regional business community.

On behalf of the citizens of New Orleans and the regional business community, I wish to highlight the regional economic activity that must be restored in the wake of Katrina. No. 1, and you have talked about it a lot this morning, restoration and enhancement of the levee and barrier system. At the outset, I can assure you that the No. 1 priority for the New Orleans business community is to obtain the firm assurance of the Federal Government and this Congress that adequate levee and barrier protection will be provided for the New Orleans region.

We are extremely pleased with the assurances and actions to date provided by the Corps of Engineers and the Federal Government that the levee system will be rebuilt no later than June 2006 to withstand Category 3 storms. However, the business community also needs assurance that the Federal Government will work as quickly as possible with near-term time limits to strengthen the critical levee and barrier system to withstand Category 5 storms. That is a must. Many of our firm's largest clients are public companies that are now in Houston that are based in New Orleans, said they need Category 5 assurance, at least to stay, a funding mechanism and a time line.

With this assurance, businesses both large and small will be provided with the comfort they need to invest and otherwise engage in the business restoration efforts. Mr. Chairman, I respectfully request that your committee and this Congress immediately provide the required statutory authorization and Federal funding for Category 5 levee protection. The Greater New Orleans business community looks forward to working closely with you in that vitally important effort.

As to the port and maritime industries, the very founding of the city of New Orleans was based upon the distinct and inherent advantages it provided and continues to provide as a port city for the Nation's maritime and trade industries. Because of vessel, barge, highway and unsurpassed rail access, the Port of New Orleans serves as one of the Nation's key intermodal gateways for domestic and international trade.

Hurricane Katrina completely shut down the Port of New Orleans, affecting more than 380,000 jobs nationwide that are dependent on the cargo activity of the port. The port is continuing to restore terminal and other services and is now operating at approximately 40 percent of its pre-Katrina capacity. Full restoration of port services must be a given. With Federal funding and other assistance, especially from the Army Corps of Engineers and the U.S. Department of Transportation quickly restoring the port and other

vital areas and vital ports in southeast Louisiana to full operation will help return economic vibrancy to the area.

Other important business sectors for economic development, tourism, you know Mardi Gras, New Orleans Jazz Fest, Sugar Bowl, annual Business Trade Association and other conventions. These internationally renowned events and activities and the culinary, artistic, musical and many, many other attributes of New Orleans created a tourism industry within the region that supported more than 2,500 companies with direct employment of approximately 81,000 people. Restoration of that industry is vitally important, not only to the New Orleans region but also to the fabric of our Nation as a whole.

But the next three industries I will briefly highlight, then I will close, are industries that I think most of America is not aware of that are core to New Orleans's business beyond tourism and the port: biomedical and medical research and other related activities. In New Orleans, prior to Katrina, 22 biotechnology firms had established businesses within the region and more than 24,000 employees worked in the high-paying jobs within the New Orleans medical sector.

Through Louisiana State investments in cancer research and gene therapy consortiums among Tulane University, Louisiana State University and Xavier University, and the state-of-the-art BioInnovation Center Wet Lab Incubator and other biomedical facilities, the New Orleans region was rapidly becoming a true biomedical research center on the Gulf Coast.

Oil and gas, chemical manufacturing and other related industries. A third of the country's daily domestic oil and gas and the natural gas supply originates in the south Louisiana region. New Orleans is fortunate to have major defense contractor manufacturing facilities within the region, including Northrup Grumman Ship Systems, Lockheed Martin, Textron and Bollinger Shipyards, which employ collectively over 13,000 workers.

Last, information technology. Because of a number of Federal programs in the greater New Orleans region which employ several thousand people, the region has become a center of excellence for back-office technologies, as evidenced by the information technology work at the National Finance Center, the largest payroll center in the Nation, and the SPAWAR Systems Center, home to the Defense Integrated Military Human Resource System.

As my written statement further highlights, the region has made great strides in business and manufacturing diversification, and government and business leaders alike want to continue the pre-Katrina efforts to preserve and enhance these and other business and manufacturing sectors. Bold recovery and other incentives are required to preserve business and economic opportunity in New Orleans and other affected Gulf Coast areas. Simply put, businesses will not return to the region unless the Administration and the Congress initiate strong, clear, definitive actions for regional recovery. It is clear that no recovery will happen without the support of Congress to No. 1, repair and enhance the New Orleans levee and barrier system and other public facilities and structures; No. 2, provide appropriate Federal funding assistance for relief and recovery efforts; and No. 3, enact significant and effective business tax relief

incentives to restore New Orleans to its place as one of the primary business, cultural and historical centers of our Nation.

Mr. Chairman, I thank you for the opportunity to address the committee today. I look forward to working with you and your fellow committee members on the economic and business recovery of our New Orleans region. Thank you.

Senator VITTER. Thank you very much, Mr. Hines.

Now we will get into questions. Mrs. Chapital, you have been critical of the effort to get proper and adequate environmental information to citizens. I am sure you are familiar with the Mayor's Web site and other Web sites which have some guidelines and have information. Also the early days of the repopulation effort where that was handed out, I believe, in a flyer, as people entered the city.

Is the main problem with those types of efforts, in your opinion, that the information is inadequate or that the means of getting it out there is inadequate?

Mrs. CHAPITAL. It is a little bit of both. In some instances, we will see cases, for example, Red Cross will have masks, but they are not the appropriate, there is like an N95 respirator, to just give you a specific example, is what is needed specifically. So many of these people will have this false sense of, well, this actually winds up being a false sense, they think they will have what they need when in many instances they don't.

Senator VITTER. Just to take that example, is that specific respirator identified in the Mayor's information and other information?

Mrs. CHAPITAL. I haven't seen the Mayor's information. I myself have not had the internet access, and many people don't have that access to be able to retrieve that information. There are community groups and individuals that are going out and trying to provide information to people. But it has been quite difficult for us to get information.

Senator VITTER. Mr. Hines, following up on the No. 1 priority you identified, which is also the No. 1 priority I would identify, the levee system protection, I guess the trick is, as I was saying to the Mayor, the trick is communicating a clear commitment, but at the same time, we don't have a plan, we don't have a design. So we don't have that in front of us, we are not going to authorize or appropriate money for it right now, between now and the end of the year.

So given that, given it is going to take some amount of time to get that, what can we as a Congress say right now that will largely fulfill the needs?

Mr. HINES. It is two-fold. One is I know you can't control the President, but they would like to hear the President and the Congress state, and I think it has been stated pretty clearly, that the Category 3 levee system will be built back to the 17-foot level, which is a new level, by June. We are hearing that and reading that in the paper, but have that stated clearly.

No. 2, just a commitment, and frankly this is probably more from the President than from the Congress, but both, that we will build a Category 5, and we say levee and barrier system, because I know if Senator Inhofe was still here, as I said, the Mayor and I are the

same age, I am very familiar with that barrier plan from the late 1970's and early 1980's, and met with the Corps of Engineers for the last several years as we chaired our economic development group. They said to us in private for 3 years that if that barrier system had been built in the early 1980's, we would have none of the flooding I had in my home or her home or anywhere from Slidell to New Orleans. The cost back then was $1.5 billion to $2 billion. I hear now it is $3 billion to $5 billion.

So the answer is, I think the business community wants to be rational, and they understand you can't promise them something with technology that has not been developed or something. But they want to hear a firm commitment and a time line, and they don't want to hear 8 to 15 years, either. To be honest with you, if your home has been flooded or your business has been flooded, you have a fiduciary duty to your shareholders as CEO of a public company that is going to move back, you have to know that in sort of a 5-year plan, 5 to 8 years, that this can incrementally be accomplished.

I will also add, the Dutch, we have mentioned the Germans and the English, the Dutch have been to New Orleans several times and have offered this technology that they have had for years. There has not been a significant interest, really, primarily at the Federal level, in looking at it.

Senator VITTER. I know you heard some of the other Senators' comments, particularly Senator Isakson, about folks up here wanting to hear from Louisiana an openness to doing things differently, and to rebuilding differently, particularly in highly vulnerable areas. Do you think there is that openness on the ground in the greater New Orleans area, which I think quite frankly is important to communicate to up here to get the help we need?

Mr. HINES. I think it is a quick three-part answer. I think in the business community they clearly is that openness. In fact, frankly, they say if it is business as usual they are not coming back. So there is a clear commitment.

Second, to sympathize with those that are homeowners or property owners in those low-lying areas, it is easy for me to say there has to be that change. But I think that the Mayor's commission or other groups, maybe the Federal Government can assist, needs to provide them with a vision of, well, if we're going to tell you we are not going to rebuild your home here, but then where are you going to go? You have to show them a vision.

As you know, there are parts of older New Orleans and some urban environment, I compare it to a Chicago, you could move people in, if they wanted to, from the Ninth Ward of New Orleans East to Central City and other areas that have been a part of urban blight for the last 20 or 30 years, we could redo that. But you need community input to do that. Then last, as I said, I think this is one, I am just going to have to say it, but it is not our Federal officials, I am worried that our local elected officials need to embrace this change.

You are elected officials, I think that when you look at not rebuilding some of these areas, it is going to change districts at council levels and State legislative levels and all that. That concerns

me, the business community, that that cannot be a factor in making good public policy.

Senator VITTER. Thank you. Ranking Member Jeffords.

Senator JEFFORDS. Mrs. Chapital, one of the issues that has come up as we look at the redevelopment of the Gulf Coast is the degree to which displaced citizens are afforded an opportunity to participate in the decisionmaking process. What is your perspective on how important that is, and the problems, and what is the best way to make it happen?

Mrs. CHAPITAL. Repeat the question.

Senator JEFFORDS. What is your perspective of how important it is for the displaced citizens to be afforded an opportunity to participate in the decisionmaking process, and what is the best way to make it happen?

Mrs. CHAPITAL. If we expect individuals to return, they do need to be a part of that redevelopment process. I wish I could better—I am not quite sure how that would take place, though. I am really not.

Senator JEFFORDS. You just believe it is essential that it does take place?

Mrs. CHAPITAL. It is essential that it does take place.

Senator JEFFORDS. Mr.Hines, from your perspective, has an inclusive, comprehensive process been set up at the local or State level that would create a redevelopment plan that would drive Federal investment decisions and clean up flood control in other areas?

Mr. HINES. Two words. Inclusive, I think this get back to the question you asked my copanelist. I think there are some community organizations that do have networks that can facilitate communication. Because I agree, unless you are a professional with access to the internet, my children are much more on the internet giving me real-time information than even I have. But to the larger New Orleans population, frankly, primarily the poor, they don't have access to the internet. I think there needs to be outreach from these community groups. The community groups are returning to New Orleans, and they have their networks where they can get input.

As to a comprehensive plan, I would like to say there is a comprehensive plan, but no, I don't believe there is one yet. We have talked about the levee barrier system, which is one type of plan. On economic redevelopment, I think there are plans that New Orleans, with citizen input, the New Orleans region adopted, as long as 5 years ago, frankly, when we were soliciting an NBA team, there was a vision and wish list for 5 and 10 years out. I think we need to revisit that. I think that would be the basis for economic redevelopment.

Then on social services, I think the United Way is working with U.N. groups now and the Red Cross and others on really taking a new look at how you deliver social services in this kind of an environment.

Senator JEFFORDS. Thank you. What steps should the Federal Government take to make sure that happens, what you want to see?

Mr. HINES. Well, I will express a personal opinion here, I think most businesses I talked to agree with this, and some others didn't,

which is this appointment the President made yesterday, not who it was, but should we have that position. The term czar had been used for a while. I know we don't have a czar. But I think having a Federal coordinator, and I know that was the word that was used for this, I think will be critical. First, I understand you need assurances that the money is being wisely spent. But I think having somebody, and it appears from his background he has primarily a financial background, I think the other thing we will need is maybe some engineering background and that sort of thing.

But to oversee how this coordinates with Mississippi and Alabama, and particularly with Mississippi as to this levee system and economic development, if you look at NASA alone, you have Stennis, you have Micheau, there are a lot of similarities between those two States. I think if those two States could cooperate, the poverty issues are the same, the racial demographics are the same. I think there is an opportunity to do a sort of Gulf Coast recovery plan that could be very visionary if we just bring the best minds to it.

Senator JEFFORDS. Thank you.

Senator VITTER. Thank you, very much, to both of you for participating. We appreciate it.

With that, the meeting is adjourned.

[Whereupon, at 11:54 a.m., the committee was adjourned.

[Additional statements submitted for the record follow:]

STATEMENT OF HON. NILS J. DIAZ, CHAIRMAN, NUCLEAR REGULATORY COMMISSION

INTRODUCTION

Mr. Chairman and members of the subcommittee, it is a privilege to appear before you today to discuss the U.S. Nuclear Regulatory Commission's preparations and response to Hurricane Katrina. To summarize NRC's actions, I have attached a factual NRC timeline for the Hurricane Katrina activities.

OVERVIEW OF NUCLEAR EMERGENCY PREPAREDNESS AND RESPONSE

The NRC's mission is to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment at nuclear powerplants and materials facilities during routine operations and during abnormal or emergency conditions, including natural emergencies, such as Hurricane Katrina. The NRC takes an integrated approach to safety, security, and emergency preparedness in carrying out this mission. This approach, combined with the defense-in-depth strategy we use for licensing the design, construction, and operation of nuclear powerplants, provides substantial protection against severe natural phenomena, such as hurricanes and tornados.

The well-established capabilities and procedures of the NRC, our Federal and Agreement States partners, and our licensees proved to be effective during Hurricane Katrina for NRC areas of responsibility. The nuclear powerplants affected by this hurricane were essentially undamaged. Concurrently with the disciplined approach to preparation by our nuclear reactor licensees, the NRC initiated pertinent command and control of emergency response activities early and activated the NRC Region IV Operations Center in Arlington, Texas, and the NRC Headquarters Operations Center in Rockville, Maryland, as the hurricane approached the Gulf Coast, with substantial participation from all regions and senior management, including the Chairman. My fellow commissioners were kept fully and currently informed. In addition, the NRC and State regulatory agencies initiated and implemented emergency preparedness and response activities to account for, and ensure the safety and security of radioactive materials located in the States of Louisiana, Alabama, and Mississippi. These States are Agreement States, through formal agreements with the NRC, have regulatory authority over certain sources of radioactive materials within their States. This authority does not include reactors, large quantities of special nuclear material, or materials licensed to Federal government agencies. The NRC coordinated extensively with the Agreement States and our Federal licensees to ensure that the safety and security of radioactive sources were maintained.

For nuclear powerplants, emergency planning begins with robust facility designs. NRC regulations require each nuclear powerplant to be designed and constructed to withstand the effects of severe natural phenomena pertinent to the surrounding area, along with added margins of safety for even more extreme postulated events. The design of these facilities considers the combination of the effects of natural phenomena with the effects of normal and accident conditions at the plant. For example, nuclear powerplants in Florida and along the Gulf Coast are designed with capabilities to mitigate plant accidents even with the effects of hurricanes, flooding, and loss of offsite power from the electrical grid, while nuclear powerplants in California include capabilities to mitigate plant accidents even with the effects of a severe earthquake and loss of off-site power from the electrical grid. Waterford 3, the nuclear powerplant closest to New Orleans, is equipped with protective features against flooding, including a 30-foot levee and water-tight compartment doors for safety-related equipment.

Over the years, U.S. nuclear powerplants have experienced direct impacts of severe natural phenomena, and their robust design and construction have enabled them to successfully withstand such events. Some of the events experienced within the past 15 years include: Hurricane Andrew, a Category 4 hurricane, which passed directly over the Turkey Point nuclear powerplant with sustained wind speeds of 145 miles per hour and gusts up to 175 miles per hour (August 1992); the Cooper Nuclear Station, which experienced flooding onsite from the Missouri River (July 1993); a Fujita Tornado Damage Scale F2 tornado, which directly hit the Davis Besse Nuclear Power Station, with winds of 113 to 157 miles per hour (June 1998); and, the Diablo Canyon Power Plant, which felt the shock from a Magnitude 6.5 San Simeon earthquake in Paso Robles, California (December 2003). In all these cases, the nuclear powerplant functioned as they were designed, and adequate protection was maintained during and after the event.

NRC regulations also require all nuclear powerplant licensees to have in place comprehensive emergency preparedness programs (*e.g.*, dedicated emergency response facilities, systems, equipment, and staffing). Detailed site-specific emergency plans and implementing procedures provide instructions and guidelines for dealing with or responding to a variety of emergency situations, including natural phenomena such as hurricanes. These integrated emergency plans are developed in a coordinated manner between the facility licensee and State and local authorities, with oversight of the NRC and the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA). Emergency response for the sites is periodically evaluated by the NRC, and additional training and drills are conducted between these evaluated exercises to help further prepare for a wide spectrum of emergencies, including hurricanes. During these exercises, the NRC works closely with DHS/FEMA in evaluating the acceptability of the emergency plans. The NRC evaluates onsite response capabilities and integration of onsite and offsite preparedness, and then reviews the findings that DHS/FEMA makes regarding offsite emergency planning.

The NRC has exercised its key responsibilities in coordination with DHS and other Federal agencies under the National Response Plan (NRP). In accordance with the NRP, the NRC is the coordinating agency for incidents involving facilities and/or materials licensed by the NRC or an Agreement State. Accordingly, the NRC leads the Federal-level response functions identified in the Nuclear/Radiological Incident Annex with support provided by the cooperating agencies, such as the U.S. Department of Energy (DOE) and the U.S. Environmental Protection Agency (EPA). In cooperation with its Federal partners, the NRC implemented the NRP for Hurricane Katrina.

NRC INCIDENT RESPONSE PROGRAM

The NRC Operations Center, located at its Headquarters Office in Rockville, Maryland, is continually staffed with qualified personnel, who have the expertise and ability to evaluate events and alert NRC management, other Federal partners, and licensees, as necessary, to properly respond to unfolding events. Over the years, the NRC has taken several steps to enhance its emergency preparedness and response capabilities. These include increased staffing and modernization of facilities and equipment, more frequent exercises with other Federal agencies, and increased interaction with our international partners to gain knowledge of incident response activities in other countries. The NRC is also playing an active role in enhancing incident response capabilities for radiological emergencies and incidents by conducting tabletop exercises with Federal and State emergency response organizations and outreach activities with local stakeholders. During preparation and response to

emergencies, the Agency also discharges its responsibility to communicate developments to Congressional delegations and State executives, as appropriate.

The NRC is capable of responding to multiple events, affecting multiple plants at the same time. This was demonstrated when the NRC was responding effectively to Hurricane Katrina while simultaneously participating in a biennial emergency exercise at the Monticello Nuclear Plant in Minnesota on August 30, 2005. The NRC also responded successfully to multiple events during the August 2003 electrical grid collapse in the northeast and Midwest, which resulted in automatic reactor shutdowns at nine U.S. nuclear powerplants and the loss of offsite power at eight plants.

PREPAREDNESS FOR HURRICANE SEASON

The NRC and its licensees routinely monitor, prepare for, and respond to hurricanes using well-established procedures. The NRC requires that each nuclear powerplant shut down under weather conditions specific to each site. For example, the Waterford 3 plant began to shut down the day before Hurricane Katrina made landfall in Louisiana, based on projected sustained wind speeds exceeding 74 miles per hour.

The NRC has an established hurricane response program that is implemented each year during hurricane season, from June 1 through November 30. The NRC has responded to hurricanes with nuclear powerplants in their direct paths. Throughout the hurricane season, the NRC monitors potentially hazardous weather conditions in the Atlantic and Pacific Oceans, the Caribbean Sea, and the Gulf of Mexico. For the Atlantic basin, the NRC monitors tropical storm formations developing as far away as the African coast. The NRC relies on hurricane tracking computer programs and data provided by the National Oceanic and Atmospheric Administration that provides current and projected information about developing storms and their proximity to the U.S. coastline.

At the beginning of each hurricane season, nuclear powerplant licensees prepare well in advance by updating procedures and assessing their sites for readiness. For an approaching hurricane, a licensee's response would typically include identification of emergency staffing, plans for activation of emergency support facilities, testing of routine and emergency communications, equipment readiness checks, and updating of contact information with Federal, State, and local agencies.

RESPONSE TO HURRICANE KATRINA

For Hurricane Katrina, the NRC and its licensees took aggressive and prudent steps to prepare for its impact. The NRC and nuclear powerplant licensees began preparations before Katrina first made landfall in Florida on August 25, 2005. The NRC tracked the hurricane's status carefully from its inception as Tropical Depression 12 on August 24, 2005, when it was located well off the coast of Florida. The NRC's Region II office in Atlanta, Georgia, initially tracked the storm and issued daily weather updates to alert the Commission, NRC Headquarters, and regional personnel of this storm. The NRC Region II office coordinated with DHS/FEMA's Atlanta regional office, the State of Florida, and NRC licensees prior to the storm becoming a hurricane, and maintained communications throughout the passage of the hurricane over Florida.

Two nuclear powerplants in Florida had the potential to be affected by the hurricane, but were never in its direct path. The Turkey Point plant in Florida City and the Saint Lucie plant on Hutchinson Island implemented emergency preparations to ensure the facilities were fully prepared. The NRC issued status reports for these plants to keep stakeholders informed and NRC's site resident inspectors monitored site conditions and implementation of the licensee's established procedures for hurricane preparations.

When the storm passed west of longitude W87 on August 27, 2005, NRC's Region IV office in Arlington, Texas, monitored Hurricane Katrina as it moved into the Gulf of Mexico. The NRC Region IV Operations Center coordinated with Louisiana and Mississippi State officials and, on August 28, 2005, an NRC State/Federal Liaison Officer was dispatched to FEMA's regional office in Denton, Texas. In accordance with the NRC's incident response program, the Chairman of the NRC and NRC senior staff led the agency's response to Hurricane Katrina in both Headquarters and Region IV. Before Hurricane Katrina's arrival along the Gulf Coast States, the NRC staffed its Headquarters and Region IV Operations Centers with experts to prepare for any unforeseen circumstances, and NRC Region IV dispatched additional inspection staff to augment the permanently assigned resident inspectors at nuclear powerplants in Louisiana and Mississippi.

The Grand Gulf plant in Port Gibson, Mississippi, the River Bend plant in Saint Francisville, Louisiana, and the Waterford 3 plant were more impacted by Hurri-

cane Katrina than the plants located in Florida. Before, during, and after the storm's passage, the NRC closely monitored onsite and offsite activities at each of these sites by maintaining staff in NRC's Headquarters and Region IV Operations Centers and at the sites. The NRC held routine conference calls with the State of Louisiana and the parishes surrounding the Waterford 3 site and supported the State of Louisiana's Emergency Operations Center in Baton Rouge. The NRC provided status information on the conditions and the operational status of nuclear powerplants and materials facilities in the States of Louisiana and Mississippi for the Federal Joint Field Office, which was established following DHS' declaration of an incident of national significance for Hurricane Katrina on August 30, 2005.

All three nuclear powerplants were essentially undamaged by the hurricane. However, land-line communications with the Waterford 3 site were lost because of flooding in the New Orleans area. In addition, offsite power was lost because of instability in the regional electrical grid. Following the loss of offsite power, electrical power for key safety systems for the Waterford 3 plant was supplied automatically by the plant's standby diesel generators. To address the loss of land-line communication, extra land lines were installed and satellite communications equipment was employed for communication following the hurricane's passage at this site. Backup satellite communications equipment was employed by NRC staff at the site, NRC Region IV, and NRC Headquarters to ensure continuous communications with the Waterford 3 site.

Prior to restart of the Waterford 3 plant, the NRC staff independently verified that key plant systems and structures were able to support safe operations at the plant, and in cooperation with DHS/FEMA, the NRC confirmed that the offsite infrastructure was adequate to support plant operations. An NRC regional team evaluated onsite emergency preparedness and the readiness of the plant for restart. Also, the NRC participated in the DHS/FEMA Disaster Initiated Review Team for the offsite assessment of the Waterford 3 site by reviewing and evaluating offsite emergency preparedness and response capabilities. After successful completion of these evaluations, the Waterford 3 powerplant resumed operation, supplying electricity to support recovery of the regional infrastructure.

NRC RESPONSE FOR RADIOACTIVE MATERIAL CONTROL

NRC and the Agreement States of Alabama, Louisiana, and Mississippi share the regulatory oversight responsibilities for ensuring the safety and security of radioactive materials in the region affected by Katrina. These Agreement States have regulatory authority over approximately 98 percent of the total number of radioactive materials licensees located within their borders. The NRC has jurisdiction for the remainder, which includes Federal facilities such as Veterans Hospitals and the U.S. military.

The majority of the NRC and Agreement State licensed material is in the form of sealed sources. Devices containing sources of the greatest concern from a radiological standpoint are designated as Category 1 or 2 in the International Atomic Energy Agency (IAEA) Code of Conduct on the Safety and Security of Radioactive Sources and are designed and manufactured in accordance with strict NRC regulatory requirements. To ensure that the source is designed to meet or exceed standards as specified in the regulatory requirements, the NRC or its equivalent Agreement States must review the manufacturers' application to produce a sealed source. Typically, these sources are doubly encapsulated in stainless steel and are manufactured to withstand accidental conditions such as immersion, fire, and drop/crushing. When not in use, the sources are stored in a shielded configuration to ensure the safety of the general public, as well as workers.

The NRC worked closely with its Agreement State partners and its own materials licensees (Federal facilities) in those States to monitor the safety and security of radioactive sources of concern during the recovery from Hurricane Katrina. The NRC contacted its IAEA Category 1 and Category 2 licensees (Federal facilities) in the affected States to obtain additional information on the status and security of facilities and materials listed in an existing database. This database list included information on facilities regulated by the NRC, Louisiana, Alabama, and Mississippi, which was updated daily. Coordination with the Agreement States proved successful in obtaining current information regarding the control and status of radioactive materials. The NRC, through its Agreement State liaisons, was able to verify the control and status of all IAEA Category 1 and Category 2 sources located in Alabama and Mississippi within days of Katrina's landfall. The NRC continues to coordinate with Louisiana to confirm the continued control of radioactive sources and licensed facilities in locations with limited access.

The NRC also discussed the availability of resources for assisting in recovery efforts with its Federal partners, including the Center for Disease Control, DOE, EPA, FEMA, and the U.S. Army Corp. of Engineers. The NRC also assisted Louisiana with its request for use of the DOE's Aerial Monitoring System to detect any misplaced or missing radiation sources. On September 13, 2005, the NRC sent staff to the Louisiana Department of Environmental Quality (LDEQ) for an extended period to enhance communications and provide assistance at facilities that contained IAEA Category 1 and 2 sources in Louisiana. On September 26, 2005, the NRC sent additional staff to Baton Rouge and Lafayette, Louisiana, to provide support that includes participation in LDEQ field teams.

In addition, the NRC provided current information regarding the status of radioactive sources for situation reports (SITREPs) required by DHS, and developed the DHS/NRC Joint Bulletin, "Assessment of Security of Radioactive Sources in the Hurricane Affected Area." The NRC remains ready to provide staff with technical expertise concerning radioactive materials safety and control to DOE, EPA, FEMA, and State radiological emergency response teams.

CONCLUSION

For more than 25 years, the NRC has implemented improvements in its emergency preparedness and incident response programs, and continues today to be vigilant in ensuring the adequate protection of public health and safety, common defense and security, and the environment before, during, and after natural or man-made emergencies. During this time, the combination of robust nuclear powerplant design and construction, comprehensive emergency preparedness programs and implementing procedures which improved significantly after September 11, 2001, and well-trained staff has proven effective against severe natural phenomena. As the response to Hurricane Katrina demonstrates, NRC and its licensees' emergency preparedness capabilities and established procedures have proven to be effective in responding to events at licensee facilities, including natural phenomena. We are committed to continuous assessment and enhancement of these capabilities. As it has done routinely following previous hurricanes, the NRC is conducting a lessons learned from Hurricane Katrina. The NRC has already applied insights from the experience with Hurricane Katrina in preparing for and responding to Hurricanes Rita and Wilma and will further enhance coordination with DHS/FEMA to ensure effective emergency preparedness and timely return to service of nuclear powerplants. The NRC will continue to exercise strong oversight of each facility it licenses and work closely with Federal, State, and local agencies to protect the public.

I appreciate the opportunity to appear before you today, and I welcome your comments and questions.

NRC PREPARATIONS AND RESPONSE TO HURRICANE KATRINA

AUGUST 24, 2005.—(FIVE DAYS BEFORE LANDFALL IN LOUISIANA)

• NRC's Headquarters Operation Center (HOC) in Rockville, Maryland and Region II office in Atlanta, Georgia, begin to track Tropical Depression 12 as it formed 270 miles ESE of the SE coast of Florida.

• NRC Region II began implementation of NRC Procedure #2651 for Hurricane Response.

• NRC Region II issued a Tropical Weather Update to NRC Headquarters and NRC Regions.

• NRC Region II coordinated with the Department of Homeland Security (DHS)/ Federal Emergency Management Agency's (FEMA) Region IV office in Atlanta, Georgia, the State of Florida, and applicable NRC licensees.

• NRC issued status reports for the two powerplants in Florida, the Turkey Point plant in Florida City and the Saint Lucie plant on Hutchinson Island, that had the potential to be affected by the hurricane. These status reports kept stakeholders informed about the preparations that the powerplant licensees were taking in response to the approaching storm.

• NRC's site resident inspectors at the Turkey Point and Saint Lucie plants examined site conditions and monitored the licensees' implementation of their established procedures for hurricane preparations.

• NRC Headquarters received a "Notification of an Unusual Event" declaration from the Turkey Point and Saint Lucie powerplant licensees. This is the lowest level of emergency classification for events at nuclear powerplants. The licensees made the declarations in response to the issuance of the hurricane warning for Tropical

Depression 12. NRC notified other Federal agencies of the declaration, consistent with established procedures.

AUGUST 25, 2005—(FOUR DAYS BEFORE LANDFALL IN LOUISIANA)

• NRC Region II issued a Tropical Weather Update on Tropical Storm Katrina.
• As it approached the east coast of Florida, the storm strengthened to a Category 1 hurricane and, as predicted by the hurricane tracking software utilized by the NRC, it passed between the Turkey Point and Saint Lucie powerplants. There were no impacts to either powerplant except heavy rain.
• NRC Region II was in communication with the Turkey Point and Saint Lucie powerplants prior to the storm becoming a hurricane and during the hurricane's passage.

AUGUST 26, 2005—(THREE DAYS BEFORE LANDFALL IN LOUISIANA)

• NRC Region II issued a Tropical Weather Update on Hurricane Katrina.
• NRC resident inspectors at the Grand Gulf powerplant in Port Gibson, Mississippi, the River Bend powerplant in Saint Francisville, Louisiana, and the Waterford 3 powerplant in Killona, Louisiana, began to closely monitor licensee preparations for the approaching hurricane.
• NRC Region IV in Arlington, Texas, prepared staffing plans for onsite resident inspector coverage at the Grand Gulf, River Bend, and Waterford 3 powerplants during the weekend.

AUGUST 27, 2005—(TWO DAYS BEFORE LANDFALL IN LOUISIANA)

• As Hurricane Katrina passed west of longitude W87, NRC Region II transferred the tracking of the hurricane to NRC Region IV, in accordance with established hurricane tracking procedures. NRC Region IV implemented NRC Procedure #2651 for Hurricane Tracking.
• NRC Region IV dispatched a region-based inspector to augment the resident inspector staff at the Waterford 3 powerplant. Resident inspectors at the Grand Gulf, River Bend, and Waterford 3 powerplants were prepared to provide 24-hour coverage beginning August 28, 2005, in accordance with NRC procedures.
• NRC Headquarters received a "Notification Of an Unusual Event" declaration from the Waterford 3 powerplant due to the issuance of a hurricane warning. NRC then notified the Department of Agriculture, Department of Energy, Department of Health and Human Services, DHS/FEMA, and the Environmental Protection Agency, consistent with established procedures.

AUGUST 28, 2005—(DAY BEFORE LANDFALL IN LOUISIANA)

• NRC Headquarters made numerous phone calls in the morning to update NRC Regions on the hurricane preparations being performed at the Grand Gulf, River Bend, and Waterford 3 powerplants.
• The NRC Chairman participated in multiple Executive Team briefings with senior Headquarters and NRC Region IV management on Hurricane Katrina preparations.
• In accordance with plant procedures, the Waterford 3 powerplant shut down as a precautionary measure, based on projected wind speeds exceeding 74 miles per hour.
• At 1600 EST, the NRC entered Monitoring Mode. NRC RIV activated and fully staffed its Incident Response Center. The NRC HOC and NRC Region IV continued to closely monitor the onsite and offsite activities at powerplants located along the Gulf Coast.
• NRC Region IV dispatched a NRC State/Federal Liaison Officer to FEMA's Region VI Office in Denton, Texas.
• NRC initiated routine conference calls with the State of Louisiana and the parishes surrounding the Waterford 3 site, and offered support to the State of Louisiana's Emergency Operations center in Baton Rouge.
• NRC Region IV contacted and offered assistance to the Louisiana Department of Environmental Quality (LDEQ) and made arrangements for further contacts with them after the hurricane passed. NRC management was briefed on NRC and Agreement State materials licenses in Louisiana.
• NRC issued a press release on Hurricane Katrina preparations.

AUGUST 29, 2005—(LANDFALL OF HURRICANE KATRINA)

• Before Hurricane Katrina made landfall, NRC staffed the Homeland Security Operations Center (HSOC), and NRC HOC and NRC RIV began receiving informa-

tion from the Grand Gulf, River Bend, and Waterford 3 powerplants' Emergency Response Data System, which provides plant status and weather information directly to NRC.

• The NRC Chairman participated in multiple Executive Team briefings on the status of Hurricane Katrina and NRC licensee activities.

• NRC HOC and NRC Region IV continued routine communications with the Waterford 3, River Bend, and Grand Gulf powerplants throughout the hurricane's passage. NRC HOC was fully staffed with four teams of specialists. Members became familiar with the Waterford 3 plant's flooding and wind design bases.

• NRC Region IV began daily contacts with the States of Mississippi and Louisiana to receive status reports and to offer assistance with regard to materials licensees.

AUGUST 30, 2005—(DAY AFTER LANDFALL IN LOUISIANA)

• NRC HOC staff exercised responding to multiple events. NRC HQ management held periodic briefings on the status of Hurricane Katrina during the emergency preparedness exercise with the Monticello Nuclear Station.

• NRC Headquarters and NRC Region IV worked closely with the licensee that operates the Grand Gulf, River Bend, and Waterford 3 nuclear plants to identify potential supplemental communications resources. Satellite communications were used to continue communications with the Waterford 3 plant following loss of phone capability due to local flooding.

• NRC issued a press release on Hurricane Katrina monitoring activities.

AUGUST 31, 2005—(TWO DAYS AFTER LANDFALL IN LOUISIANA)

• As part of NRC Headquarters and NRC Region IV coordination efforts with Agreement States and the Federal Government on the security and status of radioactive materials in the Gulf Coast area, NRC Headquarters coordinated with DHS on a request by the LDEQ for assistance in obtaining security guards for a radioactive source manufacturing facility located near New Orleans.

• NRC used an existing database to develop a report summarizing the status of Category 1 and Category 2 sources licensed by NRC, Alabama, Louisiana, and Mississippi and shared this information with DHS through the HSOC. Routine updates of the report were transmitted to HSOC from August 31, 2005, through September 20, 2005.

SEPTEMBER 2, 2005—(FOUR DAYS AFTER LANDFALL IN LOUISIANA)

• NRC Headquarters and NRC Region IV assisted LDEQ with a request to obtain surveys of New Orleans by using DOE's Aerial Monitoring System to detect any misplaced or stolen radiation sources.

• NRC Headquarters and NRC Region IV coordinated with a DOE liaison at HSOC to assist the Mississippi Department of Health in evaluating the use of DOE's Aerial Monitoring System to detect misplaced or stolen radiation sources in Mississippi.

SEPTEMBER 5–8, 2005—(WEEK AFTER LANDFALL IN LOUISIANA)

• At the request of DHS/FEMA Region VI, NRC provided two Regional State/Federal Liaison Officers to serve as members of the Disaster Initiated Review Team for the offsite assessment of the Waterford 3 site to confirm that the offsite infrastructure was adequate to support plant operations.

• On September 6, 2005, NRC returned to Normal Mode and NRC Region IV shut down its Incident Response Center.

• NRC participated in DHS/FEMA's assessment of offsite emergency preparedness and response capabilities for the Waterford 3 plant. Prior to restart of the Waterford 3 plant, the NRC staff independently verified that key plant systems and structures were able to support safe operations at the plant.

• On September 8, 2005, NRC issued a press release on NRC's oversight of the Waterford 3 restart activities.

SEPTEMBER 9–13, 2005—(SECOND WEEK AFTER LANDFALL IN LOUISIANA)

• On September 9, 2005, NRC Headquarters notified the licensee of the Waterford 3 powerplant (by phone and followed up by letter) that the NRC concurred with the assessment that the emergency preparedness infrastructure, both onsite and offsite, was adequate for the restart of the plant.

• On September 9, 2005, NRC issued a press release on the restart of Waterford 3.

• The NRC assisted Centers for Disease Control and Environmental Protection Agency representatives on the status of Category 1 and 2 sources licensed by Louisiana and Mississippi. Devices containing sources designated as Category 1 or 2 in the International Atomic Energy Agency Code of Conduct on the Safety and Security of Radioactive Sources are designed and manufactured in accordance with strict regulatory requirements.
• NRC assisted the LDEQ with preparation of written precautions and information for emergency workers entering the New Orleans area.
• On September 13, 2005, NRC dispatched a materials inspector to the LDEQ. The NRC inspector worked closely with the Louisiana Radiation Control Program Director and served as the primary communicator between LDEQ and the NRC Region IV.

SEPTEMBER 26–OCTOBER 5, 2005—(FOURTH AND FIFTH WEEKS AFTER LANDFALL IN LOUISIANA)

• NRC sent additional staff to Baton Rouge and Lafayette, Louisiana, to provide support that included participation in LDEQ field teams. NRC assisted with inspections and communications through October 5, 2005.

RESPONSES BY NILS J. DIAZ TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Mr. Chairman, as I understand it, the NRC had very good information from and communication with powerplant licensees during Hurricane Katrina. I know accounting for and securing the more diffuse licensees, such as universities, medical facilities, and industrial sources is a significant challenge. How long did it take NRC to be able to determine that nuclear materials held by non-powerplant licensees were secure? What lessons have you learned from that experience?

Response. The U.S. Nuclear Regulatory Commission (NRC) and the Agreement States of Alabama, Louisiana, and Mississippi share the regulatory oversight responsibilities for ensuring the safety and security of radioactive materials in the region affected by Katrina. These Agreement States have regulatory authority over approximately 98 percent of the total number of radioactive material licensees located within their borders. The NRC has jurisdiction over the remainder, which includes Federal facilities such as U.S. military installations and medical facilities operated by the Veterans Administration.

Before Hurricane Katrina made landfall in Louisiana, NRC coordinated with Louisiana on the State's preparations for the hurricane, including activities involving Louisiana licensees. NRC Region IV contacted and offered assistance to the Louisiana Department of Environmental Quality (LDEQ) and made arrangements for further contacts with LDEQ after the hurricane passed. NRC management was briefed on NRC and Agreement State material licensees in Louisiana and NRC provided staff to the Homeland Security Operations Center. NRC Region IV also coordinated with FEMA Region VI and provided staff to the Regional Response Coordination Center.

The NRC worked closely with its Agreement State partners and its own material licensees (Federal facilities) in those States to monitor the safety and security of radioactive sources of concern during the recovery from Hurricane Katrina. The NRC contacted its licensees (Federal facilities) possessing International Atomic Energy Agency Category 1 and Category 2 sources located in the affected States to obtain additional information on the status and security of facilities and materials listed in an existing database.

NRC confirmed that sources of concern at Federal facilities were secure by September 8, 2005. For sources regulated by the Agreement States, on September 1, 2005, Alabama confirmed its Category 1 and 2 sources were secure and, on September 7, 2005, Mississippi confirmed all Category 1 and 2 sources had been accounted for, except for one at the Stennis Space Center; this source was confirmed as secure on September 12, 2005. By October 4, 2005, the LDEQ had visited each Category 1 and 2 facility in Louisiana that was affected by the hurricane and had reasonable assurance that sources were secure because the buildings were structurally sound and locked, and it appeared that vandalism had not occurred. Local law enforcement and the National Guard were used throughout the recovery period to provide security across the New Orleans area. NRC is continuing to work closely with the LDEQ to assess further the status of radioactive sources within its regulatory purview.

The NRC discussed the availability of resources for assisting in recovery efforts with its Federal partners, including the Centers for Disease Control, DOE, EPA, FEMA, and the U.S. Army Corps of Engineers. The NRC also assisted Louisiana

with its request for use of the DOE's Aerial Monitoring System to detect any misplaced or missing radiation sources. On September 13, 2005, the NRC dispatched staff to the LDEQ for an extended period to enhance communications and provide assistance. On September 26, 2005, the NRC dispatched additional staff to Baton Rouge and Lafayette, Louisiana, to provide support that included participation in LDEQ field teams.

NRC applied insights from the experience with Hurricane Katrina in preparing for and responding to Hurricanes Rita and Wilma. For example, because the communication infrastructure was still challenged after Hurricane Rita made landfall, response teams dispatched on September 26, 2005, to Louisiana were equipped with additional communications equipment, including cell phones that can be used when public telephone networks are not available or are overloaded. NRC also reached out to Texas and Louisiana in advance of Hurricane Rita making landfall to discuss actions proposed by the States to assure that their licensees were taking action to secure large sources in advance of the storm making landfall.

Currently, NRC is evaluating lessons learned from Hurricane Katrina and has established an agency-wide task force that will review NRC, State, and licensee preparations for and response to natural phenomena, such as hurricanes, to identify and recommend areas for improvement. The task force is expected to deliver a report with recommendations to the NRC Executive Director for Operations in February 2006. Depending on the conclusions of the task force and direction from the Commission, regulatory changes or other actions could be proposed. The final report will be made public.

Question 2. Mr. Chairman, communications are critical to NRC's successful monitoring of powerplant licensees in the event of a hurricane. Would you comment on NRC's use of various modes of communications, such as standard phone lines, satellite or other devices, Internet during Hurricane Katrina, have you assessed the merits and limitations of each, and do you deploy all of them during a hurricane event?

Response. NRC's experience in responding to Hurricanes Katrina and Rita has confirmed the importance of deploying and using diverse communication systems. Even without significant damage to the telecommunication infrastructure, commercial systems may become overwhelmed with the high volume of communication traffic in the wake of an emergency. Our deployment of a variety of communication systems contributed to our success in maintaining contact with our licensees and response teams. NRC is currently evaluating communication challenges as part of our ongoing lessons learned efforts and will evaluate opportunities for additional enhancements to our response program in the area of communications.

The NRC relies on several methods for communicating with powerplant licensees and NRC's resident inspector staff. Licensees may communicate with NRC through the use of commercial public telephone network systems, the Federal Telecommunications System (FTS), or cellular communications. In addition to the commercial telecommunication lines maintained by licensees, the NRC provides a limited number of Emergency Telecommunications System (ETS) lines using direct access lines to the Federal Government's long distance network, or FTS provider, to nuclear powerplants. NRC resident inspector offices are also connected to the FTS network. These many systems for communication provide NRC the capability of maintaining contact with the licensees in the event of a hurricane.

At nuclear powerplants, these lines are routed to the plant control room and the licensees' emergency operations facilities, where key response personnel are located during an event. These dedicated lines provide access to long distance networks independent of the local telephone switch.[1] In addition, if a problem occurs with the dedicated direct access FTS lines, the NRC has provided for telephone service priority with the government contractor to prioritize restoration or repair of the lines. FTS communication lines located in the control room that link the NRC and its licensees are tested daily. Licensees can also communicate with NRC through the use of cellular service, although this would typically be used as a backup if commercial or FTS lines were not available. NRC resident offices are also equipped with cell phones and satellite phones which are tested regularly.

NRC regional offices are equipped with diverse modes of communication to support their response functions and teams, including response teams dispatched in the field. Communication devices include a mix of cell phones, secure cell phones, portable satellite phones, and hand-held walkie-talkies for the NRC response teams.

[1] Some licensees have elected to use preexisting licensee communication networks to provide access to long distance networks independent of the local telephone switch. This option was approved by the Commission in 2000.

These communication devices and systems are tested regularly. NRC regional response teams also have access to the Government Emergency Telephone System (GETS) which provides priority service to GETS card holders during emergencies when commercial phone systems and the FTS system may experience a high volume of communication traffic.

The NRC Region IV incident response center in Arlington, Texas, which dispatched several staff members to Louisiana and Mississippi for responses to Hurricanes Katrina and Rita, supplemented its communication devices in advance of the 2005 hurricane season to provide additional diversity in the available means of communication. All regional communication devices and services noted above, except for walkie-talkies, were deployed with the NRC Region IV responders during the response to Hurricanes Katrina and Rita. In addition to the communication devices deployed from Region IV, NRC deployed additional satellite phones from other NRC regional offices to supplement communication devices available to NRC staff and the licensees in Louisiana following the passage of Hurricane Katrina.

As you are aware, there was significant damage to the communication infrastructure in the New Orleans area as a result of Hurricane Katrina. Surrounding areas in Louisiana and in Mississippi also experienced some telecommunication disruption. The disruption of telecommunication service affected both the River Bend and Waterford-3 powerplants in Louisiana. In addition, the Grand Gulf powerplant in Mississippi also experienced some disruption of telecommunication service following passage of the storm.

For the River Bend and Grand Gulf powerplants, the licensee and NRC staff relied upon a combination of commercial land lines, FTS service, cell, and satellite phones, and use of the GETS service for communications. Commercial and FTS systems experienced frequent temporary disruption because of the high volume of calls being placed on these lines. The NRC ETS lines installed in the River Bend and Grand Gulf control rooms experienced temporary disruptions due to problems that the service provider experienced with equipment in the New Orleans area. The infrastructure for these direct access lines was routed through New Orleans. However, NRC and the licensees were able to maintain contact through the plant control rooms and emergency operations facilities via commercial lines. Satellite and cell phones were used intermittently during periods when communication traffic volume was high and calls could not be placed successfully via commercial and FTS lines.

For the Waterford-3 plant, communication systems experienced more substantial damage, and normal communication systems were unavailable for a longer period of time. Prior to Hurricane Katrina making landfall, the licensee had two satellite phones available for communicating with the NRC, State, and local response organizations. Immediately following passage of Hurricane Katrina, NRC relied upon use of cell and satellite phones for communication with the plant and resident inspector staff. In addition to these phones, the licensee had an "internal" phone system available that connected the licensee's corporate center in Jackson, Mississippi, with the River Bend, Grand Gulf, and Waterford-3 plants. NRC was able to communicate with licensee management through this commercial communication network throughout the recovery period. Within days of the passage of Hurricane Katrina, the licensee contracted with a commercial vendor to obtain a mobile satellite phone unit which contained six satellite phone lines and additional portable satellite phones for use in communicating with NRC, State, and local response organizations. This improved communications between NRC and the Waterford-3 site, but was only considered supplemental since reception through the satellite service may be disrupted during inclement weather. The licensee had additional land communication lines installed within days that were routed outside the New Orleans area, specifically through Little Rock, Arkansas, to provide more stable communication systems. These land lines were used for routine communications between NRC and staff at Waterford-3 until the pre-Katrina land lines routed through New Orleans were restored weeks later.

Even with the installation of the additional land lines, commercial phone service was occasionally unavailable due to the high volume of communication traffic over the public telephone network system. NRC relied upon use of cell phones and the GETS service to communicate with its response staff and resident inspectors as a supplemental backup during these periods. Because the volume of communication traffic remained high and the commercial telecommunication infrastructure capacity was limited until land lines and switch networks could be restored or circuits rerouted, the licensee deployed cell phones to State and local response organizations and NRC Region IV. During periods when other commercial systems were overwhelmed with call traffic, these cell phones could be operated as a long-range, digital walkie-talkie allowing users to communicate even when the network is down. The NRC Region IV office had procured cell phones to supplement its communica-

tions kits in advance of Hurricane Katrina, but these were not received until just before Hurricane Rita developed. NRC Region IV deployed cell phones with response teams that were sent to Louisiana following Hurricane Rita, and these cell phones provided reliable communications when other cell and satellite phones experienced reception disruptions.

NRC did use the internet to communicate with its resident inspectors and licensees during the response to Hurricane Katrina using land lines. Internet and e-mail connections were reliable with the licensee's corporate offices in Jackson, Mississippi, where communication systems were not significantly disrupted. NRC resident offices at the Grand Gulf, River Bend, and Waterford-3 plants were unable to connect to the NRC Wide Area Network or the internet for some period because they are serviced by communication lines that were routed through New Orleans. The switch network for these land lines was unavailable for a period of time until circuits could be rerouted.

Question 3. Do you find an Operations Center capability at headquarters to be a critical component of the NRC's ability to track and respond to hurricanes?

Response. Yes, the NRC Headquarters Operations Center is a critical component of NRC's ability to track and respond to hurricanes. The NRC maintains a designated incident response organization at its Headquarters office in Rockville, Maryland as well as its four Regional offices (Region I: King of Prussia, Pennsylvania; Region II: Atlanta, Georgia; Region III: Lisle, Illinois; Region IV: Arlington, Texas).

NRC routinely prepares for, monitors, and responds to every hurricane using established response procedures. Pursuant to its assigned role under the National Response Plan and a Memorandum of Understanding between the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA) and NRC, NRC routinely coordinates with DHS/FEMA in advance of any hurricane making landfall and potentially affecting NRC-licensed facilities, such as nuclear powerplants or materials facilities.

The NRC Headquarters Operations Center is continually staffed (24 hours a day, 365 days a year) for receiving emergency and nonemergency notifications from NRC licensees, government agencies, State Agencies, and/or private entities. NRC Headquarters maintains the leadership in integrating the agency's response to hurricanes through internal notifications and notifications to other Federal departments/agencies and, if appropriate, licensees, Members of Congress, and State agencies. The Chairman has ultimate authority for all NRC functions pertaining to an emergency involving an NRC licensee. The Chairman may delegate, in whole or in part, his authority to another Commissioner or other NRC official. NRC Regions I, II, III, and IV maintain an incident response program under the leadership of the respective Regional Administrator with oversight by the NRC Headquarter's Executive Team.

STATEMENT OF SANDY K. BARUAH, ACTING ASSISTANT SECRETARY OF COMMERCE FOR ECONOMIC DEVELOPMENT

Chairman Inhofe, Ranking Member Jeffords, members of the committee, thank you for the opportunity to testify on the Economic Development Administration's (EDA) response to Hurricane Katrina and the Agency's current actions in helping the Gulf Coast rebuild.

This is a timely matter for me to comment on as I have just returned from the affected region. Yesterday, I saw firsthand the devastation wrought on the great City of New Orleans, and met with Mayor Kip Holden of Baton Rouge. I can tell you that as crushing as was the blow that Katrina dealt to that region, the people of Louisiana, Mississippi and Alabama are more determined to recover and rebuild their lives, their homes and their businesses. Our Nation faces an unprecedented challenge—and an opportunity—to recover from this tragedy.

As a first priority, I am thankful to be able to report that no EDA personnel or their families suffered fatality or injury as result of Hurricanes Katrina, Rita or Wilma. Our Economic Development Representative in Louisiana safely evacuated with her family prior to Katrina, however, her family home in New Orleans was irreparably damaged.

Moving forward, the Administration, the Department of Commerce, and EDA are committed to the economic revitalization of the Gulf Coast. As you are aware, the President has called for considerable funding for efforts that are already underway to promote the region's recovery and economic revitalization. The focus of these efforts is to implement a regional, collaborative, multi-pronged approach aimed at providing appropriate incentives and targeted federal assistance to create the conditions in which the private sector will be willing to invest in the region's economic recovery. Additional funding is not being sought for EDA; rather, the agency will

be participating in recovery efforts using existing resources. EDA views this at the most efficient and effective way to get people back to work and businesses, both large and small, back on their feet and an appropriate approach given the other resources being devoted to Gulf Coast recovery.

BACKGROUND: EDA DISASTER ASSISTANCE

EDA promotes innovation and competitiveness, preparing American regions for growth and success in the worldwide economy.

EDA has a long and successful history of supporting long-term recovery following natural disasters. EDA's participation in major disaster recovery efforts has traditionally supplemented the lead roles assigned to the Federal Emergency Management Agency (FEMA).

Under existing statutory authority, EDA administers disaster program funds through targeted grants to disaster-impacted communities designed to achieve long-term economic recovery. EDA disaster recovery efforts assist communities in shifting their focus when appropriate from the short-term emergency response to the long-term economic impacts of the disaster, and enabling the development of an economic recovery program that reflects local priorities.

While early EDA investments focus on the important first post-disaster steps of planning, assessment and technical assistance, the most critical need after rescue and recovery efforts are completed is to get people back to work and ensure continued and strategic economic recovery. This is accomplished through implementation of investments in support of job creation, retention and private investment. EDA's regional office staff deploys and works closely with impacted State and local governments, special districts, nonprofit organizations, and businesses in providing technical assistance in support of EDA program investments.

Immediately following a disaster EDA regional staff use local and State contacts to identify critical implementation investments, namely infrastructure improvements, impacted by or relevant to the disaster event. Because of the competitive nature of our grant awarding process, EDA has the flexibility to target our existing resources to those areas affected by disasters quickly.

Additionally, under the National Response Plan, EDA represents the Department of Commerce as a Primary Agency in Emergency Support Function (ESF) No. 14, for Long-Term Community Recovery and Mitigation. ESF No. 14 provides a framework for federal government support to State, regional, local and tribal governments, nongovernmental organizations and the private sector designed to enable community recovery from the long-term consequences of an Incident of National Significance.

Finally, FEMA may ask EDA to perform economic impact evaluations or carry out other specific tasks through special "mission assignments." Past FEMA mission assignments have tasked EDA to perform economic impact assessments in North Carolina, Virginia and New Jersey resulting from Hurricane Floyd.

EDA RESPONSE TO HURRICANE KATRINA

EDA anticipated, prepared and responded quickly to Hurricane Katrina.

Under the direction of Commerce Secretary Carlos Gutierrez, prior to Hurricane Katrina's landfall, EDA began preparing for its potential role in economic recovery efforts in the affected region, including identifying $4 million in funding to assist economic recovery priorities. Once the scope of Hurricane Katrina's damage became evident, EDA successfully reprogrammed $8.3 million in de-obligated funds (including the $4 million initially identified) to dedicate to the redevelopment effort. Secretary Gutierrez later announced this grant during a tour of the affected region. Consistent with EDA statute and regulation, the agency worked with State and local leadership to develop economic planning and technical assistance recovery projects in Alabama, Louisiana and Mississippi, and has obligated $8.8 million (including the $8.3 million reprogramming) for investments of $4 million each for Louisiana and Mississippi and two separate investments of $450,000 for economic planning and $390,000 for Economic Adjustment in Alabama.

In making these investments, EDA headquarters and regional staff devised and approved necessary measures to facilitate streamlined investment strategies and rapid deployment of funds to impacted states. This included making expedited processing of applications an immediate mission priority. EDA regional staff also worked directly with the three governors' offices to identify appropriate State agencies as recipients and, consistent with EDA's mission, to develop the appropriate scopes of work for the States.

Also, in the immediate aftermath of Hurricane Katrina, I established an internal taskforce of headquarters and regional staff to monitor and coordinate the bureau's

actions and response. I assigned EDA's Austin Regional Office Director, an experienced, SES-level career executive to lead this internal task force. EDA personnel continue to engage local and State leadership throughout the Gulf Coast, working to leverage existing resources in the broader economic development community to assist with near-term recovery priorities.

For example, working in cooperation with the Arkansas State University's Delta Center for Economic Development and other EDA grantees, EDA was able to secure the deployment of four EDA-funded "Netmobiles," minivans equipped with high-technology computer equipment and satellite Internet access, to Katrina-affected areas. Business counselors are currently using the Netmobiles to assist affected business owners in finding and acquiring the resources necessary to resume operations.

FUTURE EDA ASSISTANCE FOR GULF COAST RECOVERY

EDA will continue to work through its established economic development networks, including regional development organizations, universities, nonprofit and community- and faith-based organizations to leverage all available resources for the recovery effort.

In our supporting role, EDA can bring a variety of existing program resources to this task. EDA's principal program for addressing sudden and severe economic dislocation, including natural disasters, is its Economic Adjustment Program. This program utilizes a flexible and comprehensive set of tools to help impacted areas achieve long-term economic recovery, including:

- Augmenting the institutional capacity of State and local governments with EDA recovery planning or technical assistance investments focusing on job retention and job creation to offset the negative impacts of the disaster on the local economy;
- Supporting locally-directed mitigation efforts flowing from a strategic recovery planning process (and ultimately as part of a mitigation planning component of a long-term comprehensive economic development planning process) to safeguard jobs from the impact of future disasters; and
- Addressing State and local needs for new construction and post-disaster improvements to publicly-owned commercial or industrial facilities or infrastructure with EDA construction investments.

While our program tools are flexible, EDA must initially rely on its statute to identify those eligible to receive EDA investment dollars. Eligible recipients include State and local governments, public and private nonprofit organizations, and regional economic development districts. Businesses are not eligible for direct assistance under EDA's major programs. EDA does not have the capability, personnel or authority to administer direct loans to businesses. Additionally, the bureau would be challenged to adequately oversee new revolving loan funds (RLF), which have been an ongoing concern of the Department of Commerce's Office of Inspector General and once established, must be administered in perpetuity by EDA.

EDA-supported recovery efforts aim to produce quantifiable results for the areas impacted by the disaster. EDA designs its investments to ensure significant leveraging of private and nonprofit resources to guarantee accountability for the taxpayer dollars invested. Additionally, the bureau will consult and work closely with the Office of the Inspector General with regards to the award and administration of all Katrina related disaster recovery funds. EDA views the Office of Inspector General as a valuable partner in helping to ensure that federal resources are as effective as possible for the intended beneficiaries.

EDA investments in the Katrina affected region are administered by EDA's Atlanta and Austin regional offices. Just as the bureau has done in the past, EDA is able to respond to disasters of this magnitude by building upon our existing internal taskforce structure, with assistance from additional EDA personnel from headquarters and other regional offices that have disaster recovery experience.

REDEVELOPMENT STRATEGY

While it is important that federal, State, and local governments move as quickly as possible to address the economic impacts in the Gulf Coast region, economic revitalization efforts must also be based on a sound understanding of the economic landscape before and after the Hurricanes to ensure that federal efforts are market-based, enhance regional competitiveness, support long-term development of the regional economy, and achieve the intended results. To this end, it is vitally important to work not only with State and local officials, but also with the region's business leaders.

The Administration is focused on ensuring that economic recovery funding is effective and truly focused on rebuilding the Gulf Coast's economic infrastructure in

order to get people back to work and businesses up and running again. Working together with the private sector, we are determined to succeed in aiding those who need the assistance of an effective, coordinated federal, State and local response to rebuild the Gulf Coast's economic infrastructure. EDA is proud to play a supporting role in the coordinated federal response to this unprecedented natural disaster.

Thank you for allowing me to testify before you today. I am pleased to answer any questions you may have.

RESPONSE BY SANDY K. BARUAH TO AN ADDITIONAL QUESTION FROM SENATOR JEFFORDS

Question. Mr. Baruah, EDA excels in leveraging private sector resources to facilitate economic development. How do you propose to facilitate economic development in areas where the private sector has been almost wiped out and has limited resources?

Response. The key to the redevelopment and revitalization of the devastated areas of the Gulf Coast will be to create an environment in which the private sector is prepared to invest its capital in the region, which in turn retains and creates jobs. In a situation where vast geographic areas are devastated by a natural or man-made disaster, it is imperative that the redevelopment planning of such an area be led by the private sector. Private sector leadership is critical because the redevelopment strategy may include completely new industry sectors and development approaches than those that were previously part of the regional economy. Ultimately, solutions in scenarios like the one you have posed have less to do with EDA's current capabilities than they do with EDA's capacity to facilitate a private sector driven process.

Government, of course, can play an important role. EDA can assist with the development of locally determined long-term regional strategic plans in support of the economic recovery of the region. Additionally, EDA can invest in upgrading the region's critical core business infrastructure which in many cases is necessary to support business development and expansion. Nonetheless, any success in these efforts is based on a robust and close public-private partnership.

EDA has found this approach to be effective in other instances of sudden and severe economic dislocation where there previously had been little or no private sector involvement, such as the redevelopment of military installations under Base Realignment and Closure (BRAC). EDA has had success in transforming BRAC sites into successful private sector-led business and technology parks with substantial levels of private sector capital investment.

STATEMENT OF H. DALE HALL, DIRECTOR, U.S. FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

Mr. Chairman and members of the committee, my name is H. Dale Hall, Director of the U.S. Fish and Wildlife Service. Thank you for the opportunity to discuss the devastating impact Hurricane Katrina had on the Southeast region and the tremendous difference Service employees continue to make in those communities that lost so much.

We have gained a great deal of experience in responding to these types of situations over the years. In 2004, the Service's Southeast Region was impacted by four major hurricanes—Ivan, Charley, Jeanne and Frances. This year, Hurricane Katrina, which devastated dozens of communities across three states and wreaked havoc in the lives of thousands of citizens, was followed by Hurricanes Rita, Ophelia and Wilma. This testimony will focus on the Service's response to Hurricane Katrina and the impact Katrina had on Service resources. Throughout my statement I will be referencing some accompanying slides.

INITIAL RESPONSE

In the days immediately preceding Hurricane Katrina's landfall, Service offices and refuges in Florida, Mississippi, Louisiana, and Alabama implemented their Hurricane Emergency Action Plans. These plans outline steps to secure Service facilities and ensure the safety of employees.

On August 30, the day following Hurricane Katrina's landfall, the Service Special Operations Response Team (SORT) arrived in the incident area to begin rescue efforts and assess initial damages. The SORT Team is made up of Service Refuge Law Enforcement Officers. Immediately following the SORT Team, the Incident Command Team (ICT) began arriving on scene. This team is made up of Service per-

sonnel from various programs trained in emergency response and recovery efforts. Service personnel quickly focused on assisting the people and communities in Alabama, Louisiana, and Mississippi. They immediately engaged in search and rescue activities, saving lives from the outset. (See slides 2–6.)

Within 4 days of Hurricane Katrina's landfall, the Service had established a full service Incident Command Post at Big Branch National Wildlife Refuge in Lacombe, Louisiana, 20 miles north of New Orleans. Working cooperatively with other agencies, including the Louisiana Department of Wildlife and Fisheries, we participated in rescuing more than 4,500 people, including two occupants from a helicopter crash on a rooftop. The heroic efforts of Service employees make me proud to be a part of the Fish and Wildlife Service.

Charles Flynn, the Fire Chief of St. Tammany Parish Fire District 3, said:

> "The support that the U.S. Fish and Wildlife Service provided to Lacombe has been outstanding. I want to thank all of you for the great help from feeding us to clearing our roads. It has been a blessing to have you here."

As the need for emergency rescue operations decreased, the Service began assisting agencies with recovery operations. On September 5, we began working with the U.S. Coast Guard on spill response operations in Alabama and Mississippi. We began assisting with spill response operations in Louisiana on September 12. A week later, Service personnel began efforts to minimize water quality impacts from the de-watering of New Orleans and, on September 28, the Service deployed 24 Refuge Law Enforcement Officers to Lafayette, Louisiana, to assist the Red Cross.

In addition, the Service's Southeast Region sent out clarifying guidance to remind Federal and State agencies that the Endangered Species Act allows a waiver of the regulatory requirements required by the law in the case of Presidentially declared disasters. This guidance ensured that the Endangered Species Act would not stand in the way of recovery and clean-up efforts.

COMMUNITY SERVICE ACTIVITIES

More than 150 Service employees live and work in the areas affected by the hurricane. Thankfully, all of our employees are safe and accounted for, but 21 of our employees lost their homes and personal belongings. In spite of this, some of these employees were quick to volunteer to help others less fortunate. More than 600 Service employees worked shifts at the full-service base of operations established at Big Branch National Wildlife Refuge. This facility provided food, water, shelter, fuel, showers and laundry facilities to our displaced employees and their families, as well as local police and fire departments, 100 American Red Cross and International Red Cross volunteers, National Guard servicemen, Immigration and Customs personnel, 40 Federal Emergency Management Agency (FEMA) personnel, and other law enforcement officers engaged in the search and rescue efforts throughout the affected area. The operations base at Big Branch provided more than 25,000 meals (including 200 each day that were sent to support staff and patients at the Louisiana Heart Hospital), more than 3,600 showers, and more than 1,900 loads of laundry. Dr. James E. Smith, an Interventional Cardiologist with the Louisiana Heart Hospital, said:

> "Our location was difficult to re-supply after Katrina passed. It became important to have a little down time, get out of the facility and go get a meal in 15 or 20 minutes and be back on the job. Also, many of the patients and their families were able to get the sack lunches from the Fish and Wildlife facility. It was just a wonderful service and we really, really needed that support."

Service crews cleared more than 300 driveways, over 14 miles of roads, ten miles of fire breaks, and four major parking lots, including the Louisiana Heart Hospital, Lake Castle School and the local Post Office. Our employees conducted reconnaissance on 65 miles of roadways on more than 100 streets. Service personnel assisted numerous citizens, including clearing a driveway so that an ambulance could transport a patient home from the hospital. (See slides 7–12.)

Agents from the Service's Office of Law Enforcement, as well as Refuge Law Enforcement Officers from various areas of the country, assisted in numerous search and recovery missions. During a live interview, CNN Commentator Donna Brazile made a plea for help in finding her sister, Sheila, who lived in an assisted living facility in New Orleans and had not been heard from since the storm. We sent a boat to the last place where Sheila had been seen—a flooded area of New Orleans that had not yet been visited by rescuers. They found Sheila and five other people in the building with no food or water. Donna Brazile said without the efforts of the Service, her sister probably would have died. This is one of many stories of Service

employees going beyond the call of duty to rescue people in need during this crucial time after the hurricane hit.

IMPACTS TO WILDLIFE AND SERVICE FACILITIES

The area impacted by Hurricane Katrina has one of the largest concentrations of national wildlife refuges in the country due to the important coastal wetlands in the region. Nineteen national wildlife refuges were affected by Hurricane Katrina. Sixteen of these are coastal refuges that were temporarily closed in the aftermath of Katrina. Our refuges and other facilities have addressed the most urgent clean-up and repairs and are refining damage assessments to incorporate all available information from the impacted area, including reports from initial responders, emergency personnel, station managers and field personnel. We also rely on initial aerial reconnaissance and meteorological and hydrological data. These reports provide specific information about damages and the magnitude of impacts to both fish and wildlife resources and agency operations. Cost estimates are developed based upon actual costs to construct or repair damaged assets or the cost of completing similar work in the past. Over the past two years, our initial assessments of clean-up and facility repairs have been 95 percent accurate when compared with actual costs.

Southeastern Louisiana, and especially Breton National Wildlife Refuge, is globally important for colonial nesting birds. Up to 15 percent of the world's Brown Pelicans and up to 30 percent of the world's Sandwich Terns nest in this area. Breton, which is part of the Chandeleur Islands and celebrated its centennial last year, lost 50 to 70 percent of its land mass due the effects of Hurricane Katrina. In addition, Mississippi Sandhill Crane, Big Branch Marsh, Delta, Bogue Chitto, and Bayou Sauvage National Wildlife Refuges suffered significant impacts. We estimate the National Wildlife Refuge System in the Southeast Region experienced direct land losses, accelerated degradation or other damage on more than 150,000 acres of coastal and bottomland wetlands.

Though it is still early and more analysis is needed, the Service and its partners have completed some preliminary assessments and expect additional coastal wetland impacts. Coastal marshes in the Mississippi River delta and the Parishes south of New Orleans, and the marshes of Southwest Louisiana, were hard hit by winds, surge, and saltwater from Hurricane Katrina. Two important wetland plants were severely impacted; Spartina was extensively uprooted, and Phragmites was laid over and burned by saline storm surge. Further spatial analyses will be needed to quantify the acreage of those wetlands that were converted to open water. Coastal forested wetlands ranging from eastern Lake Pontchartrain Basin to the Pearl River were defoliated and sustained heavy damage to standing trees.

Although we are working with other agencies to ensure that the requirements of the Endangered Species Act do not impede recovery, we are focused on the assessment of hurricane impacts to wildlife species, and particularly endangered species. We have received reports of substantial mussel and fish die-offs. Aquatic ecosystems and fish communities may have been severely impacted by contaminant releases, sedimentation, loss of spawning habitat, and disruption of migration. About 50 sea turtle nests along the Alabama coast were lost, including all 10 nests at Bon Secour National Wildlife Refuge. In many areas, extensive timber damage has removed potential nesting trees for bald eagles and other birds. Noxubee National Wildlife Refuge in Mississippi and Big Branch Marsh National Wildlife Refuge in Louisiana lost a significant number of trees, including cavity trees used by roosting and nesting red-cockaded woodpeckers. Tree loss also will impact foraging habitat for these endangered birds. Primary dunes, which are habitat for the Alabama beach mouse, have been destroyed. In addition, 90 percent of the secondary dunes were destroyed and scrub habitat was damaged by salt spray from the ocean. Both habitat types serve as food sources for the beach mouse and it is likely their population will be substantially reduced from the effects of both Hurricane Katrina and last year's Hurricane Ivan. (See slides 15–16.)

The Service is currently working to assess Hurricane Katrina's full impact on the area's natural resources, some of which may take some time to become apparent. Such impacts include the spread of exotic species facilitated by the storm, ecosystem changes, and the effects of contaminant releases. We will be working with other agencies, states, and our partners to identify the appropriate division of responsibilities for restoration and recovery and utilizing our combined capabilities to address these needs.

FUTURE ACTIONS

In addition to providing essential habitat for fish, wildlife, and waterfowl, coastal wetlands also serve as important buffers, or shock absorbers, during large storm

events. Without them, inland areas are more prone to effects of storm surge, flooding, high winds, and erosion. Prior to Hurricane Katrina, roughly 24 square miles of valuable coastal wetlands were being lost annually. To address the problem, in 1990 Congress passed the Coastal Wetland Planning, Protection and Restoration Act to provide much-needed funding to stem wetland loss throughout the country but focused specifically on coastal Louisiana. The Service represents the Secretary of the Interior on the CWPRRA Task Force, which has approved 154 small scale restoration projects to protect and restore more than 117,000 net acres of coastal wetlands over the past 14 years. In addition, the Service works closely with the State of Louisiana and other agencies in developing comprehensive restoration plans.

Through a number of programs, the Service will be assisting other Federal agencies, the State, and local entities in wetlands conservation and restoration. Programs such as the Coastal Wetlands Conservation grants will allow the Service to have a significant role in reversing Louisiana's coastal wetland losses and helping to implement a systematic approach consisting of larger projects working in concert with smaller projects to restore essential geomorphic structures and processes. To abbreviate the number and duration of independent feasibility studies, State and Federal participants formed the Louisiana Coastal Area (LCA) Comprehensive Coastwide Ecosystem Restoration Study Team. The LCA Study was completed in November 2004 and identifies the most critical ecological needs of the Louisiana coastal area in locations where delaying action would result in a loss of opportunity to achieve restoration.

The Service is working through its ecological services programs to assist Federal agencies in developing plans for building in wetland areas in a way that considers the need to restore ecological functions that will help prevent future flooding and help minimize the impact of future storms. We are also taking this opportunity to work with stakeholders to minimize the potential for oil spill and oil leakages that can degrade coastal wetlands and rob them of the ability to act as natural buffers.

The Service has already begun working with all affected partners to assess conservation restoration needs throughout the region impacted by Hurricane Katrina. The goal will be restoring coastal wetland habitats to continue to provide wildlife habitat, coastal protection, and economic benefits. We look forward to working with the committee, our Federal and State partners, and local communities to meet this challenge.

Finally, I would like to thank the Service employees who, in the aftermath of Hurricane Katrina, went above and beyond the call of duty to quickly respond to citizens in their time of need. Their quick, decisive actions served to highlight the ability of the Service to provide vital equipment, supplies, and personnel familiar with their communities to save lives and property in the most extraordinary of circumstances.

Mr. Chairman, thank you again for the opportunity to be here. I would be happy to answer any questions you or the other members of the committee might have.

The response of the U.S. Fish and Wildlife Service to Hurricane Katrina

Marsh grass and debris block SORT Team

With Highway 27 blocked, the SORT Team resorts to airboats and jon boats to conduct further reconnaissance.

2

Incident Command Center

- More than 600 Service employees mobilized to Big Branch Marsh NWR
- Facility provided food, water, shelter, fuel, showers and laundry facilities to displaced Service employees and their families, 100 Red Cross volunteers, 40 FEMA employees, local police and fire departments, and National Guard servicemen
- More than 25,000 meals were provided, including 200 meals each day sent to Louisiana Heart Hospital
- More than 3,600 showers taken
- More than 1,900 loads of laundry processed

3

Service employees David Foileau and Robert Dubois patrol flooded streets in New Orleans

USFWS/Buddy Goatcher

4

Employees assist in rescuing local residents in Louisiana

USFWS

5

Interagency Team

Working with other agencies, Service employees assisted in rescuing over 4,500 people.

USFWS/Buddy Goatcher

USGS science for a changing world

DUCKS UNLIMITED

USDA

NRCS ARKANSAS

6

Big Branch Marsh
Relief Hub for Community

The American, French and Swiss Red Cross use this Service facility as sleeping quarters.

USFWS/Bud Oliveira

7

Louisiana Heart Hospital Staff, National Guard, and Red Cross relief workers take advantage of the meals which the Service provided.

USFWS/Bud Oliveira

8

Humanitarian Effort

A Service crew working to clear roads for emergency access near Lacombe, LA provided fuel to power life support equipment for an elderly heart patient.

After supplying fuel for more than four days, the crew cleared a path for an ambulance to evacuate the patient and her husband and tarped the roof of their home.

USFWS/Bud Oliveira

9

"After the hurricane passed,
the U.S. Fish and Wildlife Service
came in and cleared the lot and made it possible
for patients and people to come to this facility.
It was very important to this community,"
said Dr. James E. Smith, Cardiologist,
Louisiana Heart Hospital, Lacombe, Louisiana

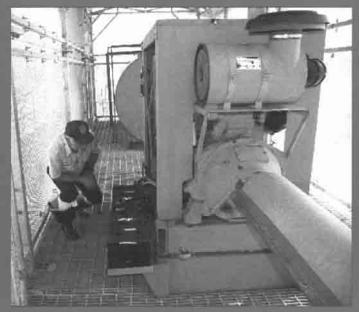
10

Dike covered with debris from storm surge

Bayou Sauvage NWR

11

Service personnel worked with the Corps of Engineers to equalize water levels surrounding a levee between Bayou Sauvage NWR and the city of New Orleans. This coordinated effort maintained the levee's integrity, avoiding a break and preventing additional flooding in New Orleans.



12

Refuge System Impacts

19 National Wildlife Refuges affected by Hurricane Katrina

15

Wildlife Impacts

- Estimated 150,000 acres of coastal and bottomland wetlands lost or damaged.
- 50 sea turtle nests on Alabama coast were lost.
- Primary dunes and most secondary dunes that provide habitat for the Alabama beach mouse were destroyed.

- More than 50% of cavity trees used by Red-cockaded woodpeckers were destroyed.

16

RESPONSE BY H. DALE HALL TO AN ADDITIONAL QUESTION FROM SENATOR JEFFORDS

Question. How will you assess the damage to the habitat and the wildlife and when will this be completed?

Response. Initially following the hurricanes, the U.S. Fish and Wildlife Service (Service) began surveys across the Gulf Coast. As mentioned in the Service's statement at the hearing, the area impacted by Hurricane Katrina has one of the largest concentrations of national wildlife refuges in the country due to the important coastal wetlands in the region. Nineteen national wildlife refuges were affected by the storm, and we are finding significant wildlife and wildlife habitat impacts. Initial reconnaissance has shown roughly 100 square miles of coastal marshes in Southeast Louisiana are now open water.

Habitats for red-cockaded woodpeckers, beach mice and sea turtles were severely impacted along the Gulf Coast. There were also impacts to wildlife from oil and chemical spills caused by the hurricanes, particularly onshore south of New Orleans where refineries and tank farms were damaged from tidal surge flooding.

We do not, and we may never, know the full extent of the impacts of the hurricane to wildlife and their associated habitats. However, the Service will continue to conduct specific on-the-ground assessments to determine impacts to wildlife and wildlife habitat across the Gulf Coast, including to coastal and forested wetlands, upland habitats, and fish and wildlife populations, as well as the hurricane's affects on the distribution and spread of invasive/exotic species and the contamination of water, fish, wildlife, sediments and soils. Our objective is to focus assessments on those wildlife resources under the Service's jurisdiction and their habitats within the context of the overall ecosystem. We expect to complete the assessments within the next 6 to 12 months.

We are benefiting from aerial and ground surveys conducted by staff from the Service, U.S. Geological Survey (USGS), the Service's Gulf Coast Joint Venture, and the State of Louisiana. The Service is partnering with all relevant Federal and State agencies to collaboratively examine hurricane related impacts to eliminate duplication USGS is working with partners to produce detailed assessments, maps and models of the post-hurricane coastal areas based on geospatial data analysis (including new digital elevation maps). The Service envisions using those products to refine and prioritize specific habitat restoration recommendations and objectives.

STATEMENT OF DAVID WINSTEAD, COMMISSIONER, PUBLIC BUILDING SERVICE, GENERAL SERVICE ADMINISTRATION

Good morning, Mr. Chairman and members of the committee. My name is David L. Winstead and I am the Commissioner of the Public Buildings Service (PBS), U.S. General Services Administration (GSA). Thank you for inviting me here today to discuss our response to Hurricane Katrina and the on-going recovery.

GSA manages a diverse portfolio of real estate for the Federal government over 340 million square feet of space in office buildings, courthouses, border stations, warehouses, etc. We serve nearly 60 agencies (over 400 bureaus), the U.S. Courts, and Congress. We house over one million Federal employees. We see ourselves as mission enablers, providing the functional space needed by Federal agencies to accomplish their missions.

This year, six hurricanes have struck the United States; the most significant being Hurricanes Katrina, Rita and Wilma. While all three impacted our customers and our real property assets in the Gulf Coast region, the devastation wrought by Hurricane Katrina was one of the worst natural disasters the United States has ever experienced. The impact zone spanned two GSA regions: 200 miles wide, as far west as Louisiana, as far east as Florida, and as far north as Kentucky.

In the face of the unprecedented demand created by Hurricane Katrina and then Hurricanes Rita and Wilma that followed, GSA's first priority has been to support the Federal Emergency Management Agency (FEMA). Our role is defined in the National Emergency Response Plan: specifically, Emergency Support Functions No. 2 (Communications) and No. 7 (Resource Support). We have provided and continue to provide as needed: communications support, emergency relief supplies, facility space, office equipment, and contracting services. The level of support required of GSA has been greater than ever before experienced.

Hurricanes pose two additional challenges to GSA: (1) to provide space and services to our customers; and (2) to safeguard our real property assets both through preventive measures and repair. To meet these two challenges GSA draws from the extensive experience of its professionals in property management, leasing, and the architectural/engineering disciplines.

GSA's hurricane response strategy is generally comprised of the following: (1) Advance preparation; (2) customer communications/hotlines; (3) damage assessment; (4) returning customers to operational status; and (5) returning owned and leased space to operational status. This last step may be as simple as waiting for area-wide power to be restored or as complex as repairing or completely replacing facilities. GSA's strategy was developed from the lessons learned by our regional associates who are well-practiced in hurricane response.

Generally, advance preparations begin once the National Weather Service projects a hurricane with the potential for landfall. Buildings located within the hurricane's forecast path are identified, reviewed, preventive action is taken, and daily conference calls on readiness between service center directors in those areas and regional staff associates begin. Regional personnel follow the direction of local officials regarding evacuations.

When weather predictions indicated that Hurricane Katrina would make landfall, regional associates began tracking the projected path and alerted field personnel. Information was also conveyed between our Southeast Sunbelt and Greater Southwest regional associates. Advanced preparations at facilities in the hurricane's forecast path began. Such preparations included testing and fueling generators, inspecting and securing building components, shutting down building systems where possible, placing sand bags where appropriate and boarding up the lower levels of multi-story buildings. Prior to Hurricane Katrina's landfall in the Gulf Coast, a major storm surge was predicted in Gulfport, MS. As a preventative countermeasure, the first three floors of the Dan M. Russell Federal Building and Courthouse in Gulfport, MS were boarded-up at an estimated expense of $ 20,000. This investment saved taxpayers an estimated $1 million dollars in damage to windows from heavy rain, high wind, storm surge flooding, and floating and wind-borne debris.

Concurrent with building preparations, PBS established information hotlines and websites to communicate with customers. As information on the Hurricane and the status of facilities became available, the hotlines and websites were updated. Customers could call the Hotline number and/or access the website to get information about their building.

Simultaneously, the GSA National Office established a rapid response team to (1) accumulate and coordinate the deployment of resources such as equipment and people from our other regional offices, (2) establish and distribute budgetary and procurement policy, (3) accumulate and distribute situational intelligence, and (4) establish and maintain senior level communications with FEMA and the affected agencies. The command structure and communication between National Office, Regional Offices, Service Center Directors, and Command posts has become a newly established piece of GSA hurricane response strategy.

GSA's Federal Telecommunications Service and Federal Supply Service also responded at an unprecedented level. Direct support provided to FEMA operations included temporary lodging through purchase agreements, personal property management, shipping services, fleet vehicles, telecommunications services, furnishings and supplies. GSA also assisted local governments in re-establishing communications and procuring vital supplies and services for the recovery effort.

At the same time, building damage assessment teams were mobilized in cities outside the projected path of the storm to assist the local service center teams with damage assessment. Once personnel were permitted back into the impacted areas, GSA began the process of damage assessment and bringing buildings back on-line. Initial response was hampered by the wide geographic area affected by Hurricane Katrina, the extensive damage and prolonged flood waters.

Within the first few days following Hurricane Katrina, preliminary damage assessments of buildings were completed. Generally, the extent of the damage was not as severe as expected. Buildings in New Orleans were not accessible for evaluation until nearly a week after the hurricane hit. Not until flooding receded were GSA officials, escorted by Federal Protective Service Officers, able to begin damage assessments.

In terms of the impact to our real property assets, GSA did not suffer any catastrophic losses. Damages sustained included: power outages, water intrusion, power distribution equipment damage, limited structural damage, mold build-up, broken windows, and major roof damage and leaks. Of the 42 government-owned locations, the most substantial damage occurred in New Orleans where buildings withstood the onslaught of wind and flood waters. Most notably, the roof of the historic New Orleans Custom House failed, although structurally, the remainder of the building is sound. It is a testament to the design and construction of our buildings that in the hurricane-stricken area, both our oldest and most historic building, the New Or-

leans Custom House and our newest federal building, the Dan M. Russell Federal Building and Courthouse in Gulfport, MS, sustained limited damage.

In contrast, the leased inventory fared less well, with damages ranging from total loss to minor repairs. GSA worked closely with our lessors to ascertain damages. Where buildings were closed, rent payments were suspended. Fortunately, leases in the impacted area tended to house customers with smaller space requirements, making alternative worksites easier to find.

Immediately following the hurricane, GSA began working with customer agencies to provide them with functional space and enable them to accomplish their missions. This included finding replacement space, procuring trailers; and transporting vital records. Alternative space options ranged from: underutilized properties in GSA's or other Federal agencies' inventory, hoteling, colocating, working at home, and relocating to other parts of the country.

Within GSA-provided space there were approximately 2,600 federal employees in 28 Federal Agencies whose operations were significantly impacted by Hurricane Katrina. To date, all customer agencies in Regions 4 and 7 are operational. As of October 27, three government-owned and 33 leased locations, a total of 36, remain closed as a result of Hurricane Katrina.

Hurricane Rita, a Category 3 storm, hit Texas almost immediately after Hurricane Katrina. With personnel already deployed and with more time to plan, GSA's response to Hurricane Rita was efficient and effective. As of October 27, 2005 all federal buildings in the areas hit by Hurricane Rita are open, with the exception of the Jack Brooks Federal Building in Beaumont, TX, which is only partially open. Four leased locations in the area remain closed.

The eighth storm to hit Florida in 2 years, Hurricane Wilma hit on Monday, October 24, 2005. Thirteen buildings are closed as of October 27, 2005. Damage assessments for GSA's 213 owned and leased facilities in the wake of Hurricane Wilma are still pending. Reported damage is consistent with heavy rainfall and strong winds including water intrusion, roof damage and building components. Once power is restored, comprehensive damage assessments will be conducted to determine the full extent of the damage.

In the days that followed Hurricane Katrina and Hurricane Rita, GSA was asked to estimate the damages to our government-owned buildings. At that time, we estimated total capital repair and replacement costs of $60 million and additional operating costs of $15 million. These initial estimates are proving to be substantially correct, as access to more buildings is gained and more comprehensive estimates are received. We are working with our authorizing and appropriating committees to receive approval to exceed prospectus funding limitations for emergency repair work on the affected buildings. We are currently estimating capital and operating costs for Hurricane Wilma. We believe these costs will be relatively low.

In answer to Hurricane Katrina, Hurricane Rita and now Hurricane Wilma, GSA rapidly deployed teams of experienced federal property managers, leasing specialists, contracting officers, attorneys, engineers, and environmental, telecommunication, and supply specialists. The effectiveness of GSA's response is primarily due to the expertise and professionalism of these associates. The consequence of this commitment creates a real challenge for GSA, as the increased workload created by these hurricanes does not diminish the normal day-to-day workload nationwide. The scope and numbers of employees GSA has deployed, nationwide, to help with the response effort for FEMA and GSA operations is unprecedented.

Mr. Chairman, GSA has successfully responded to the unprecedented 2005 Atlantic hurricane season and the closely spaced series of hurricanes occurring within two months. Our success can be attributed to: (1) organizing the preparation and rapid deployment of resources to stricken areas; (2) the availability of experienced professionals; and (3) organizing effective and continuous communication with customers and the internal response team structure. In addition, superior design and sound construction of our public buildings resulted in their ability to withstand these storms without extreme damage.

Mr. Chairman, thank you for the opportunity to testify before your committee. I will be happy to answer any questions you or members of the committee may have.

RESPONSES BY DAVID L. WINSTEAD TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. What constitutes the $15 million in additional operating costs and how is this different from the $60 million capital repair and replacement costs?

Response. Basic Repair and Alterations: The damage and associated costs resulting from Hurricane Katrina were unanticipated in the current fiscal year and in

GSA's fiscal year 2006 request. GSA has very limited authority to perform emergency repairs to its buildings and provide short-term emergency leasing on behalf of its Federal customers, Currently, all emergency funding must be derived from existing funding, which directly impacts GSA's ability to carry-out its necessary national program functions. The estimated repair and associated cost of the damage from Hurricane Katrina far surpasses GSA's ability to absorb these cost increases in its base program and therefore we seek an additional supplemental appropriation to cover these emergency costs.

Building Operations: The purpose of this request is to fund emergency repairs to Federal buildings and United States Courthouses damaged in the wake of Hurricane Katrina. This request includes the unplanned costs for equipment (water pumps, generators, communication equipment, etc.) and additional professional (architects, engineers, planner estimators, etc.) and nonprofessional (cleaners, janitors, maintenance workers, mechanical and systems personnel, etc.) contract staffing to support GSA personnel in the field with damage assessment, recovery efforts, facilities operations and maintenance, debris removal, and clean-up activities.

Question 2. Is GSA responsible or involved in any infrastructure repairs outside GSA's property under the Stafford Act?

Response. GSA does *not* have any responsibility for infrastructure repair beyond our own properties, either under the Stafford Act or otherwise. However, if FEMA or another agency with that responsibility were to ask us for help, we can provide the assistance on a reimbursable basis to them.

The Stafford Act conveys broad authorities to the President to provide disaster assistance relief. Most of the authorities conveyed in the Stafford Act have been delegated by the President through Executive Order 12656 to FEMA. The Stafford Act, itself, does not specifically reference GSA (except in providing support for the disposal of certain temporary housing units to the occupying disaster victims if they lack permanent housing). Our agency response activities under the Stafford Act are in support of FEMA and other direct responding agencies. Part 18 of Executive Order 12656 discusses GSA's specific emergency preparedness and response responsibilities. These include, among others, developing plans and operating procedures for government-wide supply programs and use of excess and surplus property (both real and personal) to meet the requirements of Federal during national emergencies.

Question 3. Is there anything you observed in your agency's response to Hurricane Katrina that you would like to improve? If so, what congressional action would be required to assist the agency?

Response. In response to future emergencies, GSA would like to explore alternatives to provide more flexibility with regard to emergency leasing authority in the event of emergencies. In addition, emergency response could be enhanced if GSA could report a "notification" of funds spent for emergency repairs that are above the prospectus level rather than seek approval from Congress before proceeding with emergency repairs.

STATEMENT OF HON. C. RAY NAGIN, MAYOR, NEW ORLEANS, LA

Mr. Chairman, members of the committee, I would like to thank you all for inviting me to speak to you today about the city of New Orleans. To all the members of Congress, and in particular to our Louisiana delegation, thank you for all of your continued hard work and dedication in helping us in this time of need. I would also like to take a moment to thank the American people, most of all, for the compassion, support and generosity they have shown our city over the last couple of months. The outpouring from private citizens and corporations all over this country has been remarkable.

New Orleans is surrounded by the great waters of the United States. But while the waters surrounding New Orleans provide our lifeblood, they also threaten our very existence. A system of levees and pumps protects this city nestled in the crescent of the Mississippi River and extending north to the banks of Lake Pontchartrain. Although these systems ordinarily meet the water challenges facing the city, Hurricanes Katrina and Rita were extraordinary events that have changed life in New Orleans forever.

As you know, on August 29, 2005, Katrina, the most powerful Category 4 hurricane to hit the region, devastated New Orleans and the Gulf region causing unimaginable damage and breaching the levees that protect our city. This storm forced hundreds of thousands of people to flee, flooded thousands of homes and decimated many lives. The damage to homes, schools, businesses, hospitals, roads, water

plants, communication facilities, and electrical power infrastructure was unprecedented and the economic and social fabric of the area was damaged in its entirety.

Our storm protection systems did not work against Katrina, a Category 4 hurricane that made land fall near Buras, Louisiana. The city's levees were overtopped and/or destroyed, which created a flood that would overtake much of New Orleans.

All business was immediately halted. Hospitals were forced to close; electricity, communications and fresh water services were disabled. Hundred of thousands had to be evacuated to different cities throughout the United States. Many who wanted to come home could not because their homes were destroyed; jobs were lost with no access to a workable health care system. Homes that did survive were inundated with contaminated and oil laced water. Some of these homes and businesses are ruined forever. Some of our hospitals may have to be torn down.

Now we have a great challenge before us. We need to rebuild this great city to bring New Orleans back and in order to do that, we need this committee's help in a combination of structural and nonstructural flood control measures.

Our first challenge is to ensure the safety and security of our citizens. The Chief of the Army Corps of Engineers has assured me that flood defenses for New Orleans will be restored by June of 2006 to the level where they were when the hurricane struck and overpowered them. The Corps Commander also acknowledged that this would provide little comfort in a city devastated by the storm and whose flood protection is not as strong as it should be. The Corps currently has no authority to rebuild the city's flood protection from hurricanes stronger than a Category 3 storm. But more is needed. Now is the time for our country to make a commitment to the Category 5 levees that will enable us to bring New Orleans back. I ask this not just for the nearly half a million people who call the city home but indeed for the well being of our Nation. Only with a plan to improve our critical levee and flood control systems can we expect citizens to come back and businesses to reinvest on a large scale.

New Orleans is an economic hub for the entire Nation and is of great strategic importance. Four of the largest ports in the Nation are in this area; half of the grain exported from the United States goes through New Orleans, the area contains a vast infrastructure for oil and gas exploration and production, petrochemicals, refineries and pipelines that serve much of the country and its fishery resources are among the largest in the United States. Simply put, the Nation cannot afford *not* to rebuild New Orleans and Federal money must help the city to rebuild the right way this time.

But levees and floodwalls alone will not solve this problem. Drainage is an essential part of the flood control equation. The Southeast Louisiana Flood Control Project (SELA), our primary drainage enhancement program, must be expedited and completed as soon as possible so that the benefits can be realized as we rebuild the city.

Our water and sanitation system infrastructure was also badly damaged by Katrina. They need to be renovated or replaced in order to continue providing our citizens with safe drinking water and a healthy environment.

Another crucial component to our infrastructure needs lies outside Orleans Parish. A comprehensive plan to protect our city and the Nation's investment in our region includes rebuilding the marshlands of southeast Louisiana. Wetlands act as a natural buffer between this part of the United States and the Gulf of Mexico, reducing potential flooding and protecting southeast Louisiana from devastating storm surge. Two miles of rebuilt marshland will reduce surge up to 2 feet. With local, State and Federal coordination on this issue we can protect the Nations' investment in New Orleans and the Louisiana coastal area.

Along with the rebuilding of our Levee System to help protect the city from another dangerous storm, we are also focused on the reestablishment of our businesses. We need to ensure that local workers and businesses have an opportunity to be a part of the rebuilding process. An initial investment can pay off multiple times for our Nation if we invest in the people who will continue to reinvest in the local economy.

To bring New Orleans back, we must also revitalize our business climate with tax breaks to help stimulate re-investment and economic development.

Therefore, I am asking for the establishment of the New Orleans/Katrina Tax Recovery and Jobs Incentive Zone that would give people a 50 percent credit on their taxable wages. This zone would cover the entire city, along with other similarly affected areas, and would consist of several main components:

• The credit would be capped at $50,000 for single tax payers and $100,000 for joint returns.

• Employers would also receive a 50 percent income tax credit based on their total payroll for all employees who live and work in the zone. Credits would not carry back or carry forward for sales to third parties.
• There would also be an income tax free zone within these areas for any manufacturing companies creating jobs and adding value to any of the top five raw materials (coffee beans, steel, raw metals, rubber and plywood) imported through the Port of New Orleans with a focus on advanced robotic utilization. The same tax free zone would also be created for medical research, clinical trials, pharmaceutical manufacturing, and related patent development.
• To ensure that we bring back businesses and individuals who were forced to relocate, we need a full Relocation Tax Credit that should be allowed for uncompensated expenses incurred in relocating individuals or businesses to their location prior to the storm. Relocation expenses should include those related to leases of temporary facilities, along with everyday expenses such as lodging incurred on behalf of employees. The credit should apply for both the regular and minimum tax and be eligible to carry back for three years and forward 20 years.

These incentives would last for seven years, or until the population in the target areas reaches pre-Katrina levels, whichever comes first. To ensure that this Nation's investment in the region has maximum lasting impact, aid must be delivered to the areas that need it most. I urge you to establish a minimum funding formula that is based upon the number of people displaced or affected and the number of buildings or residences either flooded or damaged.

Our city government knows the uphill battle local businesses, institutions and workers face, because we too face difficult decisions as we continue operating. The city laid off approximately 50 percent of our workforce, about 3,000 people, because of a total loss of revenue streams. The Stafford Act must be amended so governments facing crises of this magnitude have more flexibility to pay workers. While the Community Disaster Loan Act of 2005 *will allow the city* to begin to address our financial needs, I remain concerned that restrictions imposed by Congress will make it difficult for us to fully respond to the challenges ahead. We need the restrictions lifted that limit loan amounts to 25 percent of our revenue, and that take away the authority of the President to forgive the loans if a local government cannot repay. The Stafford Act must be fixed.

Transportation repairs and restoration are yet another crucial aspect to recovery. Our transit system suffered heavy losses of busses, rail and associated infrastructure that will require federal assistance to repair and replace. Without restoration of these transportation systems, our recovery efforts will be severely impacted. A light rail system linking Louis Armstrong International Airport, New Orleans and Baton Rouge would provide another needed tool for the rapid evacuation of thousands of people in the event of another major storm, and for rebuilding the regional economy.

Our community is already moving to bring New Orleans back. The foundation of this effort is a 17-member commission I appointed to draft a master plan for rebuilding the city. The representatives on the Bring New Orleans Back Commission will work with hundreds of committee members, both residents in the city and people displaced by the storm, to draft a detailed recovery plan. I have charged this commission with a weighty task, but I am confident that members are up to the challenge. Each was chosen to enrich the scope of voices necessary to rebuild our diverse city. Cochairs Mel Lagarde, a successful investor and entrepreneur, and Barbara Major, a community activist and advocate for the poor, are representative of the types of input we need to be successful.

By the end of the year, the commission will develop a blueprint for New Orleans' recovery. However, we are facing a critical point when businesses and residents are making life-altering decisions about whether to stay in the area. Recently, we sponsored a Back to Business Workshop in conjunction with the Department of Homeland Security to help local companies become more involved in the building process, but our city needs an immediate infusion of resources and tax incentives to encourage growth. I am encouraged by President Bush's promise of federal assistance for locally directed projects because I truly believe the best people to rebuild New Orleans and Louisiana are the people who call the area home. This mayoral administration's track record shows our understanding of the responsibility that will accompany significant federal aid and our commitment to spending every penny wisely and in a manner that is in the best interests of all Americans.

In closing, I would like to remind the committee of the critical areas I have addressed today:
• Building flood control measures to protect against a Category 5 hurricane
• Repairing or replacing our water and sanitation system infrastructure
• Rebuilding the marshlands of Southeast Louisiana

- Establishing a minimum funding formula
- Ensuring that local workers and businesses have an opportunity to participate in the rebuilding of New Orleans
- Revitalizing the business climate with tax breaks
- Fixing the Stafford Act

I want to thank you again for allowing me to be here with you today. New Orleans must be rebuilt and must be made a safe place to live, work and do business. I am confident that by working together, we can achieve a common vision: a vibrant New Orleans with a thriving economy, prosperous citizens, and the chance to once again contribute to our great Nation. Thank you.

RESPONSES BY C. RAY NAGIN TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. How are average citizens of the city of New Orleans, many of whom are spread all over the country, being offered an opportunity to participate in your Bring New Orleans Back Commission's planning group?

Response. The Bring New Orleans Back Commission (BNOB) was developed to create a master plan for rebuilding shaped by the input of experts and everyday citizens alike. Committees and subcommittees solicited participation via the Internet and hundreds of local and national media outlets. Members include representative voices from many of the city's neighborhoods and community organizations. The BNOB Commission holds regular meetings in New Orleans that are advertised in local media and on the Commission's and City's website, which won first place for its interactive features. BNOB committees also have forums on specific topics, including health care in a post-Katrina world and the state of the city's educational system, which hundreds of citizens have attended.

Since many citizens are no longer living in the New Orleans, the Commission and I are equally focused on outreach across the diaspora. I have held four Town Hall Meetings in cities with large populations of New Orleanians: Atlanta, Baton Rouge, Houston and Memphis. More are scheduled. In addition, the Commission is holding town hall-style meetings with the Urban Land Institute to give citizens a chance to express their thoughts about BNOB and ULI's plans. Residents in Atlanta, Dallas, Houston, Baton Rouge, Memphis and Fort Worth can attend a meeting in the city where they live to make their thoughts known.

While we are still communicating with our constituents through all traditional mediums (mail, telephone) the Internet is an additional unlimited free resource for displaced residents. BringNewOrleansBack.org has all of the minutes and meeting schedules for the Commission and its subgroups. Some committees, like Education, offer a Q&A section to encourage outreach to displaced citizens, streaming video of meetings or special conferences, e-mail updates and surveys for citizens. The Cultural Committee set up an online registration for displaced artists to participate in the decisionmaking process and to get feedback. The more New Orleanians can participate in the process, the better BNOB's plan will be.

Question 2. Can you comment on the equity of the modifications to the Community Disaster Loan program that were recently enacted by Congress that preclude Katrina-affected communities from receiving loan forgiveness under this program?

Response. While the Community Disaster Loan Act of 2005 will allow the city to begin to address our financial needs, I remain concerned that restrictions imposed by Congress will make it difficult for us to fully respond to the challenges ahead. We need the restrictions lifted that limit loan amounts to 25 percent of our revenue, and that take away the authority of the President to forgive the loans if a local government cannot repay. Repealing the authority of the President to waive repayment of loans burdens our government with additional debt that will retard our recovery efforts. The Stafford Act must be fixed. The national tragedy of September 11, 2001, made it clear that a $5 million cap for municipality suffering a crisis is completely inadequate. In 31 years, more than $225 billion in loans have been forgiven. Iraq is not expected to pay back the billions of dollars American taxpayers are spending to rebuild its infrastructure. However, when the largest natural disaster to hit the United States decimates the economy of one of the great cities in this country, traditional relief under the Stafford Act is not only inadequate but is worsened by unprecedented repayment conditions. This amounts to second-class treatment for the people of New Orleans, Louisiana, and the Gulf Region, who contribute economically and culturally to the worth of our Nation.

STATEMENT OF KIM DUNN CHAPITAL, MSPH, ENVIRONMENTAL CONSULTANT, DEEP SOUTH CENTER FOR ENVIRONMENTAL JUSTICE

Thank you Mr. Chairman for the opportunity to testify before this committee. My name is Kim Dunn Chapital, MSPH. I am here today as a representative of the Deep South Center for Environmental Justice (DSCEJ) at Dillard University in New Orleans, formerly at Xavier University of Louisiana.[1] I have worked with DSCEJ for the past 6 years as environmental trainer for unemployed and underemployed minorities living in low-income communities of color. I train minorities on how to safely and properly conduct hazardous materials remediation and emergency response activities, asbestos and lead abatement, and mold remediation so that they can build healthier communities free of toxic pollution.

In addition, for the past 21 years I have worked at the Office of Environmental Health and Safety at Tulane University. I initially held the position of hazardous waste technician and worked in that capacity for 1.5 years. I was then promoted to the position of an industrial hygienist. In 1981, I was promoted again to the position of occupational health manager—the position I currently hold. I sit as a member of the American Indoor Air Quality Council, and have expertise in the areas of hazardous materials removal and emergency response, and occupational health and safety. I'm currently accredited by the Louisiana Department of Environmental Quality to conduct lead and asbestos abatement.

I am here today not only as one voice among the thousands of displaced, primarily low-income people of color, from Hurricanes Katrina and Rita, but also as an expert on environmental and occupational health issues. I am a lifelong resident of the New Orleans area and my family and I were recently displaced and have been unable to permanently return home.

IMPACT OF HURRICANES ON COMMUNITIES

This disaster has left a lasting memory on our communities and families. In the wake of Hurricanes Katrina and Rita, thousands still remain displaced from their homes today. For many of them, their homes have been completely destroyed and will need to be rebuilt. For the many that have returned or visited their homes, they have come back to see their home completely destroyed by water. There are thick layers of sediment that coat the inside of many homes, there is heavy layers of mold coating the interior of the homes from floor to ceiling, roofs have completely collapsed, and some homes were picked up by the water and moved to the middle of streets, if not completely washed away.

For me personally, part of my return was not only to address my personal cleanup and retrieval issues, but to also do consulting work I have been very much in demand since Hurricane Katrina. However, upon seeing my home for the first time and seeing the destruction of my community, I felt quite helpless, angry, and disgusted. Having to fully dress in protective equipment to enter my own home was a personal nightmare. I quickly realized what I was up against. I experienced the difficult task of wading through unknown hazards, and obtaining proper protective gear to cleanup my home and that of neighbors. Thus, I decided to forgo taking advantage of any consulting opportunities, and chose instead to volunteer my time to help and educate my community on how to protect themselves when entering their home and cleaning up the damage. I lent emotional and informational support on how returning residents should protect themselves and helped to prepare them for what they were up against.

I believe that New Orleans can be rebuilt in a manner that reflects its great racial, economic, and cultural diversity. I, along with many others, look forward to returning to our homes to rebuild and reinvigorate this city that we love. However, as a community member and an expert in environmental and occupational health, I am very concerned about the environmental and public health risks that returning residents are facing, and the lack of adequate precaution and education being provided so that returning citizens can protect themselves from any risks that exist.

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[1] DSCEJ was founded in 1992 in collaboration with community environmental groups and other universities within the southern region to address environmental justice issues. DSCEJ provides opportunities for communities, scientific researchers, and decisionmakers to collaborate on programs and projects that promote the rights of all people to be free from environmental harm as it impacts health, jobs, housing, education, and general quality of life. A major goal of DSCEJ is to develop minority leadership in the areas of environmental, social, and economic justice along the Mississippi River Chemical Corridor. DSCEJ is a powerful resource for environmental justice education and training.

ENVIRONMENTAL AND PUBLIC HEALTH RISKS

From what I understand, the U.S. Environmental Protection Agency (EPA) has been collecting samples of sediment (mud or soil) from various parts of New Orleans since shortly after hurricane Katrina. Some of the sampling results have been reported on the EPA website. New sediment sampling results were taken on September 25–30, and released on October 7, 2005, including testing for about 150 chemicals at numerous sites in New Orleans and nearby areas.

From the results that I have observed, I am very concerned about the safety of workers participating in cleanup activities and residents returning home. In addition, I am concerned about the lack of full disclosure to the public about contamination in and around residential areas. Finally, I believe that sampling and testing to date is not adequate, especially in hard-hit areas such as the lower and upper 9th ward.

I believe that EPA and other health agencies should immediately broaden toxicity testing of sediments, soils, water, air, and seafood (including both chemical and biological contaminant monitoring), as well as biomonitoring and health surveillance of responders and the public. Immediate widespread testing of sediment and dried mud is critical to ensuring the safety of cleanup workers and returning residents, and for identifying toxic hotspots for containment and cleanup. Big industrial facilities, Superfund sites, and other toxic hotspots should be catalogued and evaluated, and any dangerous releases contained immediately. Immediate public disclosure of all information is also critical.

In short, the most recent EPA data demonstrates the following (thank you to the Natural Resources Defense Council for assisting in the review of EPA's data):

• Based on test results, EPA and CDC recommend that people avoid all contact with sediment from the flood due to potential health concerns. If you touch sediment, EPA and CDC recommend washing with soap and water, rinsing your eyes, and removing contaminated clothes.

• Bacteria (E. coli) were found in the sediment, indicating persistent problems with sewage contamination. There is no information on what amounts of bacterial contamination is hazardous, but the continuing presence of bacteria shows a need to take safety precautions.

• Toxic metals—lead, arsenic, mercury, cadmium, manganese, and chromium were found in most samples. The amount of arsenic in many areas was higher than the "minimum risk level" established by the federal government and was above the remediation level established by Region 6 EPA for soil in residential neighborhoods.

• Petroleum contamination was discovered in most sediment samples, especially from diesel fuel. Many samples from flooded areas were over the levels at which Region 6 EPA or the Louisiana Department of Environmental Quality may require soil clean-up in residential areas. Skin contact with sediment contaminated by fuel oil can cause itchy, red, sore, and peeling skin, even after brief contact. Breathing dust contaminated with these chemicals, especially if you breathe them for many days, can cause illness too.

• Other contaminants in the sediment included pesticides, phthalates (chemicals in plastics), several industrial solvents, and PAHs (cancer-causing chemicals in soot).

MORE PRECAUTIONS SHOULD BE TAKEN BY RETURNING RESIDENTS

As a public health professional, I have been surprised by the lack of adequate public health advisories and warnings regarding the potential serious environmental and public health impacts of returning to previously flooded areas.

I have personally observed residents and workers in contaminated areas with no protection or safety equipment. I observed residents re-entering their contaminated properties often with young children in hand. Although some people were wearing gloves or using hand sanitizers, after handling contaminated materials they did not properly decontaminate their clothing—they used their clean hands to remove contaminated boots, threw contaminated clothing in the trunks of their cars, or often wore the decontaminated clothing in the cars. I observed many workers conducting cleanup activities with no protective gear at all. Although some workers did wear protective gear, I observed that they would often wear the same suit all day long, in addition to no double suiting, without any change, and then I observed that they failed to decontaminate the equipment after use, or shower after removing contaminated clothing. In several instances, I observed workers with protective gear move from a contaminated site to a noncontaminated site without any decontamination procedures, thus spreading toxics from one place to another.

To address these problems, I wanted to share with you some of my impressions of what kind of precautions I think residents returning to flooded areas with poten-

tial contamination should take (thank you to Natural Resources Defense Council for assisting in making these recommendations):

• Sensitive populations (children, the elderly, and people with asthma, heart conditions, or compromised immune systems) should avoid returning until cleanup is completed.

• I strongly recommend, if residents do return, that they wear protective gear, limit their time in previously flooded areas, and wash well once they are out of the area and have access to clean water again. Protective gear includes heavy boots, nitrile or vinyl gloves (if they will be touching anything), and a respirator to filter out contaminants. An appropriate respirator would be an N–95 mask that can filter out particulate matter as well as microorganisms (such as spores from mold). If they are removing debris from inside a home, full protective clothing (Tyvek or similar full body protective suit), is also recommended. Protective gear can be purchased at a hardware store or online for less than $50 for a full outfit.

• Dried dirt and mud in and around houses may contain harmful toxic chemicals. Residents should avoid activities that stir up dust (such as sweeping and shoveling). Residents should also avoid eating food or smoking and applying cosmetics in contaminated areas. They should wear two layers of gloves when handling anything that came into contact with the flood water or sediment.

• Drinking water and sewage systems were hit hard by the two storms leaving more than 2.4 million people without safe drinking water. As of October 10, the EPA reported that 270 public water systems in storm-affected states were still on boil water advisories, and at least 289 systems were still inoperable. Boiling water only removes bacteria, but not other contaminants such as metals and toxics. Therefore, residents should avoid drinking the water. To avoid dehydration, they should have plenty of bottled water.

PROTECT RETURNING RESIDENTS, DON'T WEAKEN FEDERAL PROTECTIONS

I urge you to reject all efforts to weaken public health and environmental laws with riders in the appropriations process. Families already injured by the hurricanes should not be placed in further jeopardy by proposals to waive or weaken the laws that guarantee them clean water, healthy air, and safe communities. EPA has not identified the need for any waivers beyond those already allowed by current law therefore the need for flexibility can be accommodated without changes in current law. I urge you ensure that all federal agencies involved in the recovery and rebuilding efforts fully implement and enforce these safeguards, including in minority and low-income communities.

CONCLUSION

Based upon my professional judgment there are truly many significant environmental and occupational health hazards that need to be addressed. I feel strongly though, that there is no need to instill fear in the public. In the alternative, we can alleviate fear through proper education and full informational disclosure. Residents need to be fully informed of what environmental and health hazards they may face in returning to previously flooded areas, and then be advised of proper precautions to take in order to protect their health and safety. EPA should expand its sampling and monitoring of impacted areas, and make that information fully available to the public with recommendations on steps residents can take to protect themselves. To date, my assessment is that EPA's sampling work is inadequate to fully inform the public on what risks exists. Finally, I fully oppose any waivers of the key environmental and public health laws that are designed to protect our communities. Families already injured by the hurricanes should not be placed in further jeopardy by proposals to waive or weaken the laws that guarantee them clean water, healthy air, and safe communities. Thank you for the opportunity to speak to you today.

STATEMENT OF WILLIAM H. HINES, PAST CHAIRMAN AND BOARD MEMBER, GREATER NEW ORLEANS, INC.; COCHAIRMAN, ECONOMIC DEVELOPMENT COMMITTEE, MAYOR'S BRING NEW ORLEANS BACK COMMISSION

INTRODUCTION

My name is William H. Hines, Chairman of the Executive Committee of the law firm of Jones, Walker, Waechter, Poitevent, Carrere and Denegre, L.L.P., and immediate past Chairman and continuing member of the board of Greater New Orleans, Inc., a public/private partnership that spearheads economic development initiatives for the ten-parish Greater New Orleans region. Additionally, at the request of Mayor Ray Nagin, I serve as the cochairman of the Economic Development Com-

mittee for Mayor's Bring New Orleans Back Commission. I am grateful for the opportunity to appear before you today to discuss response and recovery efforts affecting the future of New Orleans.

It cannot be stated often enough. Hurricane Katrina was like no other hurricane before it—the cataclysmic storm caused unprecedented destruction and long-term interruption to governmental services and economic activity. Never in the history of this Nation has a three-state area been hit so hard nor has an entire major U.S. metropolitan city been evacuated for weeks on end.

And while Katrina occurred over two months ago and seems to be largely fading from the front pages of our Nation's newspapers, the lives of the citizens of the greater New Orleans area have not returned to "normal". Many businesses in the region are generating little or no revenue, and are struggling to meet payroll, rent and vendor payment obligations. Small Business Administration (SBA) loan approvals are moving at a snail's pace. As of early October in Louisiana alone, more than 230,000 unemployment claims had been filed . . . 16 times the normal volume. One additional but illustrative example of how life in the New Orleans region has not returned to normal concerns the U.S. Postal Service. Most regional businesses are still missing over a month of their mail. Without receipt of payment checks, vouchers, bills and other important and time-sensitive business documents, commerce within the region is significantly hampered. This backlog must be eliminated, and it represents but one area where federal assistance can help the regional business community.

On behalf of the citizens of New Orleans and the regional business community, I wish to highlight the regional economic activity that must be restored in the wake of Katrina.

PRIORITY #1—RESTORATION AND ENHANCEMENT OF LEVEE SYSTEM

At the outset, I can assure you that the number one priority for the New Orleans business community is to obtain the firm assurance of the federal government and this Congress that adequate levee protection will be provided for the New Orleans region. Though you have asked that we keep comments concerning the Army Corps of Engineers to a minimum, I cannot leave this committee today without highlighting this critical need for the business community.

We are extremely pleased with the assurances and actions to date provided by the Corps of Engineers that the levee system will be rebuilt no later than June 2006 to withstand Category 3 storms. However, the business community also needs assurance that the federal government will work as quickly as possible, with nearteini timelines, to strengthen the critical levee system to withstand Category 5 storms. With this assurance, businesses both large and small will be provided with the comfort they need to invest and otherwise engage in business restoration efforts. Mr. Chairman, I respectfully request that your committee and this Congress immediately provide the required statutory authorization and federal funding for Category 5 levee protection. The greater New Orleans business community looks forward to working closely with you in that vitally important effort.

IMPORTANCE OF MARITIME INDUSTRY TO REGION

The very founding of the City of New Orleans was based upon the distinct and inherent advantages it provided, and continues to provide, as a port city for the Nation's maritime and trade industries. The Port of New Orleans serves as one of the Nation's key intermodal gateways for domestic and international trade. The geographic proximity of the Port to the Gulf of Mexico and the mouth of the Mississippi River makes it the ideal and central location for the inbound and outbound shipment of cargo. As a result, more than 6000 oceangoing vessels call on the Port annually. As a key transportation focal point on the Mississippi River, the Port of New Orleans serves as the primary hub for the shipment of cargo on the Nation's inland waterways system. Given the regional access to major road systems, including Interstates I–10, 1–55 and I–59, the Port is perfectly situated to facilitate the highway transport of goods flowing through the New Orleans port region. Finally, the Port of New Orleans is the only port in the world with immediate rail access by six major national railroads, namely Union Pacific, Burlington Northern/Santa Fe, Kansas City Southern, Norfolk Southern, Canadian National, and CSX.

Hurricane Katrina completely shut down the Port of New Orleans. That total closure of the Port not only affected the economy of Southeast Louisiana, but also the entire Nation. In 2004 alone, more than 380,000 jobs in the United States were dependent on the cargo activity at the Port.

The Port is continuing to restore terminal and other services, and is now operating at approximately 40 percent of its pre-Katrina capacity. The Port of New Orle-

ans is still struggling with a limited workforce and the ability to move the cargo in and out of the Port. Damaged terminal, warehouse and other Port facilities, and highways and rail tracks need to be repaired and/or replaced. The recovery of the Port of New Orleans, along with other city functions and businesses, is tied to the problems of restoring the entire city. Without adequate infrastructure for longer term housing and family needs, workers will not be able to return.

But full restoration of Port services must be a given. With federal funding and other assistance, especially from the Army Corps of Engineers and the U.S. Department of Transportation, quickly restoring the Port and other ports in Southeast Louisiana to full operation will help return economic vibrancy to the area.

TOURISM IS A KEY ECONOMIC DRIVER FOR THE REGION

Mardi Gras. New Orleans Jazz Fest. Sugar Bowl. Annual business and other conventions. As reported by the New Orleans Metropolitan Convention and Visitors Bureau, these internationally-renowned events and activities, and the culinary, artistic, musical, and many, many other attributes of New Orleans, created a tourism industry within the region that supported more than 2500 companies with direct employment of approximately 81,000 people. Through that industry, direct visitor spending within the region was estimated at more than $5 billion annually. Restoration of that industry is vitally important not only to the New Orleans region but also to the fabric of our Nation as a whole.

New Orleans is the birthplace of jazz. And as one Congressman recently observed, "New Orleans taught the country how to eat well." New Orleans is a key part of the cultural and historical heritage of our country, and that heritage is largely responsible for the vibrant tourism industry enjoyed by the region. With federal funding support for the repair of damaged airport, highway, and other transportation services, with full restoration of other basic government services such as police and fire protection and utilities, and with other federal, state and local support, the tourism industry will return to the region. We must all work to ensure that it does return in order to provide additional economic development opportunities for businesses and citizens of the region.

OTHER ECONOMIC INITIATIVES OF IMPORTANCE TO THE NEW ORLEANS REGION

The New Orleans region was working hard, with great success, in attracting other business and industry sectors to provide a more diversified economic base for the area. Though those efforts were interrupted by Katrina, in the aftermath of that storm, the business leadership of the community is even more committed to luring other business and industries to the region.

Biomedical/Medical.—In New Orleans, 22 biotechnology firms had established businesses within the region, and more than 24,000 employees worked in the high-paying jobs within the New Orleans medical sector. Through Louisiana state investments in cancer research and gene therapy consortiums among Tulane University, Louisiana State University, and Xavier University, and in the state-of-the-art Bio-Innovation Center Wet Lab Incubator and other biomedical facilities, the New Orleans region was rapidly becoming a true biomedical research center on the Gulf Coast. Government and business leaders in the region want to continue these efforts to preserve and enhance these scientific and medical activities and the economic benefits that they provide.

Oil and Gas, Chemical, Manufacturing and Other Industries.—The Southeast Louisiana region is well-known as a center for the oil and gas and petrochemical industries. South Louisiana produces over a third of the Nation's domestic chemicals. Additionally, a third of the country's daily domestic oil and natural gas supply originates from the same region. New Orleans is fortunate to have major defense contractor manufacturing facilities within the region, including Northrop Grumman Ship Systems Avondale, Lockheed Martin, Textron, and Bollinger Shipyards, which employ collectively over 13,000 workers. The National Aeronautics and Space Administration (NASA) Michoud Assembly Facility manufacturers external fuel tanks for the space shuttle vehicles and certain parts for the Joint Strike Fighter. The largest coffee roasting plant in the world, operated by Folgers Coffee, is located within the New Orleans region. We must work to ensure that these industries remain to preserve economic and job opportunities for South Louisiana citizens. Additionally, and applying a concept that has worked well with the coffee industry, GNO, Inc. is working to expand local manufacturing job opportunities by encouraging appropriate businesses to locate factories and similar facilities near the Port of New Orleans, the source of imported materials such as steel, rubber, and plywood that would be used in their manufacturing operations.

Information Technology.—Because of a number of Federal programs in the greater New Orleans region which employ several thousand people, the region has become a center of excellence for "back office" technologies as evidenced by the information technology work at the National Finance Center, the largest payroll center in the Nation, and the SPAWAR Systems Center, home to the Defense Integrated Military Human Resources System (DIMHRS). Additionally, strong public/private partnerships in unique research and technology activity provide strong economic and employment benefits through the University of New Orleans (UNO) Research and Technology Park, the UNO/Northrop Grumman Maritime Technology Center of Excellence, the Bioinformatics Center at Children's Hospital, and the Louisiana Optical Network Initiative. These activities are extremely valuable to the economic well-being of the region, and we continue to work closely with Federal, State, and local officials and private entities to ensure the preservation of these businesses within the greater New Orleans area.

CONCLUSION

Bold recovery and other incentives are required to preserve business and economic opportunity in New Orleans and other affected Gulf Coast areas. Simply put, businesses will not return to the region unless the Administration and the Congress initiate strong, clear, definitive actions for regional recovery.

As the cochairman of the Economic Development Committee for the Mayor's Bring New Orleans Back Commission, I am extremely dedicated to the task of working to obtain necessary assurances and incentives to restore the economic and business health of the greater New Orleans region. We are working closely with the entire Louisiana Congressional delegation, the Governor of Louisiana, and other Federal, State and local officials on government funding and other initiatives for the business community. It is clear that no recovery will happen without the support of the Congress to repair and enhance the New Orleans levee system and other public facilities and structures, provide appropriate federal funding assistance for recovery efforts, and enact significant and effective business tax relief and incentives to restore New Orleans to its place as one of the primary business, cultural, and historical centers of our Nation.

Mr. Chairman, I thank you again for the opportunity to address your committee today. I look forward to working with you and your fellow committee members on the economic and business recovery of the greater New Orleans region.

STATEMENT OF MIRIAM ASCHKENASY, MD., MPH, OXFAM AMERICA, ENVIRONMENTAL PUBLIC HEALTH SPECIALIST, HARVARD HUMANITARIAN INSTITUTE

Mr. Chairman, Senator Jeffords, and members of the committee, thank you for the opportunity for Oxfam America to submit written testimony for the record. We appreciate your interest in gathering a variety of perspectives on the important issues of how the federal government is responding in the wake of hurricanes Katrina and Rita. We will be focusing specifically on the role of the federal government in protecting public health and safety in Louisiana.

Oxfam America is an international development and relief agency committed to developing lasting solutions to poverty, hunger, and social injustice. We are part of a confederation of twelve Oxfam organizations working together in more than 100 countries, and, for decades, we have conducted relief operations in Africa, Asia, and Latin America where governments do not have the resources to respond adequately to emergencies. In the United States, we support economic and community development in marginalized areas and have been working with local organizations in Mississippi, Louisiana, and Alabama for over a decade.

In Katrina's immediate aftermath we did not anticipate that our expertise and resources in emergency relief would be needed. People in the United States are fortunate to have numerous government organizations—from local fire and police departments to the National Guard and all the way up to the Federal Emergency Management Agency—that are well-equipped and ready to respond to emergencies. But as the scope of this disaster grew and the disaster response institutions failed on a massive scale, it became clear that there were substantial gaps that needed to be filled. Oxfam America launched, for the first time in its 35-year history, a relief effort within the United States, focusing on Louisiana and Mississippi. As in all other emergencies, our efforts are focused on assisting the poorest and most vulnerable communities.

In the United States, as elsewhere around the world, those living in poverty are the most vulnerable during disasters and are often also the last to get help. Oxfam's role is to help affected communities to identify their most urgent needs, to identify

what kinds of assistance are available for them, and to ensure their interests are represented at the local, State, and national levels when decisions are made that effect their future. Crucial among these decisions is deciding how people will be warned about, and protected from, environmental contamination as they return to live and work in these affected communities.

Just as institutions charged with protecting their safety failed the people of Louisiana and Mississippi in the hurricanes' immediate aftermath, so is it possible that government and State agencies could again be failing to protect residents as they try to rebuild their lives. Failure to address continuing threats to public health from environmental contamination and mold—threats that are present in neighborhoods and inside homes—could have deadly consequences in both the short and long term.

THREATS TO PUBLIC HEALTH AND SAFETY

During the past months, we at Oxfam have been working closely with local community 'organizations in Mississippi and Louisiana, including the Louisiana Environmental Action Network (LEAN) and the Southern Mutual Help Association (SMHA). Our first priority was to support immediate relief efforts, later transitioning into the equally critical work of helping protect communities from threats to their health and safety.

As a public health specialist for Oxfam and Harvard Humanitarian Institute, I have had several opportunities to tour the hurricane-stricken parishes of Louisiana in the company of our local partners. I have witnessed the total destruction of homes, towns, livelihoods, and communities. I viewed these areas through the professional lens of being an environmental public health specialist and a physician. But I also went to Louisiana as a human being. I was invited into destroyed and ravaged homes, speaking with families returning to live in their homes, while consoling others who had simply come to collect what little remained and to leave. I talked with city councilors and mayors and worked alongside local community organizations. I am privileged to share with you what I have learned and what concerns me from both an environmental public health perspective and a human one.

The Louisiana coast is accustomed to hurricanes, but the magnitude, overall destruction, and complexity of Hurricane Katrina make it unique. Amid the destruction of homes, business and infrastructure, the environmental contamination was extensive. Damage to large industrial companies in the impacted areas has led to a breach of storage containers and release of industrial chemicals into the surrounding soil and sludge. According to the Coast Guard, Katrina "unleashed at least 40 oil spills—10 of which are major—from ruptured pipelines and battered oil-storage facilities. In total, at least 193,000 barrels of oil and other petrochemicals were blown or driven by tides across the fragile marshy ecosystems and populated areas of the Plaquemines and St. Bernard parishes, southeast of New Orleans" (*Wall Street Journal*, 9/23/2005).

Despite this destruction, people are determined to return to their homes and communities. Some are returning to collect what is salvageable from their belongings and leaving; others are returning to try to repair, rebuild, and start again. When they do return, they will be exposing themselves to environmental contaminants, and, as families and communities, they will have to struggle with long-term environmental and public health impacts.

People who return to their homes—and those who are working to rebuild the region—are exposing themselves to serious health hazards. The sludge, silt, soil, air and water have been contaminated. Currently, we can only speculate as to some of the short and long-term effects that may affect a returning community based on prior exposure data. In the short term, these may include: rashes, headaches, nausea, vomiting, heat-related illness, respiratory-related illnesses, wound infections, exacerbation of chronic illness, and spontaneous abortion. In the long term, we may see decreased fertility rates, increased cancer rates, increased spontaneous abortion rates, increased fetal malformations or birth defects, as well as unknown long-term effects.

Other risks include:

- injury from debris, including structural instability, risk of lacerations and skin infections,
- asthma, allergies and other lung problems from burning of debris, from aerosolization of dried sludge, from dust from the deconstruction of damaged buildings,
- infection from a lack of proper cleaning facilities, skin exposure, exposure to sewage,
- unknown risks from remaining sludge that contains industrial byproducts and sewage,

• exposure to extensive amounts of mold that not only present a health hazard but also can create structural damage,

• possible carbon monoxide poisoning for those using makeshift heating sources.

Further, people are exposed to these risks in a context where medical facilities are damaged or nonexistent; health care personnel, in many cases, have been evacuated; resources and supplies are thin to nonexistent; and many areas continue to have no running water, electricity, or sewage facilities.

Let me be clear: These problems are in no way limited to New Orleans. An overwhelming number of towns and communities have been affected, and this has stretched the response and relief system to its limit. Many smaller towns with fewer people are still having difficulty accessing local responders and are experiencing continuing delays in receiving basic relief requirements. There needs to be clearer assessments performed of the health needs of people who have returned to hurricane-affected communities—we are suffering from a severe shortage of standard public health data.

As people return to the area, they are ill-equipped both in terms of information and in terms of protections. People are making decisions about going home without clear information and guidance about the risks associated with return. There is little information regarding what they should be concerned about, what signs and symptoms to watch for, when to leave the area and seek medical attention, and where they can find it.

For those who do return, they are not receiving proper instructions on how to clean up as safely as possible. Further, there is a paucity of proper cleaning supplies that limit exposure to possible contaminants, such as industrial gloves, masks, and goggles. In many areas, these items are not available, and many families do not have the money to purchase them even if they can find these materials that are in short supply.

To recount just one example, I met one man and his family who were cleaning debris and mold from their home. They were intent on moving back to their community in the southern parishes. The family let me into their house only after they were convinced that I was not there to condemn it. The house had several stories, and the entire bottom floor had been covered with 6 inches of sludge. This man and his family had already cleaned up two-thirds of the bottom floor, and he had been sleeping on a cot in the bottom floor living room for several days. The back room still had areas with 6 inches of sludge on the floor.

In another back room, they had pulled up the carpet and on the wall you could see the water line. Above the water line, a 12-inch band of black mold was growing on the wall. This man had been doing cleanup in a pair of sneaker and jeans, wearing no shirt, gloves, eye protection, or boots. His daughter-in-law was wearing rain boots, shorts, a t-shirt, and no gloves. His son had already developed a skin infection and was no longer helping with the cleanup. I spoke with the man specifically about the hazards he was facing, including toxins, bacteria and risk of injury from debris.

He said he knew about these risks, but stated he had received all his vaccinations and was going to be OK. I encouraged him to use protective gear when cleaning, and he again assured me that this was not his first hurricane. He claimed he knew what to do and would be fine, but he did ask me if we had any gloves to give him.

In Louisiana, you hear these stories again and again. After I testified before the State Health and Welfare Committee, several legislators came up to me and said, "I got sick." One woman said she got a rash and hives from her house, and her friend was sick with a fever and a lung infection. Another legislator said he and his wife went back to clean up, and she became so sick with headaches and nausea that he sent her back to her family.

Families have lost their homes, their possessions, important documents, the sense of security and the literal roof above their heads. These factors, coupled with the environmental health hazards, the lack of services, and the loss of community make public health interventions key in restoring the southern parishes to even the most basic level of function. Hurricanes Katrina and Rita will lead to a cumulative impact of multiple stressors that will inevitably negatively affect the public health of these already hard-hit communities. A combination of short-, medium- and long-term support and services must be provided to help these communities survive.

We understand that families may want to return to their home regardless of the risks. These are where they raise their kids, have their friends, and live their lives. It is imperative, though, that they have a full understanding of the hazards they are going to face, have support to help mitigate those hazards, and try to stay as safe as possible. To fail to provide these first lines of defense against further injury, illness, and death would be to facilitate the onset of yet another emergency.

OXFAM'S WORK TO PROTECT PUBLIC HEALTH IN LOUISIANA

Working with our local partners, Oxfam has been monitoring the public health situation in Louisiana and working to help educate and protect returnees. Oxfam partnered with LEAN and SMHA to distribute "Re-entry Protection Kits" which contain items such as bleach, dust masks, gloves, boot covers, biohazard bags, goggles, and protective covering. SMHA, LEAN and Oxfam distributed 100 kits in Erath and Jean Lafitte. The EPA has since contacted LEAN to commend them on their work. Oxfam has also put together a Public Service Announcement with LEAN. The thirty-second spot will be airing in southern Louisiana, warning returnees of the public health risks of returning home and offering advice on how to protect themselves.

As mentioned above, we provided testimony before State legislators on similar issues to those presented here. At a news conference held at the Erath distribution, we joined our partners in calling for more federal action on the public health front. This call was echoed by Louisiana State Representative Sydnie Mae Durand at the news conference.

On November 12, LEAN will be hosting a key conference, "Rebuilding Louisiana," which will call attention to the environmental hazards that pose public health risks to people returning to their homes. LEAN and other Oxfam partners have been filling crucial information and protection gaps left by the Federal and State Government, but these activities need to be expanded to reach all the affected communities.

RECOMMENDATIONS

We urge the Environmental Protection Agency to take the following important steps to inform returnees of the health and safety risks they face and to help them to mitigate those risks:

(1) *Encourage evacuees not to return home if communities are not safe.* If possible, evacuees should wait until services such as water, sewer, electricity, medical/911 services, and phones are functioning before returning to their homes. Children, the elderly, pregnant women, and people with certain medical conditions are particularly at risk and should stay away if at all possible.

(2) *Provide information and instruction using clear, straightforward language.* The EPA and Department of Environmental Quality must distribute educational materials, making sure they are practical, with little or no technical jargon. Recommendations must be clear and concise to avoid ambiguity.

(3) *Provide clean up and recovery kits.* These kits serve two important purposes: First, they provide families with essential self-protection tools they may not otherwise have; and second, they educate families about what dangers to watch out for and how to take precautionary measures.

(4) *Ensure that rural communities also have access to information and precautionary measures.* With the spotlight on New Orleans, the southern rural parishes devastated by the hurricanes and flooding have been neglected, and this must not continue.

(5) *Conduct extensive testing for contamination.* Continued testing is imperative to determine which chemicals and pollutants are now in the surrounding environment, at what levels they remain, and what potential dangers they pose to those who will have long-term exposure.

(6) *Continue injury and health surveillance.* Families returning to affected areas are going to be exposed to health hazards. Monitoring of their health will help determine how dangerous these areas are and what the long-term health needs of the community may be. Agencies must continue in the long term to monitor the physical and mental health of these communities, including evaluating the environmental surveillance data by the DEQ and rates of disease and illness.

CPR CENTER FOR PROGRESSIVE REFORM

Broken Levees: Why They Failed[1]

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 failure of the levees was not just predictable; it was predicted. Scientists have warned for years that a strong storm could breach the levees. Likewise, efforts to make New Orleans safer go back years. In 1965, Congress authorized the Corps of Engineers to improve hurricane protection for New Orleans. The Corps considered two options, pursued one of them for a while, and then changed to the second option. Neither project, however, was designed to protect New Orleans from more than a category 3 hurricane. Thus, neither option was intended to save New Orleans from a hurricane like Katrina.

The failure to protect New Orleans resulted from an inadequate plan by the Army Corps of Engineers to save the city and from the failure of federal government to fund badly needed improvements in that plan. 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.

Right-wing pundits and politicians, however, have attempted to blame the flooding on environmental litigation that temporarily halted the Corps from pursuing the first option.[2] They argue that if the law suit had not been initiated, the Corps would have been able to complete the first option and the city would therefore have been better protected. As this report documents, these claims are wholly unfounded. It is beyond dispute that the litigation would have only temporarily delayed the Corps from pursing option one had it chosen to do so. In the process of responding to the lawsuit, however, the Corps decided to switch to the second option because it believed that one represented the better policy. This switch also responded to the widespread local public opposition to the first option. In any case, the first option would not have prevented the flooding in New Orleans even if it had been completed. Neither the first or second option was designed to protect New Orleans from more than a category 3 hurricane. Moreover, the first option, had it been completed, would not have stopped the flooding that occurred along the ship canal.

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[1] This Special Report was prepared by Center for Progressive Reform scholars Donald T. Hornstein, Douglas A. Kysar, Thomas O. McGarity, and Sidney A. Shapiro. For more information, contact CPR's media office at mfreeman@progressivereform.org. Visit CPR on the web at www.progressivereform.org.

[2] See, e.g., R. Emmett Tyrell, Jr., Eco-Catastrophe Echoes, *Washington Times*, September 16, 2005; John Berlau, Greens vs. Levees, *National Review*, Online, September 8, 2005, available at http://www.nationalreview.com; You Can Pay Me Now, or You Can Pay Me Later, *The Quando Blog*, available at http://www.quando.net/details.aspx?Entry=2595.

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's told television correspondent Diane Sawyer that no one could have foreseen the breach of those levees.[3] In fact, over a period of many years, scientists had predicted that a strong storm could 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 Mississippi River Gulf Outlet 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.[4]

The President's comments were addressed to the question of the adequacy of huge and complex levee system that surrounds New Orleans and makes the continued existence of that city possible. Hurricane Katrina may have been an act of Nature, but the levees and associated flood protection systems that are an indispensable part of the infrastructure of New Orleans and surrounding areas are clearly the works of human beings. And the level of protection afforded by the New Orleans flood control apparatus is primarily a function of the level of resources, political will, and competence that federal and state governments applied to planning, construction, and maintenance of that system. In short, the security provided by the levee system and associated protections have always been the responsibility of government, and the government failed to fulfill its responsibility.

Overview of the Levee System

There are three flood risks in New Orleans. Because New Orleans is situated in the delta formed at the mouth of the Mississippi River, it has always maintained a flood control system in place to protect it from the risks of flooding from the river to the south, Lake Pontchartrain to the north and Lake Borgne and the Gulf of Mexico to the east.[5]

There is a risk of flooding from the Mississippi River because of flood waters coming down the Mississippi River from rainfall occurring hundreds of miles to the north. The primary line of defense against river flooding is an extensive system of levees and dikes that extends along the length of the river. That system, which contains the city's highest levees, averaging 25 feet above sea level in height, was not involved in the Hurricane Katrina disaster. Claims that environmental litigation involving the Mississippi River levees caused the New Orleans floods are therefore uninformed and unfounded.[6]

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[3] Dan Froomkin, White House Briefing: A Dearth of Answers (Sept. 1, 2005), available at http://www.washingtonpost.com/wp-dyn/content/blog/2005/09/01/BL2005090100915.html?nav=rss_politics.
[4] Michael Grunwald, Canal May Have Worsened City's Flooding, *Washington Post*, September 14, 2005, at A21.
[5] Mark Fischetti, Drowning New Orleans, *Scientific American*, October 1, 2001.
[6] See, e.g., R. Emmett Tyrell, Jr., Eco-Catastrophe Echoes, *Washington Times*, September 16, 2005; John Berlau, Greens vs. Levees, *National Review*, Online, September 8, 2005, available at http://www.nationalreview.com

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. They range from 13.5 to 18 feet above sea level in height.

Another series of somewhat lower levees provides protection to Eastern New Orleans and St. Bernard Parish, which are located to the north and east of New Orleans, from Lake Pontchartrain on the north and from Lake Borgne and the Gulf on the west. 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.[7] All of the levees were built by the Corps of Engineers and are maintained by various local levee districts.[8]

In addition to the drainage canals, the Corps of Engineers constructed two very large canals to permit ocean-going vessels to move from the Mississippi River through the city to Lake Pontchartrain or the Gulf of Mexico to the south of 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 Mississippi River-Gulf Outlet (MRGO) canal bisects the Industrial Canal and travels east/west to the Intracoastal Canal near Lake Bourne. The shipping canal levees consist of concrete floodwalls and earthen levees.

Levee Planning and Construction

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.[9] To implement this statute, the Corps of Engineers studied two major options -- the "high level" option and the "barrier" option.

The High Level Option

The "high level" option consisted simply of raising all of the existing levees and, where necessary, constructing new high level levees to a height that would prevent flooding

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[7] First Line of Defense: Hoping the Levees Hold, available at http://www.nola.com/hurricane/popup/nolalevees_jpg.html.

[8] Id.

[9] Hearings on Hurricane Protection Plan for Lake Pontchartrain and Vicinity before the Subcommittee on Water Resources of the House Committee on Public Works and Transportation, 95th Cong., 2d Sess. (1978) [hereinafter cited as 1978 House Hearings], at 20 (testimony of Colonel Early J. Rush III).

that could result from the "standard project hurricane," a mythical hurricane that was designed to simulate a hurricane that would hit New Orleans once every 200 to 300 years.[10] Although the Corps later determined that the model hurricane was impossible, it was roughly equivalent to a fast moving category 3 storm on the Saffir-Simpson hurricane scale.[11] In practice this would have resulted in raising the levees from between 9.3 and 13.5 feet above sea level to between 16 and 18.5 feet above sea level.[12]

The Barrier Option

Under the "barrier" option, the Corps was to construct levees along the far eastern edge of Lake Pontchartrain where it flows into Lake Borgne and the Gulf of Mexico through two relatively narrow channels at the Rigolets and Chef Menteur. The Corps was supposed to construct huge structures at the two passes that would allow water to flow back and forth between the lakes but could be closed as a hurricane approached. The Corps believed that the levees and the barrier structure would prevent the storm surge preceding the hurricane from crossing from Lake Bourne into Lake Pontchartrain.[13] Like the high level option, the barrier option was designed to protect against the standard project hurricane, a hypothetical hurricane that was the equivalent of a fast moving Category 3 hurricane.

First Choice: The Barrier Option

The high option had several drawbacks, including the need to obtain rights of way for additional land near the levees to allow them to be widened so that they could be raised. In addition, the high level plan would not prevent the flooding of the industrial areas that were located outside the levees.[14] The Corps therefore decided to implement the barrier option, and construction began on floodwalls along the east and west sides of the Industrial Canal in 1967.[15]

To speed the project along, the Orleans Levee Board financed and constructed portions of the floodwalls, and this relative inexpensive aspect of the project was virtually completed by 1973.[16] Work on the barrier structures and levees running from New Orleans to the those structures, however, was greatly delayed because landowners opposed to the project demanded high prices for the property that the Corps needed for those levees, forcing the Corps to exercise its power of eminent domain.[17]

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[10] 1978 House Hearings, supra, at 21 (testimony of Colonel Early J. Rush III).
[11] Jerry Mitchell, E-Mail Suggests Government Seeking to Blame Groups, Mississippi *Clarion-Ledger*, September 16, 2005, at A1 (quoting Corps of Engineers spokesperson John Hall); John McQuaid & Mark Schleifstein, Evolving Danger, New Orleans *Times-Picayune*, June 23, 2002, at J12.
[12] United States General Accounting Office, Cost, Schedule, and Performance Problems of the Lake Pontchartrain and Vicinity, Louisiana, Hurricane Protection Project (PSAD-76-161 (August 31, 1976) [hereinafter cited as 1976 GAO Report], at 3.
[13] 1978 House Hearings, supra, at 22 (testimony of Colonel early J. Rush III).
[14] Id. at 21 (testimony of Colonel early J. Rush III).
[15] The Orleans Levee District -- A History, available at http://www/orleanslevee.com/history.htm [hereinafter cited as Levee District History]
[16] Id.
[17] 1976 GAO Report, supra, at 16.

In 1976, a coalition of local fishermen and an environmental group called Save Our Wetlands sued the Corps of Engineers alleging that the final environmental impact statement (FEIS) for the project was inadequate.[18] On December 30, 1977, a federal judge issued an injunction preventing the Corps from conducting any work on the barrier project until it had prepared an adequate FEIS. The injunction was subsequently modified to permit continued construction of the levees between the lake and the City of New Orleans.[19]

Second Choice: The High Level Plan

The lawsuit temporarily prevented the Corps from doing further work on the barrier option, but the Corps abandoned this option for other reasons. When the injunction sent the Corps back to the drawing board, it reconsidered the costs and benefits of the barrier and high level options. At the same time, it was encountering strong opposition to the barrier plan from local citizens who did not want to pay a very high price for a project that might endanger the vitality of Lake Pontchartrain and from representatives of areas on the Lake Borgne side of the barrier who would have been at greater risk of flooding during hurricanes.[20]

The intense public opposition was in evidence in congressional hearings conducted in New Orleans the week after the injunction issued. A spokesperson for the League of Women Voters argued that the Corps had never undertaken a study of the cost to taxpayers of maintaining the urbanization of wetlands that the project envisioned, and she noted that the voters of New Orleans had defeated proposals to participate in the financing of the barrier project on three separate occasions, but had voted to approve a similar project without the barriers the previous year.[21] An informal poll conducted by Representative Robert Livingston indicated that a substantial majority of the New Orleans citizens either opposed the project (38.5 percent) or favored discontinuation until the studies could be completed (23.6 percent).[22] Not known for his antipathy to federally financed public works projects in his district, Representative Livingston expressed considerable reservations about the wisdom of this particular project. The state representative from St. Tammany Parish, part of which was on the Lake Borne side of the barrier project warned that the project would put his parish at risk when the gates were closed because it would deflect the surge from Lake Bourne into St. Tammany parish.[23]

By 1982, the New Orleans district of the Corps of Engineers had changed its mind and favored the high level plan "because it would cost less than the barrier plan" and "have fewer detrimental effects on Lake Pontchartrain's environment."[24] One of the factors underlying the changed cost assessment was no doubt the escalating cost of acquiring rights of way from

[18] Levee District History.
[19] Id.
[20] See discussion of the opposition below.
[21] 1978 House Hearings, supra, at 11 (testimony of Charlotte H. Nelson).
[22] 1978 House Hearings, supra, at 12.
[23] 1978 House Hearings, supra, at 47-48 (testimony of Edward G. Scogin).
[24] United States General Accounting Office, Improved Planning Needed by the Corps of Engineers to Resolve Environmental, Technical and Financial Issues on the Lake Pontchartain Hurricane Protection Project (GAO/MASAD-82-39 (August 17, 1982), at 2.

property owners who opposed the barrier project.[25] The Corps did not make a final decision on how to proceed until 1985 when it decided to implement the high level plan because by then it was considerably less expensive. 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.[26]

Why the Levees Failed

Lake Pontchartrain

The water that flooded New Orleans did not flow over the high level 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.

The floodwalls along the two "outlet" canals were breached even though they had recently been remodeled. The Corps had enhanced these floodwalls pursuant to the "high level" hurricane protection plan. In the aftermath of the storm, the Corps of Engineers stressed that the two specific outlet levees that had breached were "fully completed" and not on the list of unfunded projects.[27]

Nevertheless, the breach should have been anticipated. The hurricane protection plan that was implemented after 1985 was designed to protect the city against the "standard project" hurricane that roughly corresponds to a fast-moving category 3 storm. Scientists had for years prior to the storm predicted that the levee system could not withstand a Category 4 or Category 5 storm.[28] Hurricane Katrina struck the Louisiana/Mississippi coast as a Category 4 storm.

Lake Borgne

Although the Corps enhanced the levees protecting Eastern New Orleans and St. Bernard Parish as part of the high level plan, these areas were not protected 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,

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[25] 1976 GAO Report, supra, at 16.
[26] Levee District History, supra.
[27] Andrew Martin & Andrew Zajac, Flood-Control Funds Short of Requests, *Chicago Tribune*, September 1, 2005, at 7.
[28] Jerry Mitchell, E-Mail Suggests Government Seeking to Blame Groups, Mississippi *Clarion-Ledger*, September 16, 2005, at A1 (quoting Corps of Engineers spokesperson John Hall); John McQuaid & Mark Schleifstein, Evolving Danger, New Orleans *Times-Picayune*, June 23, 2002, at J12.

reported that the eastern levees were "literally leveled in places."[29] That same surge probably caused the breaches in the floodwalls along the Industrial canal.

The MRGO 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 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.[30] According to one estimate, the government spends $7 million to $8 million per year (about $10,000 for every large vessel that uses the canal) just to maintain the canal.[31]

This very scenario was predicted long before Hurricane Katrina struck. In 2002, the Corps of Engineers acknowledged that "[t]he MRGO levee is more likely to be affected than the area in the lake itself."[32] 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."[33]

More recently, Professor Hassan Mashriqui of Louisiana State University undertook an extensive modeling exercise of the "shotgun" scenario.[34] Professor Mashriqui warned that the MRGO created a "funnel" that would direct a storm surge from Lake Bourne to the Industrial Canal with resulting destruction of flood walls along that canal.[35] Satellite images and Corps of Engineers flyovers confirmed that the storm surge destroyed levees along the MRGO canal in a way that was entirely consistent with Professor Mashriqui's model, and it is likely that the same surge destroyed portions of the floodwall along the Industrial Canal.[36] G. Paul Kemp, an oceanographer at the LSU Hurricane Center, agreed that the MRGO "funnel" was "a back door into New Orleans," and he had little doubt that it "was the initial cause of the disaster."[37] In addition to its potential to channel hurricane surges into the heart of New Orleans, the MRGO canal has over the years severely eroded the wetlands south of New

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[29] Ralph Vartabedian, Much Wider Damage to Levees Is Disclosed, *Los Angeles Times*, Sept. 13, 2005, available at http://www.latimes.com/news/nationworld/nation/la-na-corps13sep13,0,5962987.story?coll=la-home-headlines.

[30] Michael Grunwald, Canal May Have Worsened City's Flooding, *Washington Post*, September 14, 2004, at A21.

[31] Lake Pontchartrain Basin Association, Martello Castle Background Information, available at http://wetmaap.org/Martello_Castle/Supplement/mc_background.html [hereinafter cited as Martello Castle Background Information].

[32] Jerry Mitchell, E-Mail Suggests Government Seeking to Blame Groups, Mississippi *Clarion-Ledger*, September 16, 2005, at A1 (quoting Corps of Engineers spokesperson John Hall); John McQuaid & Mark Schleifstein, Evolving Danger, New Orleans *Times-Picayune*, June 23, 2002, at J12.

[33] John McQuaid & Mark Schleifstein, Evolving Danger, New Orleans *Times-Picayune*, June 23, 2002, at J12.

[34] Michael Grunwald, Canal May Have Worsened City's Flooding, *Washington Post*, September 14, 2004, at A21.

[35] Id.

[36] Id.

[37] Id.

Orleans.[38] In 1998, the St. Bernard parish Council unanimously passed a resolution demanding that the MRGO be closed.[39]

Why New Orleans Was Not Better Protected

Not a National Priority

The vulnerability of New Orleans to a catastrophe were well known and widely predicted, yet recent efforts to enhance the protection of New Orleans from Lake Pontchartrain have floundered. An attempt in 1996 to re-evaluate the Lake Pontchartrain levees broke down in disputes over modeling and other bureaucratic disagreements.[40] More recently, the Bush Administration rejected a Corps of Engineers 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]

Joseph Suhayda, an Emeritus Professor of Engineering at LSU, observed that the part of the 17th Street floodwall where a recent breach occurred was four feet lower than the rest of the floodwall. He believes that "they could have significantly reduced the impact" of Hurricane Katrina if the improvement projects had been fully funded.[42] The chief of engineers for the Corps, however, responded that had the pending projects "been fully complete," flooding of the business district and the French Quarter would still have resulted from the intensity of the storm.[43]

Mike Parker, a former Republican Congressman from Mississippi who was until 2002 the chief of the US Army Corps of Engineers, 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.[44] After Hurricane Katrina struck, Mr. Parker added 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 have been less flooding than you have."[45] An official Corps of Engineers memo dated May 2005, long after Parker left the agency, seemed to corroborate this possibility. It stated that the Bush Administration's

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[38] Martello Castle Background Information, supra.
[39] Michael Grunwald, Canal May Have Worsened City's Flooding, *Washington Post*, September 14, 2004, at A21.
[40] John McQuaid & Mark Schleifstein, Evolving Danger, New Orleans *Times-Picayune*, June 23, 2002, at J12.
[41] Andrew Martin & Andrew Zajac, Flood-Control Funds Short of Requests, *Chicago Tribune*, September 1, 2005, at 7.
[42] Id.
[43] Id. See also Michael Grunwald, Money Flowed to Questionable Projects, *Washington Post*, September 8, 2005, at A1.
[44] John McQuaid & Mark Schleifstein, Shifting Tides, New Orleans *Times-Picayune*, June 26, 2002, at 14.
[45] Andrew Martin & Andrew Zajac, Flood-Control Funds Short of Requests, *Chicago Tribune*, September 1, 2005, at 7.

funding levels for fiscal years 2005 and 2006 were not enough to pay for new construction on the New Orleans levees.[46]

Although it is tempting to blame the Bush 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 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, unrelated to the New Orleans levee protection system.[47]

Not a Corps Priority

The Corps of Engineers aided and abetted the lack of attention paid to protecting New Orleans in three ways. First, the Corps is very reluctant to participate in the process of setting priorities for its projects. 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 those projects that receive funding and those that do not.[48]

Second, the Corps' cost-benefit analysis procedures do not require the analysts doing the assessment to take potential loss of life into account in the analysis. According to the 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.[49] In situations where historical data exist, the analysts have the option to estimate the number of persons potentially affected by a project and include this number as an additional factor for the consideration of decision makers. Hence, a high cost project that has few economic benefits, but which would save many lives, may not pass the cost-benefit test if the Corps does not include the lives saved as a monetized benefit.

Finally, even when Congress has appropriated money to protect New Orleans better, the Corps apparently 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.[50]

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[46] Andy Sullivan, Budget Cuts Delayed New Orleans Flood Control Work, Reuters, Sept. 1 2005, available at http://www.alertnet.org/thenews/newsdesk/N01279059.htm

[47] Michael Grunwald, Money Flowed to Questionable Projects, *Washington Post*, September 8, 2005, at A1.

[48] Id. (quoting Tim Searchinger, senior attorney, Environmental Defense).

[49] Government Accountability Office, Improved Analysis of Costs and Benefits Needed for Sacramento Flood Protection Project 20 n.13 (2003) (GAO-04-3). Also, Jim Barnett, Instead of Shoring Up Levees, Corps Built More, *The Oregonian*, September 18, 2005, http://www.oregonlive.com/search/index.ssf?/base/exclude/112695455718420.xml?oregonian?lcg&coll=7.

[50] Andrew Martin & Andrew Zajac, Corps: Lack of Funds Did Not Contribute to Flooding, *Chicago Tribune*, September 2, 2005, at 1.

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 budget support for improving the levee system even though its limitations were widely recognized.

Some conservatives, however, are attempting to tell another story. Not long after the damage to New Orleans became apparent, retired Corps of Engineers officials and conservative pundits began a concerted campaign to blame the damage on the litigation that Save Our Wetlands and Lake Pontchartrain fishermen brought against the Corps of Engineers in 1976.[51] Citing the barrier project litigation and irrelevant litigation involving the Mississippi River levee system far upstream of New Orleans, conservative Commentator R. Emmett Tyrell, Jr. claims that "[f]or too long, environmentalist fanatics with no sense of a broad-based commonweal have had a veto over government and private-sector projects essential to the health and well-being of millions of Americans."[52] A conservative blogger referred to the lawsuit against the barrier project, described above, as "green genocide."[53] A house task force has decided to add the litigation to its agenda as it considers reforms for the National Environmental Policy Act (NEPA).[54] And the Bush Administration Justice Department has, at the request of Senator James Inhofe, 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.[55] These claims are wholly unfounded.

Temporary Interruption

The lawsuit brought by the environmentalists was entirely justified. The EIS filed by the Corps was clearly inadequate. Nevertheless, it is clear beyond dispute that the injunction should have only delayed the project slightly until the Corps remedied the problems that the court had identified in the FEIS.

The court in the *Save Our Wetlands* litigation found that "the picture of the project painted in the FEIS was not in fact a tested conclusion but a hope by the persons planning the project that it could in fact be constructed so as to meet the environmental objectives set out in the FEIS."[56] The court noted that the Corps' chief engineer for the New Orleans Division had

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[51] Ralph Vartabedian & Peter Pae, A Barrier that Could Have Been, *Los Angeles Times*, September 9, 2005, at A1 (quoting former Corps of Engineers chief counsel Joseph Towers).
[52] R. Emmett Tyrell, Jr., Eco-Catastrophe Echoes, *Washington Times*, September 16, 2005.
[53] Michael Tremoglie, New Orleans: A Green Genocide, *FrontPageMagazine*.com, September 8, 2005, available at http://www.frontpagemag.com/Articles/rintable.asp?ID=19418.
[54] Ralph Vartabedian & Richard B. Schmitt, Mid-60s Project Fuels Environmental Fight, *Los Angeles Times*, September 17, 2005, at A17.
[55] Dan Egan, Senate Panel Investigating Challenges to Levees, *Washington Post*, September 17, 2005, at A10; Jerry Mitchell, E-Mail Suggests Government Seeking to Blame Groups, Mississippi *Clarion-Ledger*, September 16, 2005, at A1; Mark Sherman, Justice Dept. Looks at Lawsuits, Levees, *Seattle Post-Intelligencer*, September 16, 2005.
[56] Save Our Wetlands v. Rush, Civ. No. 75-3710, Slip Opinion (E.D. La. 1977).

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. The chief engineer feared that the flow of water between the lakes, which was critical to maintaining the integrity of marine life in Lake Pontchartrain, was far less in the new version of the project than in the earlier version. The requested model studies were initiated, but they had not been completed when the FEIS came out, and it continued to rely upon the obsolete studies.[57]

More importantly, the biological analysis undertaken in the FEIS 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. The Corps of Engineers official who was responsible for preparing the EIS expressed reservations about the statements on the effects of the structures on marine life in the lake, and he suggested that the conclusion that the project "would not" have a significant impact on lake biology should be changed to "should not." He was, however, overruled. The court further noted that the assessment of the benefits of the project included the benefits of further urban development on wetlands that would be reclaimed from the lake after the project was completed, but it failed to take into consideration that the area had also been designated as a protected wetland. A Corps economist pointed this out and asked that the analysis be changed, but he was overruled.[58]

Finally, the court concluded that in light of "the problems of which the Corps was aware with respect to the possibility of significantly decreased tidal flow through the structures," the analysis of alternatives in the FEIS was inadequate. The court concluded that the FEIS "precludes both the public and the governmental parties from the opportunity to fairly and adequately analyze the benefits and detriments of the proposed plan and any alternatives to it."[59]

The court therefore enjoined further work on the barrier structures aspect of the project until the Corps had completed an adequate FEIS. It stated in no uncertain terms, however, that its opinion and order should "in no way be construed as precluding the Lake Pontchartrain project as proposed or reflecting on its advisability in any manner," and it stressed that "[u]pon proper compliance with the law with regard to the impact statement, this injunction will be dissolved and any hurricane plan thus properly presented will be allowed to proceed."[60]

Although some recent commentators have stated unequivocally that the court's injunction prevented the barrier project from going forward, there is simply no dispute that the injunction should have delayed the barrier option only until the Corps remedied the problems that the court had identified in the EIS. The court would have lifted the injunction as soon as the Corps of Engineers 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.

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[57] Id. at 5.
[58] Id. at 6.
[59] Id.
[60] Id. at 7.

The Real Story

The real story is considerably different from the version being promoted by conservative commentators and politicians. As established earlier, the Corps did not abandon the project because of the lawsuit. In the process of responding to the EIS, the Corps reevaluated the "high level" alternative and decided to adopt that approach instead. There was also intense public opposition to the barrier plan from local political officials and local citizens.

Moreover, it is now becoming clear that Hurricane Katrina 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 Bourne to the conjunction of the MRGO canal with the Industrial canal and that the same surge probably caused the breaches in the floodwalls along the Industrial canal. The barrier plan that 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.

Finally, as discussed earlier, the 1977 barrier project would not have protected New Orleans from Hurricane Katrina, even if it had been built. The project was designed to withstand only a fast-moving Category 3 hurricane, based on a model called the "standard project hurricane,"[61] and it was never clear that the project would in fact have worked as envisioned, because the model was flawed. A spokesperson for the New Orleans division of the Corps acknowledged that he was not sure "how much [the barrier project] would have prevented anything."[62] It should not be equated with the recently proposed barrier projects designed to withstand a Category 5 hurricane and to be more environmentally friendly. It is by no means clear that the barrier project as envisioned in 1977 would have protected New Orleans from the Lake Pontchartrain surge of Hurricane Katrina.

Conclusion

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 fast moving category 3 hurricane. Efforts to improve the levees have fallen victim to budget cuts in the Bush administration and previous administrations. 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.

The right wing attempt to blame the environmentalists, while politically convenient, is completely rebutted by the facts. It is beyond dispute that the EIS litigation would have only temporarily delayed the Corps from pursuing the barrier option had it chosen to do so. We

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[61] Jerry Mitchell, E-Mail Suggests Government Seeking to Blame Groups, Mississippi *Clarion-Ledger*, September 16, 2005, at A1 (quoting Corps of Engineers spokesperson John Hall); John McQuaid & Mark Schleifstein, Evolving Danger, New Orleans *Times-Picayune*, June 23, 2002, at J12.

[62] Jerry Mitchell, E-Mail Suggests Government Seeking to Blame Groups, Mississippi *Clarion-Ledger*, September 16, 2005, at A1.

also know that the Corps decided to switch to the high level option because it believed that it was the better policy. This switch also responded to broad-scale local public opposition to the barrier option. In any case, the barrier option would not have prevented the flooding in New Orleans even if it had been completed. Neither the barrier nor high level option was designed to protect New Orleans from more than a category 3 hurricane. Moreover, the barrier option, had it been completed, would not have stopped the flooding that occurred along the ship canal.

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REPORT TO THE CONGRESS

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

Cost, Schedule, And Performance Problems Of The Lake Pontchartrain And Vicinity, Louisiana, Hurricane Protection Project

Corps of Engineers (Civil Functions)

Department of the Army

The cost of the Lake Pontchartrain and Vicinity, Louisiana, Hurricane project has quadrupled since 1965 primarily because of inflation. Scheduled completion has been delayed 13 years. In addition, project objectives may not be attained if key elements are not completed as planned.

PSAD-76-161

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-181997

To the President of the Senate and the
Speaker of the House of Representatives

This report describes the status of the Lake Pontchartrain and Vicinity, Louisiana, Hurricane Protection project and suggests ways to improve the construction of this project. It is part of our continuing effort to provide the Congress with information concerning major civil acquisition projects.

Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Secretary of Defense and the Secretary of the Army.

ACTING Comptroller General
of the United States

Contents

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

COST, SCHEDULE, AND PERFORMANCE PROBLEMS OF THE LAKE PONTCHARTRAIN AND VICINITY, LOUISIANA, HURRICANE PROTECTION PROJECT

Corps of Engineers (Civil Functions)
Department of the Army

D I G E S T

The Lake Pontchartrain and Vicinity, Louisiana, Hurricane Protection plan--a series of control structures, concrete floodwalls, and levees--is intended to protect the lowlands in the Lake Pontchartrain tidal basin, lying within the greater New Orleans metropolitan area, from flooding by hurricane-induced sea surges and rainfall. Its estimated cost has risen from $85 million in 1965 to $352 million and its completion has been delayed 13 years.

Almost two-thirds of this increase is due to inflation. In spite of this, the project retains a benefit-to-cost ratio of about 13 to 1.

The Federal share of the project cost (70 percent) has increased from $66 million to $242 million. There is a possibility that the Federal share could increase by $85 million more should local jurisdictions be unable to pay their portions. (See p. 14.)

The Corps of Engineers' scheduled completion date has been delayed from 1978 to 1991. While many of the factors are outside the control of the Corps of Engineers, its own belated completion of design, plans, and specifications, has contributed to the delays. (See p. 16.)

GAO evaluated the Corps' estimate of project completion and found that:

--As early as March 1966, the March 1978 completion date was no longer valid; however, the Corps did not revise its completion date officially until January 1971.

--1993 was the most likely completion date. (See p. 18.)

The Corps' scheduling system was not designed to evaluate how individual construction delays affected the overall schedule. While the Corps believes that its present method of scheduling work has not been the cause of extensions in project completion dates, it plans to review this aspect for possible improvement.

The Secretary of the Army should instruct the Corps of Engineers to develop and use a system that will schedule critical construction features to facilitate timely completion of the project.

If the project can be completed as planned, the quality of protection afforded will be essentially unchanged from that originally authorized, although the area protected has been enlarged in response to local interest groups.

However, some local groups oppose construction of the key elements of the project, such as the barrier complexes at the Rigolets and Chef Menteur. If local support is not obtained, construction of key project elements may not be completed and hurricane-induced surges and waves may not be prevented from entering Lake Pontchartrain. (See p. 20.)

CHAPTER 1

INTRODUCTION

This review of the Corps of Engineers' Lake Pontchartrain and Vicinity, Louisiana, Hurricane Protection project is part of the General Accounting Office's continuing effort to provide the Congress with information about major acquisition programs of civil agencies. The main objective was to examine the status and selected management procedures affecting the project.

THREAT TO NEW ORLEANS

New Orleans, located in southeastern Louisiana, is a major metropolitan area with a population in excess of one million. It is also a major national and international commerce center primarily because of the port which, in terms of value of cargo tons, is the second largest in the nation and third largest in the world. The greater New Orleans metropolitan area, composed of Orleans, Jefferson, St. Charles, St. Bernard, and St. Tammany parishes, lies in the lowlands of the Lake Pontchartrain tidal basin. (See map on p. 5.) The dominant topographic feature in the area, Lake Pontchartrain--a shallow landlocked tidal basin approximately 640 square miles in area and averaging 12 feet in depth--connects with the Gulf of Mexico through Lake Borgne and the Mississippi Sound.

The greatest natural threat to the New Orleans area is posed by flooding from hurricane-induced sea surges, waves, and rainfall.

The hurricane surge that inundates coastal lowlands is the most destructive of the hurricane characteristics, accounting for three-fourths of the lives lost from hurricanes. Maximum surge heights experienced along the Gulf and Atlantic coasts range between 10 and 24 feet.

The waves generated by hurricane winds cause a great deal of damage to ships and shore structures. Breaking waves can run up and over shore structures whose crowns are higher than the wave heights. However, the force expended when waves break against structures is the most damaging effect. The rainfall accompanying a hurricane is generally quite heavy and sometimes torrential.

Recent hurricanes in the project area

The Louisiana coastline has been plagued by hurricanes at the rate of about two every 3 years. The Lake Pontchartrain area has been affected by many of these. Two prominent hurricanes were:

--Betsy (September 1965)--This hurricane passed west of New Orleans and caused damage estimated at about $90 million. Most of the damage was related to flooding in the eastern New Orleans area.

--Camille (August 1969)--This hurricane is described as "the most intense storm" ever to hit the United States. Although the storm did not hit New Orleans directly, the flooding conditions were almost the same as those resulting from Betsy. However, because the hurricane did not hit directly and a portion of the Lake Pontchartrain project had been constructed, damage was slight within the project area. (See p. 20.)

Project purpose and description

The Corps designed a model, referred to as the standard project hurricane, that was based on the most severe combination of meteorological conditions considered reasonably characteristic of the coastal region of Louisiana. This model was developed in a study by the Corps with the assistance of the United States Weather Bureau. The frequency of the standard project hurricane is once every 200 to 300 years.

The key project elements intended to prevent hurricane surges and waves from entering Lake Pontchartrain and inundating adjacent areas are the Rigolets, Chef Menteur Pass, and Seabrook complexes along with the levees along the eastern edge of the area.

The Rigolets complex includes a gated control structure, a closure dam, a navigation lock, and a connecting barrier levee which will run north through the complex to Apple Pie Ridge in St. Tammany Parish. The Chef Menteur Pass complex includes a gated control structure, a closure dam, a navigation floodgate, and a barrier levee. A short reach of the Gulf Intracostal Waterway has been rerouted south of the complex. At Seabrook, a navigation lock and a control structure will be constructed with stone dike connections to the shoreline.

Other project features include concrete floodwalls along the banks of the Inner Harbor Navigation Canal, navigation floodgates in two bayous, and protective levees. These new or raised levees are planned for the entire southern shore of the lake from the Bonnet Carre floodway in St. Charles Parish to South Point; New Orleans East, Citrus Back and Chalmette portions of the project. (See following map.)

This project plan was selected from the alternatives considered. The major alternative was a so-called high-level plan which comprised a levee and floodwall system corresponding generally to the levee and floodwall pattern of the selected plan but elevated to a significantly higher level and excluded the complexes at Rigolets and Chef Menteur Pass. The levee heights along Lake Pontchartrain for the high-level plan ranged between 16 and 18.5 feet as opposed to heights of 9.3 to 13.5 feet for the current plan.

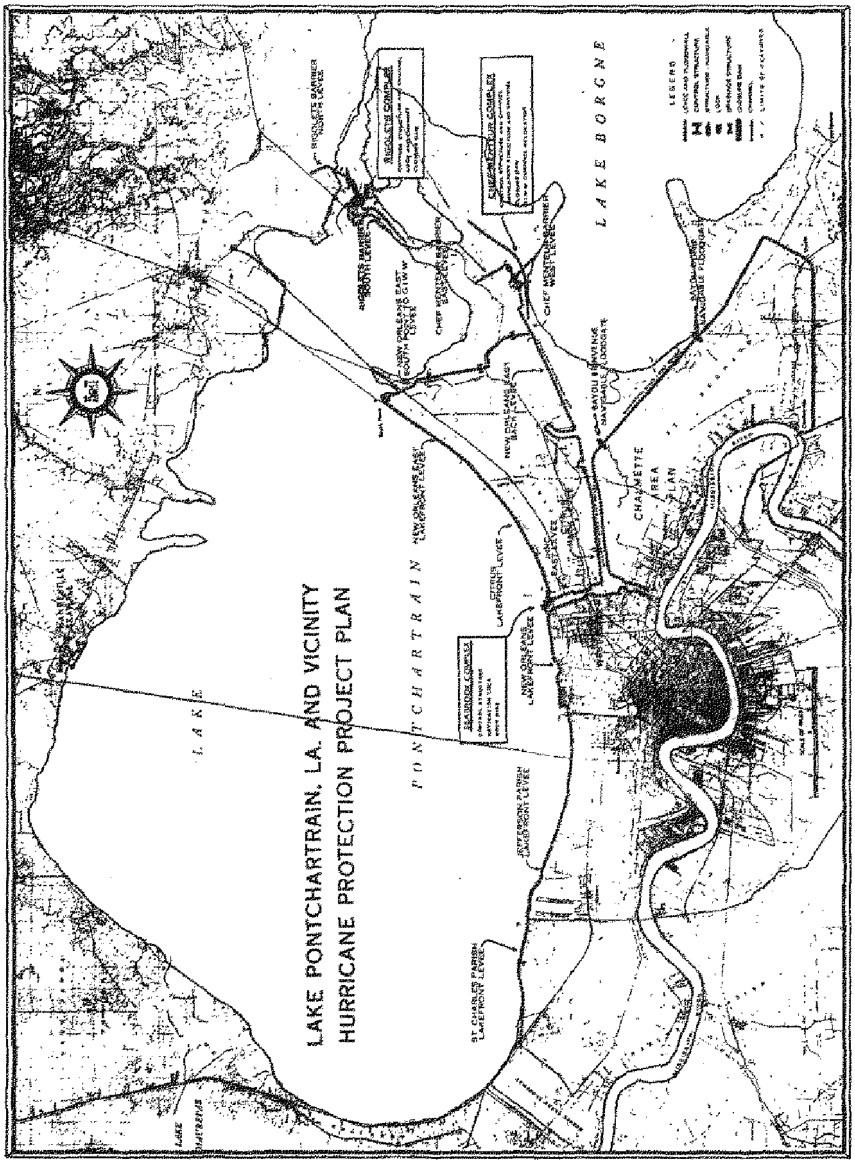
The cost for this high-level plan was estimated at 1-1/2 times that of the selected plan, and construction time was estimated to be longer due to the required levee heights. Considering these two conditions (higher cost and longer construction time), the Corps did not compute a benefit-to-cost ratio for the high-level plan. The high-level plan had other drawbacks including critical foundation problems for the levees which would require a high level of maintenance and rights-of-way that would be more expensive because of the broader levee base required.

While the project is federally authorized (Flood Control Act of 1965--79 Stat. 1073), it is truly a Federal, State, and local effort. The cost will be divided between the U.S. Government, which will provide 70 percent of the total cost, and State and local interests, which will provide the remaining 30 percent. Progress on the project depends on both congressional appropriations and the ability of the designated local assuring agencies to meet the required right-of-way and financial commitments.

In May 1967 the first congressional construction appropriation for the Lake Pontchartrain project enabled the Corps to award its first contract.

SCOPE OF STUDY

The data presented in this report is based on interviews with Corps officials at Corps headquarters and the New Orleans


LAKE PONTCHARTRAIN, LA. AND VICINITY
HURRICANE PROTECTION PROJECT PLAN
LAKE
PONTCHARTRAIN
LAKE BORGNE
CHALMETTE
AREA
PLAN

district office and review of records and documents these officials made available. Officials of each of the above organizational elements have reviewed this study, and their comments were considered in preparing this report.

CHAPTER 2

PROJECT COST EXPERIENCE

The Congress authorized the Lake Pontchartrain project in 1965. Since then, the estimated cost has more than quadrupled and additional cost growth is anticipated. Despite this cost growth, the project retains a favorable benefit-to-cost ratio because about two-thirds of the cost growth results from inflation that also increased the value of the benefits to be realized.

PROJECT BENEFITS

In the Corps of Engineers' initial studies, the benefits of protecting about 502,000 acres of developed and developable land including the New Orleans metropolitan area, from hurricane-induced flooding were valued at about $53.2 million a year. At the time of the estimates, 21 percent of the property to be protected was existing developments and 79 precent was for future developments. Except for the St. Charles Parish area, future developments were considered inevitable regardless of whether the projected was constructed or not.

In more recent studies the Corps has valued the annual benefit from the project at $189.2 million. However, in these more recent estimates two-thirds of the property to be protected is existing developments and one-third is for future developments.

As a result of the growth in the value of benefits, the project retains a highly favorable--about 13:1--benefit-to-cost ratio despite substantial cost growth. We did not, however, review the reasonableness of the ratio.

COST GROWTH

The estimated cost of the project at the time it was authorized by the Congress in 1965 was about $85 million at December 1961 price levels. The Corps' initial detailed construction cost estimate, prepared shortly after project authorization, increased the total estimated cost to $98 million ($66 million Federal share) and was based on October 1, 1965, price levels. The Corps' estimate to support its fiscal year 1976 budget request is $352 million (Federal share $242 million). The following table relates these three estimates.

Table 2-1
Lake Pontchartrain Project Cost Growth by Project Feature

Cost categories	Cost estimates: Pre-authorization FY 1965 (December 1961 price level)	Cost estimates: Initial construction post-authorization (FY 1966 price level)	Cost estimates: Current (FY 1976)	Cost growth: FY 1962 to FY 1976	Cost growth: FY 1966 to FY 1976	Expenditures through FY 1975: Federal	Expenditures through FY 1975: Local	Expenditures through FY 1975: Total
	(millions)							
Lands and damages	$ 4.9	$ 6.2	$ 17.5	$ 12.6	$ 11.3	$ -	$ 12.6	$12.6
Relocations	1.0	1.1	10.7	9.7	9.6	-	4.0	4.0
Locks	8.6	9.9	36.0	27.4	26.1	-	-	-
Roads	.3	.3	.1	(.2)	(.2)	-	-	-
Channels and canals	(a)	-	3.7	3.7	3.7	.8	-	.8
Breakwaters and seawalls	-	-	2.6	2.6	2.6	-	-	-
Levees and and floodwalls	48.8	56.2	186.3	137.5	130.1	41.0	b/7.9	48.9
Flood control and diversion structures	13.3	15.4	42.8	29.5	27.4	-	-	-
Pumping plant (added in 1975)	-	-	8.5	8.5	8.5	-	-	-
Engineering and design	3.2	3.7	26.8	23.6	23.1	12.2	-	12.2
Supervision and administration	4.7	5.2	17.0	12.3	11.8	3.7	-	3.7
Total	$84.8	c/$98.1	$352.0	$267.2	c/$253.9			c/$82.7
Federal share	$56.2	$65.8	$242.0	$185.8	$176.2	d/$57.7		
Local share	$28.6	$32.3	$110.0	$ 81.4	$ 77.7		$ 24.5	

a/Originals combined with locks and flood control and diversion structures.

b/Consists of $1.6 million in cash contributions from St. Bernard Parish and $6.3 million in "in kind" work from Orleans Parish.

c/Some mathematical computations differ slightly from the totals because of rounding.

d/Excludes $0.5 million in undelivered orders.

REASONS FOR COST GROWTH

Data supporting the Corps' estimates and the reasons for cost growth are shown in the following table.

Table 2-2

Lake Pontchartrain Project Cost Growth
Fiscal Years 1962-76

Reason for growth	Amount	Percent of total growth
	(millions)	
Economic growth	$183.6	68.7
Engineering changes	54.5	20.4
Quantity changes	18.5	6.9
Contingency increases	5.5	2.1
Other (support, estimating, etc.)	5.1	1.9
Total	$267.2	100.0

Economic growth (inflation)

The Corps updates the cost estimate annually to reflect price increases, design changes or additions, and receipt or development of better estimating data; however, future price increase projections and estimates of other cost growth factors are not included. For example, the cost estimate presented for fiscal year 1976 appropriation hearings does not include cost growth beyond July 1, 1974. This complies with the established policy of the Office of Management and Budget that generally prevents allowances for future price increases in budget estimates presented to the Congress. The Corps estimated the amount of cost growth attributable to price increase primarily by applying historical indexes to the uncommitted portions of the project cost estimate. The Corps generally used a 12-percent price increase factor in preparing the preliminary cost estimate for fiscal year 1976 hearings. The 12-percent factor was based on the Engineering News Record construction cost index for 20 major cities. This category also includes increased salaries of Government employees.

Engineering cnanges

Engineering changes, such as changes in dimensions or location of some feature, increased the cost by about $54 million. Examples of such increases include:

--$22 million for increasing the size of the levees based on better definition of the standard project hurricane as furnished by the United States Weather Bureau.

--$6 million for adding the Florida Avenue pumping plant.

--$3 million for the redesigned Seabrook complex.

--$12 million in the Corps' engineering design supervision and administration costs associated with all changes plus some salary increases.

Quantity changes

Examples of quantity changes that expanded the scope of the project include:

--$13 million increase for extending the Chalmette area of the project. This change, requested by local groups, extended the levees in the Chalmette area from Bayou Dupre southward along the Mississippi River-Gulf Outlet to Verret, Louisiana, then westward to Caernarvon, Louisiana, on the Mississippi River. The original levee section westward along Bayou Dupre from the Mississippi River-Gulf Outlet to the Mississippi River and a levee included in another Corps project were deleted. This change added about 18,800 acres to the area protected.

--$5 million increase to relocate the Chef Menteur Pass complex. This relocation, from the north side of Highway 90 to the south side, required revising the levees and relocating the Gulf Intracoastal Waterway channel. As a result, the project will now provide protection to an additional 1,533 acres of newly developed residential property.

Contingency increases

The contingency allowance for the project was increased from 15 percent to 20 percent.

PERCENTAGE OF PROJECT COMPLETION

Project completion status is measured by comparing costs incurred to total estimated project costs. (See table 2-3.) It does not necessarily represent the amount of work completed.

Table 2-3

Percent of Project Completion
Based On the Cost Incurred and Estimated Total Project Cost

End of fiscal year	Cummulative cost incurred (note a)	Estimated total project cost	Percent of completion
	(millions)		
1966	$ 1.2	$ 99.1	1.2
1967	2.4	136.2	1.7
1968	9.8	166.0	5.9
1969	14.3	182.0	7.9
1970	26.9	216.0	12.4
1971	42.3	255.0	16.6
1972	54.4	282.0	19.3
1973	64.3	296.0	21.7
1974	72.7	327.0	22.2
1975	82.2	352.0	23.4

a/Excludes undelivered orders.

POTENTIAL AND PROBABLE ADDITIONAL COST GROWTH

The following two circumstances will probably cause additional cost growth.

Additional protection needed
in the Orleans Parish Outfall Canals

The Corps told us that an additional major feature, which could cost as much as $60 million, will be necessary and will have to be authorized by the Congress if the project is to be completely effective against a project hurricane.

This feature, which includes the Orleans Parish Outfall Canal, became a recognized necessity when the levee heights had to be revised following Hurricane Betsy. As a result, the pumps that now pump water from the basin area over the levees would not be able to handle the hurricane-induced floodwaters over these elevated levees with 100 percent effectiveness. Options being considered include (1) installing new pumping stations near the lakefront levee and (2) continuing with the present pumping stations which are remote from the levees and raise the outfall canal's embankments from each pumping station to the lakefront levee. A decision has not been made as to which of the alternatives will be selected but preliminary estimates reveal the cost will be from $17 to $60 million.

Local cost share

The act authorizing the project did not specify a cost sharing ratio between Federal and local jurisdictions. However, House document 231 which preceded passage of the act specified that the local share would be 30 percent of the cost including value of land, relocations, easements, and rights-of-way. This 30 percent is exclusive of one-half the cost of the Seabrook Lock which was allocated to a navigation project with all cost to be borne by the Federal Government.

The 30-percent cost sharing plan required local jurisdictions to pay their share either in one lump sum before construction begins or, at a minimum, submit annual payments equal to their share of the cost of work performed each year. In-kind work may be substituted for cash if the work is accomplished in accordance with approved construction schedules. Local groups in the Lake Pontchartrain project area believed that meeting this payment plan would cause extreme hardships. As a result, legislation applying only to this project was enacted permitting deferral of additional local payments until fiscal year 1977. From fiscal years 1977 to 1990, local jurisdictions will be required to pay annually a minimum of one twenty-fifth of their unpaid share plus interest and in 1991 make the necessary payment to complete their 30-percent share of the project cost.

The Corps, in September 1975, prepared a schedule showing the estimated minimum payments required under this legislation. Minimum local payments required during 1977 through 1990 total $.5 to $3 million per year including interest. However, the 1991 "balloon payment" will amount to about $41 million.

CONCLUSION

It is questionable whether local jurisdictions will ever pay their 30-percent share. This conclusion is based on:

--The author of the legislation permitting the deferred payment plan has pledged to seek legislation to completely eliminate local responsibility for any share of the project costs.

--The 1991 balloon payment may strain the financial ability of local jurisdictions. For example, the estimated 1991 payment of $41 million will be at least four times greater than the largest contribution required to date of $10,199,400 1/ in fiscal year 1970. This analysis assumes no additional cost growth or inflation.

If the 30-percent payment by local groups is eliminated or if the local jurisdictions are unable to make their 1991 payment, it could increase the Federal contribution by $85 and $41 million, respectively, based on the current $352 million estimate.

1/Non-Federal expenditures are subject to change until approved by the Corps.

CHAPTER 3

PROJECT SCHEDULE EXPERIENCE

The scheduled completion date for the Lake Pontchartrain project has been delayed from 1978 to 1991 or almost 13 years. The major causes for the delay appear to be outside the Corps of Engineers' control. However, some of the delay has resulted from Corps actions. We believe that the schedule for project completion is optimistic and a completion date after 1993 is more probable.

COMPLETION SCHEDULES

Neither the authorizing legislation in October 1965 nor House document 231 preceding the legislation contained completion estimates for the project. The Corps, in late 1965, prepared completion schedules that showed a project completion date of 1978. This date was maintained and reported to the Congress until 1971, when it was changed to December 1981. The Corps' estimates now show a completion date of 1991.

Table 3-1 shows the Corps' completion estimates at various points in time. The 13-year delay (1978 to 1991) to complete the entire project does not include the St. Charles Parish Lakefront levee nor the Mandeville unit. Both of these units have been deferred indefinitely.

REASONS FOR SCHEDULE CHANGES

According to the Corps, major reasons for delays are:

--Increased construction time for floodwalls, levees, and roads as a result of foundation problems discovered after project initiation. Levees, for example, are constructed in several phases or lifts. During each phase, levee material is embanked and then allowed to settle and consolidate before the next lift is added. The Corps had initially planned to allow an average of about 1 year between lifts for settling and consolidation. However, experience has since shown that an average of about 3-1/3 years between lifts is desirable. A portion of this delay is attributable to revisions in standard project hurricane data which resulted in higher levees. This change caused foundation problems.

--Delays in obtaining rights-of-way for construction of project features as scheduled by the Corps. Rights-of-way are to be provided by local interest. However, these groups have not always agreed with the Corps' construction priorities and plans and have refused to provide the specific rights-of-way requested by the Corps. For example, the Corps requested rights-of-way for the Chef Mentuer complex from Orleans Levee District in April 1971. Levee District officials expressed belief that other portions of the project should have higher priority and offered rights-of-way other than that requested by the Corps. As of November 30, 1975, the requested rights-of-way had not been received.

The Corps has little control over these delays. However, other delays have been under the Corps' control. Among these are delays associated with completion of designs, plans, and specifications.

For example, the plans and specifications for 73 separate project components had 235 schedule changes as of July 1975. At that time, only 27 of the 73 sets of plans and specifications had been completed, indicating that further schedule delays are possible.

Funding not a factor in delays

This project has consistently ranked as first priority within the New Orleans District. Corps officials have informed us that funding has not been a problem. To the contrary, the Corps has not been able to use all moneys allocated. The Corps has been unable to obligate all funds allocated; for example, in several years, 1969, 1970, and 1973, the Corps had unobligated carryovers. The largest was the fiscal year 1973 unobligated carryover of $8.7 million. This large carryover resulted in only $6.4 million being allocated to the project in 1974. (See app. I.)

These examples indicate that funding constraints have not been the major factor in restricting project completion. The major reason for delays appears to be schedule changes.

Table 3-1

Estimated Completion Dates
at Various Points in Time for
the Lake Pontchartrain Project

Project segment	Period covered by estimate							
	1965	FY 1968	FY 1971	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976
Entire project	3/78	6/78	12/78	12/81	12/81	9/82	12/90	3/91
Locks	12/72	(a)	6/75	6/75	9/76	3/78	6/78	9/80
Roads	6/74	(a)	6/74	6/74	6/77	12/81	12/90	3/91
Channels and canals	10/74	(a)	6/77	6/77	6/77	6/78	12/78	6/80
Breakwaters and seawalls	(b)	(b)	(b)	(b)	(b)	3/78	6/78	9/80
Levees and floodwalls:								
Barrier unit	3/78	(a)	(c)	(c)	12/81	12/81	12/90	3/91
New Orleans East unit	11/77	(a)	6/78	12/81	12/81	6/82	3/83	3/83
New Orleans West unit	9/76	(a)	6/78	6/78	12/81	3/82	(d)	(d)
Mandeville unit	(c)	(a)	6/78	6/78	6/75	6/76	6/76	(e)
Chalmette unit	12/77	(a)	6/78	6/78	6/78	9/82	12/85	6/86
Flood control and diversion structures	6/74	(a)	6/76	6/76	6/76	6/78	12/79	6/80
Pumping plant	(f)	(f)	(f)	(f)	(f)	(f)	(f)	6/81
Permanent operating equipment	(b)	(b)	(b)	(b)	(b)	3/78	6/78	9/80

a/According to the FY 1968 estimate, these segments were to be completed after 1971.

b/Not estimated until FY 1974.

c/Not shown.

d/The St. Charles Parish levee portion of this unit has been deferred. However, the foreshore protection for the Jefferson Parish portion will be completed.

e/Deferred indefinitely.

f/Not included until FY 1976.

ANALYSIS OF CHANGES AND
ESTIMATE OF COMPLETION

For scheduling project work the Corps uses a Gantt Chart which is essentially a bar chart indicating progress of the work by task, expressed in units of time. It is a generally accepted means of planning and controlling a project; however, it does not determine the critical path nor does it clearly define relationships among the planned activities.

We used the critical path method in evaluating the Corps' completion schedules. This method describes a project in terms of the estimated time to complete each required activity and the relationships between activities. For any given activity, the method identifies the estimated time to perform the activity, what activity must immediately precede the given activity, which operations can be performed simultaneously with the given activity, and which operations cannot be started until the given activity is completed. From these estimates and relationships, it is possible to determine the critical path--that series of activities where any delay will jeopardize attaining the projected completion date.

Our analysis showed that to meet the March 1978 completion date the general design memo for the Barrier Unit (Rigolets and Chef Menteur complexes) had to be started by March 1966, or within 5 months after project authorization. This work was not started on time. Because the general design memo for the Barrier Unit was on the critical path as early as March 1966, the March 1978 completion date was no longer valid. However, the Corps did not officially revise this completion date until January 1, 1971.

We also made an analysis using the critical path method which combined actual completions through October 1975 and the Corps' best estimates of the time to complete the unperformed portions of the project (excluding the elements of the project that are indefinitely deferred). Our analysis showed that a completion date of April 1992, rather than the Corps estimate of March 1991, was possible provided no further delays were encountered. The critical factor in meeting the April 1992 completion date is the completion of the levees for the Chef Menteur complex. This completion date assumed that the right-of-way would be obtained in November 1975 and construction would begin in January 1976. Since the Chef Menteur levees are on the critical path, each delay in obtaining the right-of-way will delay project completion by the same amount.

The Corps is anticipating that local interest will provide the right-of-way for the Chef Menteur levee in the latter part of fiscal year 1976. Assuming this right-of-way is granted as planned, the project's completion date will be delayed 6 months to at least November 1992, with a completion date of 1993 much more likely.

CONCLUSION AND AGENCY COMMENTS

Statistics for this project--first in priority in the New Orleans District--showing unobligated yearend funds indicate that schedule delay, and not funding constraint has been the major factor in restricting project completion. Many delays, such as obtaining rights-of-way, are beyond the control of the Corps. However, our critical path method analysis showed that the Corps' scheduling system was not designed to evaluate the implications on the overall construction schedule of individual construction delays. We believe that such a scheduling system would be advantageous particularly for such a large and highly beneficial project.

In a letter dated May 14, 1976, the Assistant Secretary of the Army for Civil Works stated that while the Corps believes that its present method of scheduling work has not been the cause of extensions in project completion dates, the Corps plans to review this aspect for possible improvement.

RECOMMENDATION TO THE SECRETARY OF THE ARMY

We recommend that the Secretary have the Corps develop a scheduling system that will identify the critical construction features. Its use would aid in completing the project in a timely manner and thereby minimize costs associated with schedule delays.

CHAPTER 4

PROJECT CHANGES INCLUDING BENEFITS

The project as authorized by Congress in 1965 has had changes in scope. The original configuration (structural dimensions, size of levees, and areas protected) has been changed by expansions and engineering revisions. Even so, the purpose of the project has not changed and the degree of protection afforded, if completed as originally planned, will be essentially unchanged.

Several of the project's key features are being seriously challenged by environmentalists and local groups. If these features are eliminated, a reduction in the degree of protection provided under the present plan will result.

BENEFITS REALIZED TO DATE

Though the project is far from completion, the Corps of Engineers estimates that significant benefits have already been realized. For example, an estimated $91 million in damages were prevented during Hurricane Camille in 1969. The levee and floodwall work along the Inner Harbor Navigation Canal prevented damages similar to those caused in 1965 by Hurricane Betsy which pushed waters over the canal banks and flooded the surrounding community.

In addition to preventing damages, Corps officials stated other benefits have been realized in the prevention of loss of life during Camille, reduced cost of flood insurance, and additional employment opportunities associated with project construction.

CHANGES AFFECTING THE DEGREE OF PROTECTION

There are several changes which could reduce the degree of protection afforded. The deferral of the Mandeville Seawall and the St. Charles Parish levees and the possible elimination of the Rigolets and Chef Menteur control structures are a result of serious opposition from environmentalists and local interests. A discussion of each of these subjects follows.

Mandeville Seawall and St. Charles Parish levees

Both the Mandeville Seawall and the St. Charles Parish levees have been indefinitely deferred because of citizen actions. The proposal for repairing the Mandeville Seawall, about 1 mile in length, was not suitable to the local residents. The local residents want the entire seawall replaced, but the Corps says complete replacement cannot be justified.

The St. Charles Parish levees are also opposed by environmentalists. The construction of the levees would result in the loss of wildlife habitat and recreational hunting and implies a large and permanent loss in natural productivity of the estuarine complex associated with Lake Pontchartrain.

Another obstacle was created by the State of Louisiana. The State has included two St. Charles Parish bayous in the Natural and Scenic Rivers System of Louisiana. Any alteration of these bayous which are in the project area would contravene State law.

The justification (benefit) for this feature was almost exclusively land enhancement, which would convert about 25,000 acres of open aquatic marsh to urbanization for long-term human occupation. The Corps is considering an alternative levee alinement for the St. Charles area.

Elimination of Rigolets and Chef Menteur control systems

Over the past several years there has been serious concern in the Corps that the control complexes of Rigolets and Chef Menteur would not be built. Certain local factions have adamantly opposed these structures by refusing rights-of-way for the Rigolets embankments. The elimination of these structures would cause a serious reduction in the protection afforded by the project as currently designed. Should construction of these complexes be stopped, the primary purposes of the project could not be accomplished without redesigning the levees. That is, without the barriers, hurricane-induced surges and waves would enter Lake Pontchartrain unimpeded and threaten inhabitated areas around Lake Pontchartrain. General support of all local groups has not been obtained.

The only alternative to providing the same protection without completing these complexes is the so-called high-level plan. The Corps reevaluated this plan in 1973 when

strong opposition arose against the Rigolets and Chef Menteur complexes. They found that the high-level plan would cost about $100 million more than the total first cost estimate for the accepted plan.

OBSERVATION

Generally, while the avoidance or mitigation of potential adverse environmental effects can result in greater benefits than those lost by project changes, the threat of litigation by environmental groups affect the Lake Pontchartrain project in two ways. First, the litigation has delayed the timely completion of the project. Second, there is the possibility that the control structures of Rigolets and Chef Menteur will not be built which will allow hurricane-induced surges to enter Lake Ponchartrain and spill over the levees as currently designed.

APPENDIX I APPENDIX I

10-YEAR BUDGET HISTORY

THE LAKE PONTCHARTRAIN PROJECT

Fiscal year	Estimated capacity to spend	Office Chief Engineer recommendation	Office Management and Budget request	House/Senate conference authorized	Allocated	Unobligated at yearend
	(million)					
1966	$ 0.450	$ -	$ -	$ 0.450	a/$ 0.538	$0.010
1967	1.600	0.450	0.450	1.600	b/ 1.600	-
1968	4.500	4.450	3.260	4.500	c/ 4.086	-
1969	10.800	10.600	7.800	7.566	d/ 6.269	2.583
1970	8.500	9.500	6.000	8.500	e/ 5.260	4.581
1971	12.000	10.750	8.250	14.500	f/ 11.040	-
1972	11.000	15.000	5.555	7.755	g/ 13.946	-
1973	20.000	17.700	20.000	20.000	h/ 14.840	8.739
1974	8.650	6.400	6.400	6.400	i/ 2.660	-
1975	6.500	4.000	3.300	3.300	j/ (2.080)	-
Total funds thru FY 1975					$58.159	

a/Original allocation of $450,000 for preconstruction planning; Office of Chief Engineer provided an additional allotment of $88,000 to the project. The Corps did not request any funds in FY 1966 as their budget was prepared prior to project authorization. Subsequent to authorization, Congress provided funds equal to the Corps' estimated capacity to spend.

b/Includes initial construction funds in the allocation.

c/$500,000 deferred to FY 1969; an additional $86,000 was provided by a transfer from another project.

d/Reduction of $1,297,000 consisting of $1,206,000 applied to savings and slippages; $86,000 allocated to another project; and $5,000 transferred to the Mississippi River Gulf Outlet as of June 30, 1969.

e/Reduction of $3,240,000 consisting of $2,790,000 placed in budgetary reserve to be allocated in FY 1971 and $450,000 applied to savings and slippages.

f/Reduction of $3,460,000 consisting of $460,000 applied to savings and slippages and $3,000,000 placed in budgetary reserve to be allocated in FY 1972.

g/Increase of $6,191,000 composed of a supplemental allocation of $3,245,000; $3,000,000 budgetary reserve from FY 1971 funds, and a reduction of $54,000 for personnel saving based on the President's Economic Program.

h/Reduction of $2,660,000 placed in budgetary reserve to be allocated in FY 1974 and reduction of $2.5 million for savings and slippages.

i/Increase of $2,660,000 from budgetary reserve established in FY 1973 and a reduction of $6,400,000 applied to savings and slippages.

j/Decrease of $5,380,000 consisting of $3,200,000 revoked by Office of Chief Engineer; $1,180,000 transferred to other projects and $1,000,000 applied to savings and slippages.

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, D.C. 20310

14 MAY 1976

Mr. Henry Eschwege
Director, Resources and Economic
Development Division
General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

The Secretary of Defense has asked us to respond to your draft report of March 1976 on the Lake Pontchartrain, Louisiana Hurricane Protection Project (OSD Case 4318).

The issues you have considered are both substantial and significant. The report is essentially accurate and clearly reflects the managerial complexity involved in a project of this magnitude. Resolution of issues you have raised about the project are contingent upon future actions by a number of public, private, and governmental groups, with the possible exception of the Orleans Parish Outfall Canal. The Corps of Engineers is reexamining the Outfall Canal in terms of the existing authority that the Corps may have and, also, the best means of providing needed interior drainage.

With regard to the suggestion to develop a CPM type of scheduling system, the Corps does not believe that its present method of scheduling work has been the cause of extensions in project completion dates. However, this aspect will be reviewed for possible improvement.

Thank you for the opportunity to review the draft.

Sincerely,

Victor V. Veysey
Assistant Secretary of the Army
(Civil Works)

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

PRINCIPAL MANAGEMENT OFFICIALS

RESPONSIBLE FOR THE ACTIVITIES

DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
DEPARTMENT OF DEFENSE		
SECRETARY OF DEFENSE:		
Donald H. Rumsfeld	Nov. 1975	Present
James Schlesinger	June 1973	Nov. 1975
William P. Clements, Jr. (acting)	May 1973	June 1973
Elliot L. Richardson	Jan. 1973	April 1973
Melvin Laird	Jan. 1969	Jan. 1973
Clark M. Clifford	March 1968	Jan. 1969
Robert S. McNamara	Jan. 1961	Feb. 1968
DEPARTMENT OF THE ARMY		
SECRETARY OF THE ARMY:		
Martin R. Hoffmann	Aug. 1975	Present
Howard H. Calloway	May 1973	July 1975
Robert F. Froehlke	July 1971	May 1973
Stanley R. Resor	July 1965	June 1971
CHIEF OF ENGINEERS:		
Lt. Gen. J. W. Morris	July 1976	Present
Lt. Gen. William C. Gribble, Jr.	Aug. 1973	June 1976
Lt. Gen. Frederick J. Clarke	Aug. 1969	July 1973
Lt. Gen. William F. Cassidy	July 1965	Aug. 1969

GAO
Accountability · Integrity · Reliability
Highlights

Highlights of GAO-05-1050T, a testimony before the Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives

Why GAO Did This Study

The greatest natural threat posed to the New Orleans area is from hurricane-induced storm surges, waves, and rainfalls. A hurricane surge that can inundate coastal lowlands is the most destructive characteristic of hurricanes and accounts for most of the lives lost from hurricanes. Hurricane surge heights along the Gulf and Atlantic coasts can exceed 20 feet. The effects of Hurricane Katrina flooded a large part of New Orleans and breeched the levees that are part of the U.S. Army Corps of Engineers (Corps) Lake Pontchartrain, and Vicinity, Louisiana Hurricane Protection Project. This project, first authorized in 1965, was designed to protect the lowlands in the Lake Pontchartrain tidal basin from flooding by hurricane-induced sea surges and rainfall.
GAO was asked to provide information on (1) the purpose and history of the Lake Pontchartrain, and Vicinity, Louisiana Hurricane Protection Project and (2) funding of the project.

GAO is not making any recommendations in this testimony.

www.gao.gov/cgi-bin/getrpt?GAO-5-1050T

To view the full product, including the scope and methodology, click on the link above. For more information, contact Anu Mittal at (202) 512-3841 or mittala@gao.gov.

September 2005

ARMY CORPS OF ENGINEERS

Lake Pontchartrain and Vicinity Hurricane Protection Project

What GAO Found

Congress first authorized the Lake Pontchartrain and Vicinity, Louisiana Hurricane Protection Project in the Flood Control Act of 1965. The project was to construct a series of control structures, concrete floodwalls, and levees to provide hurricane protection to areas around Lake Pontchartrain. The project, when designed, was expected to take about 13 years to complete and cost about $85 million. Although federally authorized, it was a joint federal, state, and local effort.

The original project designs were developed based on the equivalent of what is now called a fast-moving Category 3 hurricane that might strike the coastal Louisiana region once in 200-300 years. As GAO reported in 1976 and 1982, since the beginning of the project, the Corps has encountered project delays and cost increases due to design changes caused by technical issues, environmental concerns, legal challenges, and local opposition to portions of the project. As a result, in 1982, project costs had grown to $757 million and the expected completion date had slipped to 2008. None of the changes made to the project, however, are believed to have had any role in the levee breaches recently experienced as the alternative design selected was expected to provide the same level of protection. In fact, Corps officials believe that flooding would have been worse if the original proposed design had been built. When Hurricane Katrina struck, the project, including about 125 miles of levees, was estimated to be from 60-90 percent complete in different areas with an estimated completion date for the whole project of 2015. The floodwalls along the drainage canals that were breached were complete when the hurricane hit.

The current estimated cost of construction for the completed project is $738 million with the federal share being $528 million and the local share $210 million. Federal allocations for the project were $458 million as of the enactment of the fiscal year 2005 federal appropriation. This represents 87 percent of the federal government's responsibility of $528 million with about $70 million remaining to complete the project. Over the last 10 fiscal years (1996-2005), federal appropriations have totaled about $128.6 million and Corps reprogramming actions resulted in another $13 million being made available to the project. During that time, appropriations have generally declined from about $15-20 million annually in the earlier years to about $5-7 million in the last three fiscal years. While this may not be unusual given the state of completion of the project, the Corps' project fact sheet from May 2005 noted that the President's budget request for fiscal years 2005 and 2006, and the appropriated amount for fiscal year 2005 were insufficient to fund new construction contracts. The Corps had also stated that it could spend $20 million in fiscal year 2006 on the project if the funds were available. The Corps noted that several levees had settled and needed to be raised to provide the level of protection intended by the design.