

**Failing to Protect and Defend:
the Federal Emergency Response to Hurricane Katrina**

**A staff report by the Democratic Staff of
the House Committee on Science
October 20, 2005
Version 1.0a**

Executive Summary

Hurricane Katrina revealed that, despite billions of dollars in emergency response preparation and a complete overhaul of the Federal domestic security system embodied in the Department of Homeland Security, Americans are probably less secure today from the ravages of nature than they were before 9/11. This report attempts to shed light on the failure of the Federal emergency response system to effectively act to save lives and protect property.

The disastrous Federal response to Hurricane Katrina was due neither to a failure of foresight nor to a failure of intelligence. Scientists had projected for some time that a major hurricane would probably flood New Orleans. This information had moved effectively to the emergency response community and efforts were launched to create plans specific to the needs of New Orleans in a hurricane. New Orleans posed special problems because of its physical location 8 feet below sea level (on average) and a population that was poorer than most cities and less mobile since 20% were estimated not to have an automobile. Hurricane evacuation plans in America assume a population that can pack their vehicles and head away from the water on very short notice. That model would not work in New Orleans.

As to intelligence: the National Weather Service specifically predicted the storm track for Hurricane Katrina 55 hours before landfall to within 18 miles of its actual strike point and was projecting a major hurricane for two entire days. That time was crucial for State and local governments to organize their evacuations (which were successful by American standards) and for the Federal Government to pre-position the resources necessary to follow the storm into New Orleans and launch a rescue and evacuation effort that was known to have to reach at least 100,000 people.

So if foresight and intelligence did what we asked of them, why was the Federal response so dismal? We suggest that the national response planning process that has been underway for over two years at the direction of the Department of Homeland Security is convoluted, officious and not well understood or fully deployed.

We also suggest that the leadership at the top of the Nation's emergency response system - FEMA director Michael Brown, Homeland Security Secretary Michael Chertoff, and President George Bush - failed to comprehend the message rooted in foresight and intelligence. There was confusion, miscommunication, and passivity throughout the emergency response leadership. All of the money we have spent on weather forecasting, all the effort and knowledge we have accumulated will be useless if the Nation's leaders lack the wisdom to simply pay attention while a storm bears down on an American city.

Only a handful of officials have the authority to mobilize the vast resources of the Federal Government to protect our people. If those who are responsible for securing America avert their gaze when our citizens most need help, how can any of us feel safe?

This work represents themes and issues that we would have presented to Members and allowed them to raise had the Committee held its hearing on Hurricane Prediction as originally scheduled for September 21. However, that hearing was cancelled at the direction of the Republican leadership in deference to a Select Committee that that leadership would prefer to have handle the work.

That Select Committee has no permanent staff, no permanent Members, and no necessary expertise to dig into the situation surrounding Katrina. The strength of the House Committee system is the accumulated expertise and institutional memory that resides in the Members and staff of our Committees. One deviates from that system at some risk and we believe we could do a better job with those issues that relate to our jurisdiction than can a fictive creation that will disappear as soon as it is politically convenient.

An example of the failures of the temporary committee's effectiveness was revealed in the questioning on September 22 of Max Mayfield, the head of the National Hurricane Center concerning Mr. Mayfield's story about briefing the President, Secretary Chertoff and Director Brown. Aside from one question, no effort was made by Republican Select Committee members to clarify what Mayfield may have said in the briefing that the President participated in. When the Science Committee finally held our hearing, on October 7, we were able to have Mr. Mayfield recreate that presentation with a clear bottom-line message coming from him that the government had to prepare for a Category 5 hurricane and that the hurricane was on a trajectory that threatened to flood New Orleans.

We close our report with questions that deserve pursuit in a serious investigation of the Katrina response. There will be many who accuse this staff of engaging in politics in this report. We live in a time when asking questions and seeking answers is dismissed too readily as partisanship. But politics can also guide what questions are not asked and what truths are not pursued. In a time when one political party controls two of the three branches of government, remaining silent is no less partisan, and perhaps more partisan, than voicing concerns.

Ultimately, we believe that the Nation is best served by an independent commission like the one that worked to uncover truths regarding 9/11. Such a body, with the credibility that non-partisan independence can bring, is best positioned to discover the roots of the Nation's failures in response to Hurricane Katrina, and offer guidance on how to correct those failings. An effort to fully understand how best to correct these problems should come before the Nation rushes to embrace the latest suggestion from the Administration: that the military be put in charge of national response to emergencies.

While we await the launch of this Commission, the expert work of Committees will continue. This is our effort to shed light on what happened.

1. Hurricane Katrina: What Went Right and What Went Wrong?

“In the three and a half years since September the 11th, 2001, we have taken unprecedented actions to protect Americans. We've created a new department of government to defend our homeland, focused the FBI on preventing terrorism, begun to reform our intelligence agencies, broken up terror cells across the country, expanded research on defenses against biological and chemical attack, improved border security, and trained more than a half-million first responders. Police and firefighters, air marshals, researchers, and so many others are working every day to make our homeland safer, and we thank them all.”

*President George W. Bush
State of the Union Address
February 2, 2005*

“Katrina exposed serious problems in our response capability at all levels of government. And to the extent that the federal government didn't fully do its job right, I take responsibility. **I want to know what went right and what went wrong.** I want to know how to better cooperate with state and local government, to be able to answer that very question that you asked: **Are we capable of dealing with a severe attack or another severe storm?** And that's a very important question. And it's in our national interest that we find out exactly what went on and - so that we can better respond.”

*President George W. Bush
September 13, 2005*

The United States has faced disasters since its founding. Until September 11, 2001, it had been almost two centuries since we had credible reason to fear the acts of foreign enemies on our soil. However, the nation has always suffered the ravages of nature: earthquakes, fires, flooding, severe storms are a part of the landscape of America.

No function of government is more fundamental than protecting citizens. No government can stop an earthquake or hurricane, but Americans expect their government will be positioned to help them when their lives are at risk. If government fails in this fundamental task, it is failing to meet its most basic function. Failing to act to save lives and protect property in a timely fashion represents a breach of faith with those who are governed - who pay the taxes and obey the laws and serve the nation in a thousand ways, small and large.

The National Weather Service has focused on providing early warning of major storms for more than a century. These warnings allow people to try to secure their property, and, more importantly, act to protect themselves and their families in the face of

imminent danger. The Federal Emergency Management Agency (FEMA) was established by President Carter to help communities prepare for and recover from severe storms. FEMA is charged with supporting local and State authorities when they are not overwhelmed, and expected to move proactively when local authorities lack adequate resources or information to act effectively.

FEMA is expected to step into the gap when our local and State authorities are crippled by a disaster. In dangerous weather conditions, the National Weather Service (NWS) and FEMA must work hand-in-glove to make sure that knowledge of an impending disaster can be mitigated by rapid action on the ground both before and after the storm hits. This system became more effective in the last few decades with more far-reaching communications capabilities, enhanced weather tracking instruments and predictive models, and very professional leadership at each agency.

This leadership has always been remarkable at the National Weather Service. At FEMA there has been a mixed record, but President Clinton appointed a trained emergency response manager to head FEMA and that Director, James Lee Witt, brought with him a focus on learning lessons from each event and constant improvement in services and response that resonated through all levels of government.

September 11 created a national push to prepare for disasters of all kinds. Agencies that had previously focused on weather forecasts or responding to natural disasters now had to think about their roles in new, perhaps inconceivable situations with releases of biological or chemical agents or “dirty” nuclear devices. Events in Washington and New York on September 11, 2001 brought new awareness of the need for robust and bulletproof communications systems for first responders and a demand for coherent evacuation plans to mobilize populations, perhaps millions of people, out of our major cities to other locations deemed safe.

The government’s response to any disaster can only be as good as the resources it has ready to bring to bear and the plans it has to mobilize resources appropriate to the situation. Hurricane Katrina provides the first comprehensive test of the Bush Administration’s capacity to deal with a disaster of national scope and the results of that first test are deeply troubling.

This report will start with how well the National Weather Service performed its job of tracking, predicting and communicating the risks associated with Hurricane Katrina. We give nothing away in terms of details by saying that everyone agrees that NWS did a phenomenal job on Katrina.

Then we will turn to briefly examine what was known about the impact of a hurricane of Katrina’s size in the scientific community and the emergency response community. This section culminates with the Hurricane Pam exercise of 2004. That simulation was run with FEMA funds and had participation by all relevant Federal, State and local

authorities. The exercise also anticipated all the basic conditions and events that Katrina brought into the world.

Following this we will try to sketch the emerging disaster planning system of the Bush Administration. This system has been heavily influenced by 9/11 and much of it seems aimed at how to respond to a terrorist attack rather than a natural disaster such as Hurricane Katrina. The staff sense of this system is that it is still largely a paper tiger. There is an impressive amount of documentation among the planning reports - more than 1000 pages - but it has not been tested (at least not prior to Katrina) and it seems removed from the real challenges on the ground of responding to a crisis. The experience of Katrina seems to validate these concerns. The staff's evaluation of these reports appears to be validated in the post-Katrina call by the military for a new National plan to coordinate search and rescue operations. Ostensibly that should have been a part of the four plans already launched by the Department of Homeland Security. The utter failure of those plans and the Department is contributing to an unprecedented call to put the military in charge of national response efforts.¹ Such a step seems premature before we even understand what went wrong in the Federal response.

Finally, we will take what was known and what was planned and pose the question of why FEMA, DHS and the White House performed the way they did. They knew what was coming from the Weather Service. They should have known what it implied for New Orleans based on science and their own simulation. What did they do with this knowledge? Did they ignore it? Did they pay attention, but too late to be effective? Did the leaders do everything right, but something in the chain of response failed the leaders? Did they act in line with their plans, but were ineffectual because of problems with those plans?

The reality is that the Committee on Science has limited jurisdiction in this case. We start with science, both the science of weather forecasting and the science of storm impact projections. We then move a step away from our jurisdiction when we ask how storm impact knowledge fit with emergency response plans. When we turn to the response plans of the Administration, we have stepped somewhat outside our obvious jurisdiction. However, NOAA plays an important role in Incidents of National Significance (as horrific events are labeled in the language of the Department of Homeland Security). We also appear to be outside our traditional jurisdiction when we make observations and raise questions about the actions of Director Brown, Secretary Chertoff and President Bush.² However, this is a situation where these key decision-makers were given hard scientific information about an impending national disaster and

1. "Military to Bush: U.S. Needs Search-Rescue Plan," Associated Press, September 25, 2005.

2. The head of FEMA is technically an Undersecretary for Emergency Preparedness and Response at the Department of Homeland Security. The term "Director" is something of a misnomer since FEMA was rolled into DHS. Nevertheless, the form of address has stuck and will be used in this report. If FEMA becomes an independent agency again, "Director" will again be the legally accurate title.

it is fair to ask, “What did they do about that forewarning?” If we spend billions on the National Weather Service to expand the prediction system (and we do spend that money, with the Committee acting to authorize that spending) what good will it do us if our leaders ignore the information?³

So our questions move from the black letter jurisdiction of the Committee to areas that only abut our jurisdiction, but it is all a part of a chain of evidence. Who knew what when, and what did they do about it? With Katrina, the story begins with the National Weather Service and stays with NWS right through the official declaration that the New Orleans levees had been breached.

The President has repeatedly said that he wants to know what went right and what went wrong in our response to Katrina. Let’s start with what obviously worked: the National Weather Service.

3. Staff do not address problems with state and local officials. It is likely that mistakes were made at other levels of government, but our expertise and legal influence lie with Federal programs and policies and that is where we put our energy.

2. A Thin Ray of Sunlight: The National Weather Service



Katrina Image from NOAA

The National Weather Service has been developing tools to track and predict major storms for decades. In the last fifteen years, the sophistication of satellite instrumentation, ship- and air-borne observation and sea buoys coupled with more powerful computers and more sophisticated understanding of weather processes has revolutionized weather prediction.⁴ Major storm systems, especially tropical storms coming up out of the South Atlantic and Caribbean, have received particular attention towards improving the capacity to predict their landfalls.

In the chain of emergency preparation and response, the Weather Service stands at the leading edge. The FBI, CIA and, now, Homeland Security and White House, all have roles to play in looking for clues that allow acts of terrorism to be predicted so that our leaders can take appropriate actions to keep us safe. The National Hurricane Center (NHC) and the National Weather Service perform a similar function when it comes to providing information about a different kind of threat: severe weather events.⁵

4. During the 1990s, the NWS spent approximately \$4 billion on the “Weather Service Modernization” initiative. “The United States has just completed a \$4 billion investment in satellites, radars, surface observing networks and information processing to modernize its ability to observe, forecast, and warn of hydrometeorological hazards. These constitute 85% of the Presidential Disaster Declarations and 67% of the damage suffered in the United States.” William Hooke, “U.S. Participation in International Decade for Natural Disaster Reduction,” *Natural Hazards Review*, February 2000, p. 4.

5. Obviously, the techniques and tools available to NWS/NHC and the intelligence services are very different, but both are providing a warning signal to the response community and in that way they perform a similar function.

Katrina was a particularly well tracked and accurately predicted storm. According to the National Hurricane Center (NHC), almost 2.5 days prior to landfall, the NHC was showing landfall at Buras, Louisiana, just east of New Orleans. Landfall came just eighteen miles east of that point. In the words of NHC Director Max Mayfield, it was “a superb forecast.”⁶ A very short timeline of relevant forecasts from the NHC includes⁷:

August 26

- 4:00 a.m. CDT Katrina reentered Gulf of Mexico after passing over Florida and returned to Category 1 strength.
- 10:30 a.m. CDT Became Category 2.
- 4:00 p.m. CDT NHC Advisory 14 strike model shows storm track tending towards Mississippi coast with New Orleans within error band.
- 10:00 p.m. CDT NHC Advisory 15 strike model shows storm track moving further west with the storm passing directly near or over New Orleans; the intensity projected was for a Category 4 or 5 hurricane. This came 56 hours prior to landfall. Every subsequent projection of track and intensity was consistent with this message.

August 27

- 4:00 a.m. CDT Became Category 3
- 10:00 p.m. CDT A Hurricane Warning is issued (the goal is to issue a warning 24 hours prior to landfall) for the North Central Gulf Coast. “Preparations to protect life and property should be rushed to completion.” Coastal storm surge flooding of 15-20 feet, with 25 feet in some locales, was being projected as well.

August 28

- 12:40 a.m. CDT Became Category 4
- 6:15 a.m. CDT Became Category 5
- 7:00 a.m. CDT NHC Advisory 22 described Katrina as a “potentially catastrophic” hurricane. Every advisory from this point forward used the term “potentially catastrophic” or “extremely dangerous.”
- 4:00 p.m. CDT NHC Advisory 24 “some levees in the Greater New Orleans area could be overtopped.”

6. Tamara Lush, “For Forecasting Chief, No Joy in Being Right,” *St. Petersburg Times*, August 30, 2004.

7. The officially produced NWS timeline is attached as Appendix 1.

August 29

- 2:00 a.m. CDT Became Category 4 hurricane
- 6:10 a.m. CDT Made landfall S.E. Louisiana as a Category 4

The job of tracking storms and predicting their strength and direction is only part of what the National Weather Service must do. They also carry the burden of communicating this information to the emergency response community and the public at large. The NHC is a key element of this communications function, but it is not the sole element. The local weather offices in areas on a storm's projected track also play a key role in communicating risk to their local emergency managers and public.

The NHC director, Max Mayfield, is authorized to launch the Hurricane Liaison Team (HLT). This is a joint NHC-FEMA effort that puts senior FEMA managers in the room with NHC staff as a storm emerges. During Katrina, the HLT held coordination calls each day with FEMA Headquarters, FEMA Region IV (Atlanta), FEMA Region VI (Denton) and the emergency officials for states in the likely path of Katrina (Florida, Alabama, Georgia, Mississippi, Louisiana and Texas). These calls were held at 11:00 a.m. CDT on the 26th-29th. Max Mayfield briefed those on the line for approximately 5 minutes in each instance regarding the storm's strength and track. The remainder of the calls would focus on emergency response preparations appropriate to the situation.⁸

During his briefing on the 27th, Mayfield reportedly said that, "This one is different. It's strong, but it's also much, much larger [than other Category 4 hurricanes in recent memory]." He also addressed the possibility of water surging over the levees in New Orleans.⁹

Mayfield also took the rare step of initiating personal calls to Governor Barbour (MS), Governor Blanco (LA), the Director for Emergency Services of Alabama Mr. Filter, and Mayor Nagin of New Orleans on Saturday evening. In testimony before the Senate on September 20, Mayfield indicated that he had only done something like this on one prior occasion so far as he could recall.¹⁰

NOAA is also charged with supplying weather information to other government agencies.¹¹ In response to hurricane Katrina, NOAA senior management convened an

8. Mayfield launched the Katrina HLT on the 24th of August. The characterization of Mayfield's briefing lasting 5 minutes came from his appearance before the Senate Subcommittee on Disaster Prevention and Prediction, Committee on Commerce, Science and Transportation, September 20, 2005.

9. *Washington Post*, September 11, 2005. Susan Glasser and Michael Grunwald, "The Steady Buildup to a City's Chaos."

10. Testimony before the Subcommittee on Disaster Prevention and Prediction, Senate Committee on Commerce, Science and Transportation, September 20, 2005. The prior storm that caused Mayfield to initiate a call was Hurricane Lily in 2002; he did not say who he called on that occasion.

11. While this responsibility is probably an old one, it certainly is enumerated among the agency's responsibilities in the National Response Plan, which will be discussed in Section 4 below.

Incident Coordination Center (ICC) which began meeting daily and issuing Incident Situation Reports (SITREP) for Hurricane Katrina beginning Wednesday, August 24, 2005, prior to Katrina's initial landfall in South Florida.

These daily incident reports are delivered to fulfill the NOAA ICC's responsibility to coordinate NOAA's information and activities with those of other parts of the Federal Government and to ensure coordinated delivery of NOAA services and products. These reports were also provided to Congressional staff.

The NOAA Homeland Security Operations Center (HSOC) is the link to the Department of Homeland Security and to the White House. The Saturday, August 27, Situation Report out of NOAA included the NHC's anticipation that Katrina could develop into a Category 5 storm. The August 27th Situation Report indicates the NOAA HSOC desk began providing spot reports (SPOTREP) and situation reports (SITREP) support directly to the White House. We do not now know who at the White House was receiving these reports.

This same Situation Report of August 27 included a notation indicating that **White House staff participated in the HLT conference call from Crawford, Texas**, and that they would be participating in future Katrina briefings.¹²

The August 28 Incident Situation Report indicates that Katrina has strengthened to a Category 5 hurricane. The Report also notes that White House staff, the President, and Secretary Chertoff participated in the August 28th HLT briefings. The situation report for August 28, 2005 states:

"The President participated in today's conference call and complimented Max and NOAA for their services. Secretary Chertoff participated in the conference call from the HSOC and asked the NOAA and FEMA desks a number of questions following the call. White House staff will participate are expected to participate in HLT conference calls for the remainder of the event."¹³

Press reports also indicate that FEMA Director Michael Brown participated in the HLT conference call on Sunday. The White House considered it an important enough part of the President's work day at Crawford, that they even issued a photo of the President receiving that briefing. On the screen in the shot is Max Mayfield addressing the conference call regarding Katrina. Over his shoulder is a satellite image of Katrina that

12. Incident Situation Report, Incident Coordination Center, Tropical Storm Katrina, Hurricane Situation Report 05-10, August 27, 2005.

13. Incident Situation Report, Incident Coordination Center, Tropical Storm Katrina, Hurricane Situation Report 05-11, August 28, 2005.

shows how well formed and sizeable a storm it was.¹⁴



President George W. Bush is handed a map by Deputy Chief of Staff Joe Hagin, center, during a video teleconference with federal and state emergency management organizations on Hurricane Katrina from his Crawford, Texas ranch on Sunday August 28, 2005. White House photo by Paul Morse. CAPTION FROM THE WHITE HOUSE WEB SITE.

At the time of the briefing with the President, Secretary Chertoff and Director Brown, Katrina was a Category 5 hurricane with sustained winds of 175 miles an hour and higher gusts. The storm was being described as “potentially catastrophic” in the NHC weather advisories. Hurricane force winds extended 105 miles from the eye of the storm and tropical force winds extended 205 miles from the eye. The minimum central pressure measured by storm tracking aircraft showed 907 millibars - among the lowest ever recorded and a further indication of the intensity of Katrina. In sum, our top emergency response officials participated in a briefing that described a storm that would mark only the fourth Category 5 hurricane to strike the United States since 1900 (after the 1935 Labor Day storm, Hurricane Camille and Hurricane Andrew).

Mayfield later described this Sunday briefing to a reporter with the New Orleans *Times-*

14. On September 14, 2005, Congressman Gordon sent a letter to the White House asking for a transcript of this briefing as well as questions about other White House staff who may have been working on Hurricane Katrina. No response has been received. The letter is included as Appendix 2.

Picayune. The reporter summarized Mayfield's comments as discussing, "the strength of the storm and the potential disaster it could bring were made clear during both the briefings and in formal advisories, which warned of a storm surge capable of overtopping levees in New Orleans and winds strong enough to blow out windows of high-rise buildings." The reporter continued, "He [Mayfield] said the briefings included information on expected wind speed, storm surge, rainfall and the potential for tornadoes to accompany the storm as it came ashore." Mayfield added that (and here the reporter indicates it is a direct quote from Mayfield), "We were briefing them way before landfall. It's not like this was a surprise. We had in the advisories that the levee could be topped. I keep looking back to see if there was anything else we could have done, and I just don't know what it would be."¹⁵

It is interesting to note that Mayfield was not asked a series of specific questions in his appearance before the Davis Select Committee in the House on September 22 regarding what he said in the August 28 briefing that included the President, the Secretary and Director. No one attempted to elicit clarification on what the President learned in his direct exposure to the principal Weather Service official working on Katrina. To the question he did receive from Chairman Davis, Mr. Mayfield indicated that he has no direct recollection of particular participants or exchanges in the August 28 video teleconference, though he did remember the President was a participant.¹⁶ No meaningful follow-up came from Members.

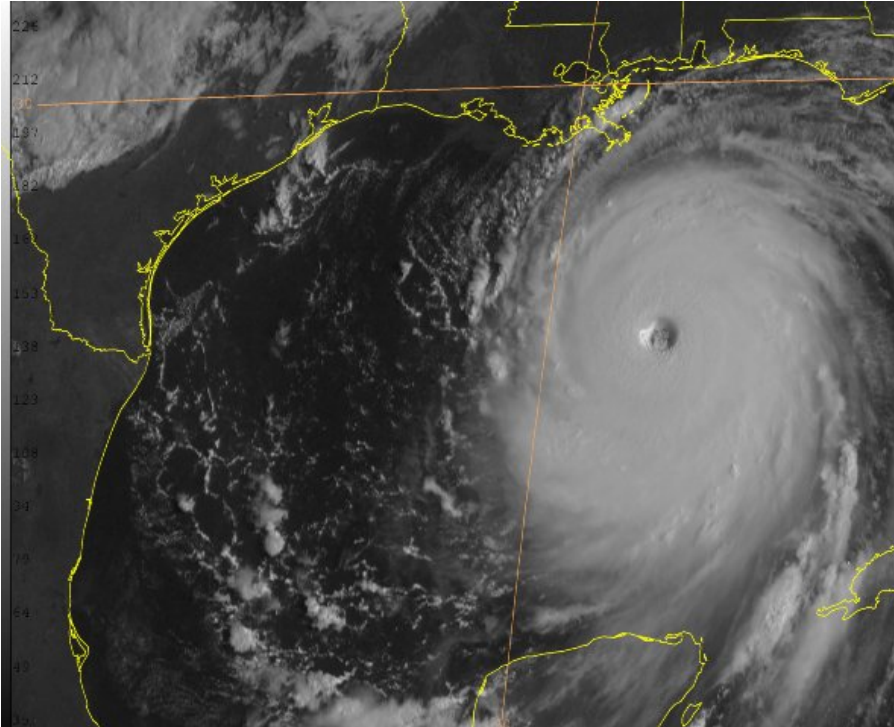
When Mr. Mayfield appeared before the House Science Committee on October 7, Representative Gordon asked him to provide to the Committee the kind of briefing he gave to the President in the FEMA/HLT video teleconference of August 28. Mr. Mayfield had been asked prior to the hearing to bring the exact briefing materials he had used that day. Using the same series of computer images and tables that illustrated the points he wanted to make, Mr. Mayfield briefed the Committee in the very same fashion he briefed the video teleconference participants. Mr. Mayfield's testimony is worth quoting at length:

"These are the briefing slides that I used on that Sunday, August the 28th briefing, you

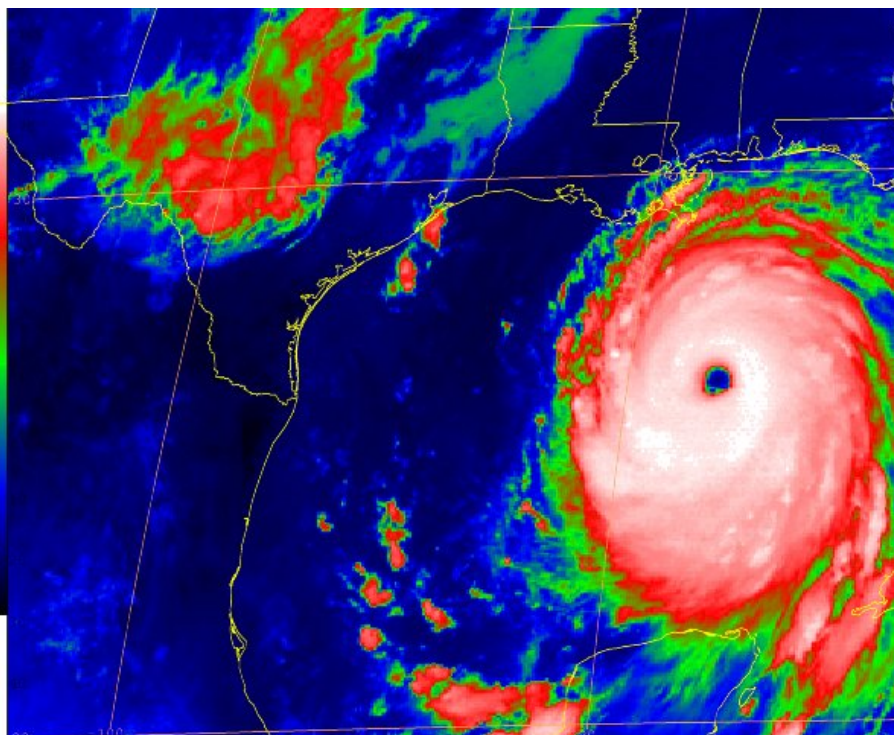
15. Mark Schleifstein, "FEMA Knew of Storm's Potential, Mayfield Says," *New Orleans Times-Picayune*, September 4, 2005. The first quote is of the reporter's summary of Mayfield's comments; the second quote are Mayfield's direct words used in the article. Tamara Lush, "For Forecasting Chief, No Joy in Being Right," *St. Petersburg Times*, August 30, 2005. This article mentions Mayfield noting Bush's participation in the video teleconference.

16. This section, and the entire treatment of Mr. Mayfield's prior testimony before the Senate and the House Select Committee, has been rewritten from version 1.0. Staff originally questioned whether it was reasonable for Mr. Mayfield to not have clear recollections of a briefing that involved the President. A subsequent conversation, combined with his testimony before the Science Committee, has convinced staff that the issue in prior Mayfield appearances had more to do with what he was asked and how it was asked. Staff regret the earlier language characterizing Mr. Mayfield's testimony and any complaints can be directed to the author of that section, Dan Pearson, of the Committee staff.

know, from the National Hurricane Center. And I do not have a transcript but I am pretty sure I will be very, very close and the briefing I would give today would be very close to the briefing I gave before, although probably a little condensed version here.

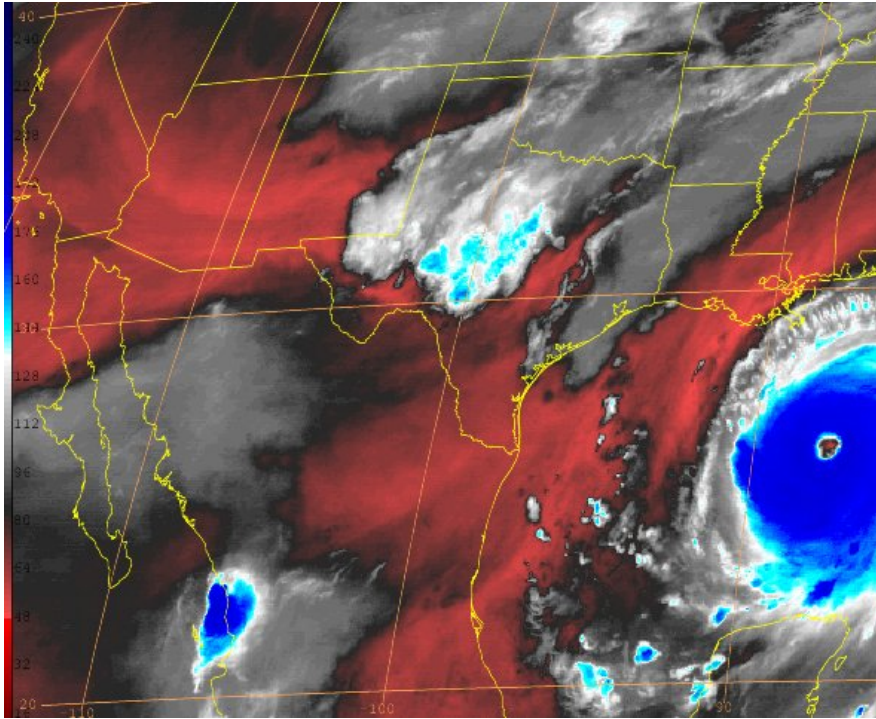


“That first slide, I showed just to demonstrate - or make sure they knew the size of the hurricane and not only is it well defined but it is not a small hurricane, it is a very, very large hurricane. The next slide, please.

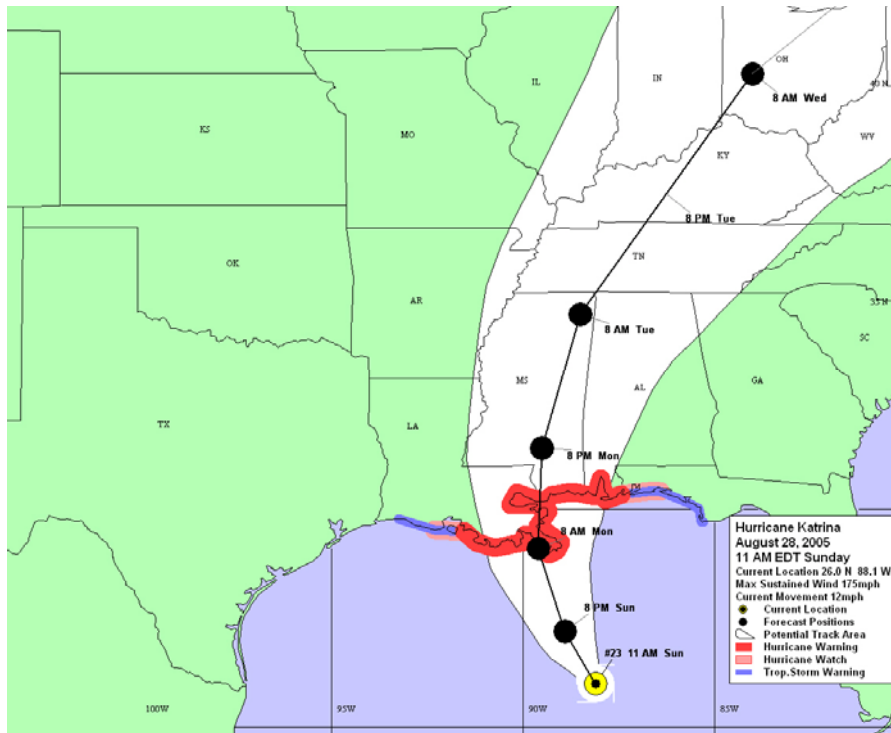


“That was a visible picture. This one is a infrared and very, very distinct eye. When you have that, you always have a powerful hurricane and, in fact, this was a Category 5 hurricane. And I said that not only is this a Category 5 hurricane like Andrew, but there is a big, big difference. And the difference is that it is a much larger hurricane than Andrew was.

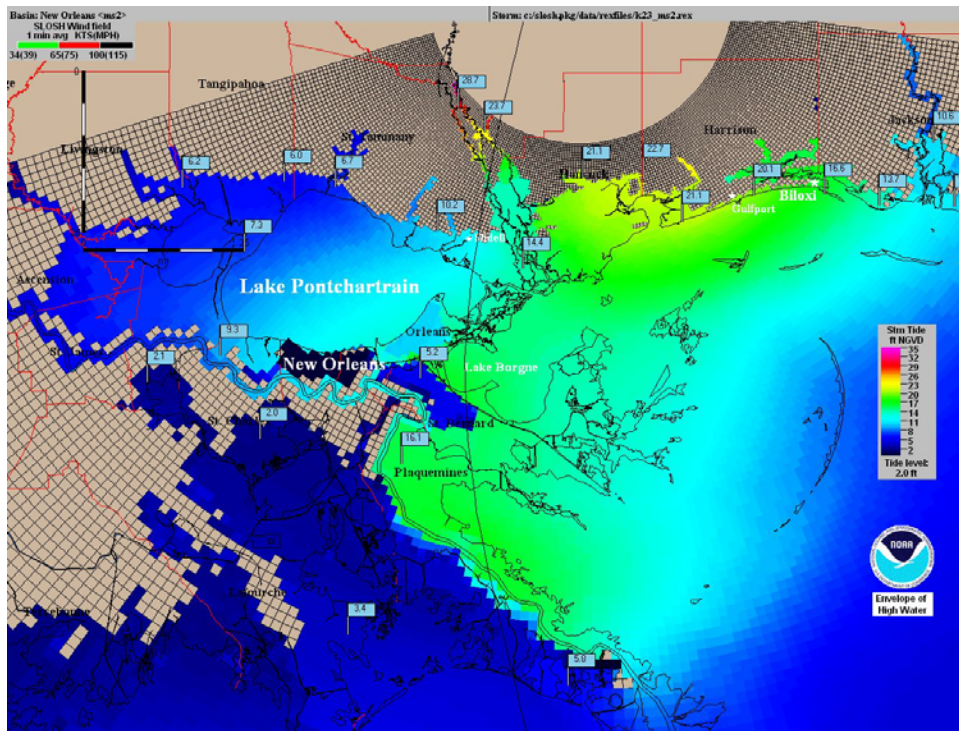
“And I also made a comparison to Hurricane Lily back in 2002 that struck Louisiana. Lily had been a Category 4 hurricane in the middle of the Gulf of Mexico. It weakened down to a Category 1 hurricane. There was a big difference. With Lily, we had a very, very small eye. We call it a pinhole eye. And when you have those small eyes like that, typically they just do not persist for very long. And I did say that given this more typical sized eye, we really do not expect significant weakening like Lily did. The wise thing to do here would be to prepare for a Category 5 hurricane.



“The next slide is a water vapor loop - and we were also showing animations of these, I might add, on the video teleconference. And I show this one just to talk about the future motion. There was a trough coming in from the west that was eventually going to turn this up more to the north and eventually northeast. And the computer models differed somewhat on when that turn will occur and it makes a big, big difference whether it happens, you know, right at landfall, or before landfall, or well inland there. And what I would have said was that no one can tell you exactly, you know, where Katrina’s going to make landfall but again I emphasized it was a large hurricane and wherever it made the actual landfall, it was going to impact a very large area.



“Then the next slide is - this is a Hurdivac slide and that is a software program actually developed by a former Weather Source employees, paid for by FEMA, after he retired and this is a really nice package here that you can animate this, you can do all types of displays here. And I would not have taken the time to - I mean they use this - we show this at every single briefing we give but for your information, that red area there that you see, the bright red from Morgan City, Louisiana over to the Florida/Alabama border, that was where the coastal hurricane warning was in place. We had tropical storm warnings and hurricane watches on either side of that. And then you can see the forecast track of the center of the hurricane and we always and General Johnson mentioned there, we do not like to poke attention to that skinny black line. We have that cone of uncertainty based on our previous 10-year forecast arrows showing where that center of the hurricane can be. And when I showed this, I said that this is not just a coastal event, the strong winds, the heavy rains, the tornados will spread well inland. But - and I am also sure that I said this, I want to make absolutely clear that the greatest potential for large loss of life is also from the storm surge. And that transitions over to the next slide.



“This is a storm surge simulation from the actual forecast that was available at that time. This went along with the 11:00 a.m. eastern daylight time advisory and this was for that noontime eastern daylight time Hurricane Liaison Team briefing. And I think you can see Lake Pontchartrain there and certainly the Mississippi coastline - much of the Louisiana coastline. The colored areas are areas that are indeed inundated from that specific forecast. Now again, we are doing this every six hours based on the most recent forecast but the point here is that those, the light greens and the yellows, there were all the storm surge valleys of over 20 feet. And I would have explained the circulation around the eye of the hurricane goes counterclockwise so that means that we would have northerly flow over Lake Pontchartrain. And I did say that no one can tell you with absolute confidence if the levies would be overtopped but it was obviously a very grave concern there. And I slow would have said that if the track had shifted a little bit to the west or to the left there, it would have been even worse than on our current forecast track there. I really do not want anyone to think that we could give a perfect forecast....¹⁷

So those are the exact slides that I shared on that Sunday briefing.”

While this testimony is not the same as a transcript of the briefing provided on Sunday, August 28th, it reveals the essence of the message that Mr. Mayfield delivered: that we

¹⁷. This extract is from an unedited Committee transcript. Staff has excised the last paragraph of Mr. Mayfield's testimony that involves a projection of storm surge possibilities in Mobile Bay.

should be preparing for a Category Five hurricane that was on a track that threatened to flood New Orleans. The imagery that accompanied Mr. Mayfield's presentation powerfully supported this message.

Mr. Mayfield's testimony to the Science Committee provides excellent insight into what he said during that briefing. Following Mr. Mayfield's briefing on the 28th, others also chimed in from the emergency preparedness and response world. Their testimony has yet to be gathered. It is likely that a transcript and even a tape of the videoconferences exists, probably in FEMA's possession, as well as a list of who logged into the call. This evidence would allow the Nation to know exactly what was said with the President, Secretary and Director on the line when it is likely that in electronic form in transcription we can find out specifically what was said by whom. We have attempted to get this material from both FEMA and the White House, but neither have responded to the Member requests.

In the days of Katrina's build-up in the Gulf, Mayfield was worried enough that he also made at least one other call (and potentially more). NOAA has not provided a comprehensive list of these calls to date, but we know from a press report that he called Walter Maestri, emergency director for Jefferson Parish, to warn him of the guidance that showed Katrina aimed right at New Orleans.¹⁸

The Weather Service has an efficient system for guaranteeing that local weather offices do so. An hour before new storm advisories are issued by the National Hurricane Center, the relevant local offices are contacted and briefed. Then those offices are tasked with making contact with their local officials to explain to them what the forthcoming advisory is going to show. Weather Service records show a steady stream of contacts between the offices in Slidell (New Orleans) and Mobile and emergency officials in Louisiana and Mississippi from Friday afternoon onward.

And of course both the NHC and the local weather offices offer press availabilities to stations in the storm's track. The NHC counted a total of 471 television and radio interviews through the media pool in Miami or via telephone for Hurricane Katrina. We do not have a total for the number of interviews provided by local weather office staff during the 26th, 27th and 28th.

Proof of the effectiveness of this effort by NWS can be found in the evacuation rates which have widely been reported at around 80% for New Orleans and the low-lying parishes of Louisiana (some of which may have exceeded 90%).¹⁹ This was better than

18. Susan Glasser and Michael Grunwald, "The Steady Buildup to a City's Chaos," *Washington Post*, September 11, 2005. The exchange reported from Maestri was that "his friend Max Mayfield was on the line..." "Walter, get ready." Maestri, "What do you mean?" Mayfield, "This could be the one." Maestri, "Oh, my God."

19. See for example, Jeff Wilkinson, "12 Lessons that South Carolina Can Learn from Katrina," *The*

expected based on an LSU survey from 2004 that showed a storm as severe as Hurricane Andrew would only produce a 69% evacuation response.²⁰ Evacuation rates widely vary from storm to storm, and place to place, but 80% appears to be a successful rate based on comparison with other evacuation experiences.²¹

As a side note, the decision to evacuate an entire population, even if it is physically doable, is a dangerous one. A false prediction leading to an evacuation is feared to reduce evacuation rates for subsequent storms (though the evacuation psychology literature challenges this premise). Further, any evacuation puts people at risk. The sick and infirm are put at medical risk in the effort and require special attention. Evacuation routes are often clogged with a real possibility that people will end up trapped in their vehicles or in the open rather than relatively safe at home. And accidents also happen in an evacuation with lives lost, as we saw in the Rita evacuation.²²

State, September 4, 2005. Ann Carrns, Chad Terhune, Kris Hudson and Gary Fields, "Overwhelmed: As U.S. Mobilizes Aid, Katrina Exposes Flaws in Preparation," *Wall Street Journal*, September 1, 2005.

20. Jeanne Hurlbert and John Beggs, "New Orleans Population Survey - Hurricane Evacuation and Sheltering, reported in *Annual Interim Progress Report: Assessment and Remediation of Public Health Impacts Due to Hurricanes and Major Flooding Events*, Center for the Study of Public Health Impacts of Hurricanes, LSU, submitted to the Louisiana Board of Regents, December 21, 2004, p. 15. We have not come to a conclusion regarding whether a plan should be in place to move large populations that do not have access to automobiles out of the way of a storm. No city, and certainly not one as poor as New Orleans, can probably organize such an effort, but even if they could, problems of getting people on buses out of a busy area before a storm hits, with highways clogged and perhaps insufficient medical care or law enforcement capacity, seems difficult and worth careful study.

21. Behavior on evacuation orders has been widely studied for fifty years. For example, in the Carolinas, there have been extensive comparisons of evacuation behavior for Hurricane Bertha (37% evacuation), Hurricane Fran (55% evacuated), Hurricane Dennis (17% evacuated), Hurricane Floyd (41% evacuated), and Hurricane Bonnie (26%). At the other end of the spectrum are reports of Panama City, Florida, evacuating at up to 97% for Hurricane Eloise and 68% of Galveston moving out of the way of Hurricane Carla. It is difficult to compare evacuation rates due to varying areas surveyed in the effort to pin down how risk is perceived and what leads to evacuation decisions. This work is an example of how social science survey work feeds into public policy in a way that can save lives. Representative literature would include: Earl J. Baker, "Hurricane Evacuation Behavior," *International Journal of Mass Emergencies and Disasters* (August 1991) pp. 287-310. Earl J. Baker, "Hurricanes Bertha and Fran in North and South Carolina: Evacuation Behavior and Attitudes Towards Mitigation," for U.S. Army Corps of Engineers, March 1997. Kirstin Dow and Susan L. Cutter, "Repeat Response to Hurricane Evacuation Orders," *Quick Response Report #101*, funded by NSF, 1997. John Whitehead, Bob Edwards, Marieke Van Willigen, John R. Maiolo, Kenneth Wilson and Kevin Smith, *Heading for Higher Ground: Factors Affecting Real and Hypothetical Hurricane Evacuation Behavior*, for North Carolina Department of Crime Control and Public Safety, April 2000. Whitehead, Edwards, Van Willigen, Maiolo, and Wilson, *Hurricane Evacuation Behavior: A Preliminary Comparison of Bonnie Dennis and Floyd*, for North Carolina Division of Emergency Management and North Carolina Sea Grant Program, May 2000. Brian Wolshon, Elba Urbina, Marc Levitan, *National Review of Hurricane Evacuation Plans and Policies*, LSU Hurricane Center, 2001.

22. The Rita evacuation in Texas offers vivid evidence of the dangers of a wide-ranging evacuation. Thousands of people were forced to abandon their cars and seek out temporary emergency shelter as the storm roared into Texas; they may have been safer at home or near their homes than where they

The work of the NHC tracking a hurricane ends at landfall. At that point, the local weather offices take over providing real time reports on the local impact of the storm and its progress. With Katrina, landfall came at 6:10 a.m. CDT August 29, and the Slidell office took over coverage for the Louisiana region. Their work products were available over NOAA Weather Radio with reports on storm surge, wind, rainfall, speed of the storms movement and so forth. Significantly, at 8:14 a.m. CDT, August 29th the Slidell office issued the following alert:

“A levee breach occurred along the Industrial Canal at Tennessee Street. 3 to 8 Feet of water is expected due to the breach.... Locations in the warning include but are not limited to Arabi and 9th Ward of New Orleans.”

This warning went out over the NOAA All Hazards Radio as well as through the rest of the Emergency Alert System. At this time, the Slidell Weather Forecasting Office was the primary source of weather forecasting information for the New Orleans/Baton Rouge area. Therefore, this Flash Flood Warning would also be provided to all media outlets in the area as well as to all local emergency management personnel including the Louisiana Homeland Security Operations Center in Baton Rouge. Every emergency management center in the New Orleans region should have received this notice. Press also should have received it. This was not an obscure transmission with no reasonable expectation that key decision-makers and staff would miss. This was an official warning from the Weather Service station closest to the storm as it roared through New Orleans and the nearby parishes of Louisiana. This is the station that should be the eyes and ears for local, State and Federal emergency response officials.

At 9:00 a.m. (CDT), August 29, the Slidell office went off-line, but the Weather Service has a plan for backup operations to move into place from other local weather offices that are in the region. For the remainder of the storm’s impact, broadcasts came out of the Baton Rouge and/or the Mobile offices. Then at 11:40 a.m. (CDT) the Baton Rouge Office put out the following message through the Emergency Alert System of the NOAA Weather Radio and other media outlets:

“Widespread flooding will continue across the parishes along the south shore of Lake Ponchartrain in the greater New Orleans area... as well as in portions of Plaquemines Parish. This continues to be an extremely life threatening situation. Those seeking refuge in attics and roof-tops are strongly urged to take the necessary tools for survival. For example... those going into attics should try to take an axe or hatchet with them so

ultimately settled. The terrible accident involving a bus fire that claimed the lives of 24 elderly citizens seeking to evacuate is a painful reminder that evacuations can cost lives. "Bus carrying elderly evacuees burns; 24 dead," NBC, September 23, 2005.

they can cut their way onto the roof to avoid drowning should rising flood waters continue to rise into the attic.... Rescue may not come until strong winds abate as dangerous hurricane Katrina moves Northeast of the Area.”

There is simply no doubt that the National Weather Service did a magnificent job in all their efforts. They identified the developing storm and tracked its progress. The NHC provided an extraordinarily accurate projection for the storm’s track and strike point. The Center and the local weather offices communicated these risks very effectively to emergency officials at all levels of government, as well as reaching out to the public through broadcast media. This work, also being communicated through the local weather broadcasters, plays a huge role in the decisions of people to evacuate and it literally saves lives.²³

The work of the Weather Service continued even as the storm raged ashore. The first accurate public information regarding levee failure was made available to all who had access to the NOAA Weather Radio system only two hours and four minutes after landfall. Even after the Slidell office went down, information regarding local conditions in and around New Orleans continued to be broadcast from other offices in the region. The redundancy that comes with multiple local offices allowed the Weather Service to get the word out even to those who had to respond to the crisis and the people whose hope lay in a rapid response. The work of the Weather Service was a casebook study for how an agency should develop tools to carry out its tasks and then follow their playbook under very difficult circumstances.

23. The evacuation behavior research cited in footnote 17 above contains several survey results that indicate that weather service/weather broadcasting warnings account for an equal or greater proportion of evacuation decisions than do official evacuation orders from public officials. Interestingly, this effect seems to have emerged in the 1990s as Baker doesn't report it in his 1991 study.

3. The Nightmare Scenario: A Major Hurricane Striking New Orleans

“All sorts of people ask me, ‘When did you become concerned about New Orleans?’ I say, ‘Decades ago.’”

*Max Mayfield
Director, National Hurricane Center
Staff Briefing House Science Committee
September 20, 2005*

“I don’t think anybody anticipated the breach of the levees. They did anticipate a serious storm. But these levees got breached. And as a result, much of New Orleans is flooded. And now we are having to deal with it and we will.”

*President George W. Bush
ABC Good Morning America
September 1, 2005*

“I must say, this storm is much, much bigger than anyone expected”

*FEMA Director Michael Brown
Larry King Live, CNN
September 1, 2005*

It is useful to begin with the obvious: whether levees are overtopped due to a major storm or floodwalls breach due to a major storm, the City of New Orleans would be flooded. This has been known for a very long time. It is inconceivable that any emergency manager at any level of government, right up to the Nation’s top emergency manager, the President, should not have known that the stakes of Katrina bearing down on New Orleans as a Category 4 or even Category 5 storm were that the city would end up under water. Since the Saffir-Simpson Hurricane Scale only goes to Category 5, it is hard to understand what Mr. Brown meant by his comment. That is what was being projected as a possibility for Katrina on Sunday as FEMA and the Federal government should have been swinging into action. And yet somehow he was surprised.

Mr. Mayfield followed the remarks quoted above by adding that every director of the National Hurricane Center, since its founding in 1967, has shared his concern for New Orleans.²⁴ On September 19, 1947, a Category 3 hurricane made a direct hit on downtown New Orleans leaving the area flooded from tidal surges off Lake Pontchartrain; this was the real wake-up call to the Nation that New Orleans was in a delicate situation. Multiple near misses have occurred since (see Table One).

24. President McKinley charged the then-Weather Bureau to establish a hurricane warning network in 1898; this work came to be centralized in the Miami bureau office, which was designated as the NHC in 1967.

Table One: Major Hurricane Incidents Affecting New Orleans Since 1960

Year	Major Hurricane	Effects
1964	Hurricane Hilda	Struck Southeast LA. 38 fatalities.
1965	Hurricane Betsy	Storm surge of 10 feet came up the Mississippi and into Lake Pontchartrain causing the worst flooding since 1947; 81 fatalities.
1969	Hurricane Camille	A rare Category 5 hurricane that struck east of Louisiana at Pass Christian, MS; 258 deaths; levee improvements after Hurricane Betsy.
1998	Hurricane Georges	Evacuation of New Orleans largest effort in U.S. history, overwhelming transportation in the region; Superdome designated as shelter of last resort. Georges makes landfall at Biloxi, MS.
1999	Hurricane Ivan	Category 4 aiming for N.O. led to another evacuation; this time they utilized "contraflow" for evacuation traffic; the new system led to gridlock reports of 11 hours to travel a distance normally taking 90 minutes

(table compiled primarily from information from the National Weather Service.)

The successive hurricanes Georges and Ivan brought a renewed focus on the vulnerability of New Orleans. Academic studies, especially by scholars associated with various centers at Louisiana State University, explored the storm conditions that might lead to flooding of the city and the options available to protect the city or rescue it and restore it should the worst happen. By the late 1990s, Joe Suhayda, then director of the Louisiana Water Resources Research Institute at LSU, was widely quoted in early popular stories regarding what would happen in New Orleans. However, LSU also hosted a Hurricane Center which was active in a wide range of hurricane research and, in 2002, launched the Center for the Study of Public Health Impacts of Hurricanes. Suhayda was developing computer models to test what sort of storm would lead to flooding of the city. Eventually he concluded that a slow moving Category 3 coming over Lake Pontchartrain could produce that result.

The Hurricane Center took this issue on as well and seems to have fine-tuned some of the modeling. The consequence of this academic activity and the near-misses of 1998 and 1999 was that the press was open to covering the potential plight of New Orleans.²⁵

Beginning in 2000, there were a string of articles in the popular media about a major storm striking New Orleans. A simple accounting shows *Time* magazine doing a cover story on the threat in its July 10, 2000 edition; *USA Today* ran a story in July 2000; *Popular Mechanics* ran a story in September 2001; *Scientific American* printed a story in

25. The richness of the work out of the LSU Hurricane Center can be explored on their web site at <http://www.hurricane.lsu.edu/>.

October 2001; the Houston *Chronicle* had a story in 2001; the New Orleans *Times-Picayune* did a five-part series during June 2002; and American Radioworks aired a story in September 2002.²⁶

Official Washington was also aware of the dangers to New Orleans. President Bush's first director for FEMA, Joe Allbaugh, reportedly claimed that he had asked his aides to examine the nation's potential catastrophes. The top three catastrophic disasters were a terrorist attack on New York, an earthquake hitting San Francisco and a hurricane striking New Orleans.²⁷

According to the 2002 *Times-Picayune* reports, "In the past year, Federal Emergency Management Agency officials have begun working with state and local agencies to devise plans on what to do if a Category 5 hurricane strikes New Orleans.... In concert with state and local officials, FEMA is studying evacuation procedures, post-disaster rescue strategies, temporary housing and technical issues such as how to pump out water trapped inside the levees, said Michael Lowder, chief of policy and planning in FEMA's Readiness, Response and Recovery directorate. A preliminary report should be completed in the next few months."²⁸ We can find no evidence that such a report was completed.

While we cannot find that report, we do know what happened to FEMA. Within months of the news story in the *Times-Picayune*, FEMA was addressing the difficult task of integrating into a new Department of Homeland Security. One of twenty-two agencies that the Bush Administration wanted to see rolled into DHS, the new Department, launched in January 2003, was the largest civilian agency in the government. FEMA's director was no longer a Cabinet member and instead was a mere Undersecretary. Even the agency's name was in question for some time.²⁹

26. Adam Cohen, "The Big Easy on the Brink," *Time*, July 10, 2000. James West & Chris Vaccaro, "Big Easy a Bowl of Trouble in Hurricanes," *USA Today*, July 2000. Jim Wilson, "New Orleans is Sinking," *Popular Mechanics*, September 11, 2001. Mark Fischetti, "Drowning New Orleans," *Scientific American*, October 1, 2001. Eric Berger, "Keeping Its Head Above Water: New Orleans Faces Doomsday Scenario," *The Houston Chronicle*, December 1, 2001. "Washing Away," a five-part series, *New Orleans Times-Picayune*, June 23-27, 2002. Daniel Zwerdling, "Hurricane Risk to New Orleans," *American Radioworks*, September 2002.

27. This ranking is found in many, many news articles. However, we have not been able to locate a FEMA report that verifies the story. The story behind the story is that a reporter took those three catastrophes from a slide presentation offered by Marc Levitan of LSU's hurricane center in 2001. The FEMA information appears to have come from reports that filtered out of a small meeting Allbaugh had with SE Louisiana emergency managers. This ranking coming from Allbaugh has been confirmed from multiple sources. See Eric Berger, the reporter who first wrote about the three scenarios, discussion of this at http://blogs.chron.com/sciguy/archives/2005/09/did_fema_really.html.

28. "Washing Away," part 1, *Times-Picayune*, June 23, 2002. No evidence of a report has been found to date.

29. The Bush Administration was not alone in calling for FEMA to be included in the new Department. However, this was the subject of much debate in Congress. On this question, as on virtually every key issue regarding the new Department, the Administration got its way.

The motivating logic for DHS was preparation for terrorist attacks. As a component of DHS, FEMA seems to have adapted to this new central mission. Even before being incorporated into DHS, FEMA was reorienting (as was every other agency of government related to security) its work to emphasize responding to the terrorist threat. For example, FEMA's FY2002 budget request asked for a doubling of its budget to \$6.6 billion, but \$3.5 billion of that was for grants to state and local authorities to prepare to respond to terrorism.

FEMA had already been moving away from disaster mitigation even before 9/11, with Director Joe Allbaugh proposing the termination of the successful "Project Impact" program and talk of contracting out disaster services to the private sector.

Allbaugh seemed to carry a hostility to FEMA as it had evolved under President Clinton and James Lee Witt. In testimony before the Veterans Affairs, Housing and Urban Development and Independent Agencies Subcommittee of the Senate Appropriations Committee on May 16, 2001, Allbaugh testified that,

"The original intent of Federal disaster assistance is to supplement State and local response efforts. Many are concerned that Federal disaster assistance may have evolved into both an oversized entitlement program and a disincentive to effective State and local risk management. Expectations of when the Federal Government should be involved and the degree of involvement may have ballooned beyond what is an appropriate level. We must restore the predominant role of State and local response to most disasters. Federal assistance needs to supplement, not supplant, State and local efforts."

Allbaugh brought a shift in the Federal response to national emergencies with an expectation that State and local governments would bear the burdens of response to a greater degree than they had in the 1990s. It isn't clear that 9/11 changed this attitude.

After 9/11, the focus on terrorism further undermined the focus at FEMA of providing timely support for emergency managers in responding to the predictable, but seemingly less compelling, threats posed by fire, flood, wind or earthquakes. FEMA was working hard to learn what to do in the event of a terrorist attack and there seems to be an assumption that FEMA already knew what to do in the face of acts of nature that can strike with the power of an atomic blast.³⁰

According to the head of the FEMA employees union (as of 2004), "Over the past three-and-one-half years, FEMA has gone from being a model agency to being one where

30. Government Accountability Office. "Homeland Security: DHS' Efforts to Enhance First Responders' All-Hazards Capabilities Continue to Evolve." July 2005. GAO-05-652.

funds are being misspent, employee morale has fallen, and our nation's emergency management capability is being eroded. Professional staff are being systematically replaced by politically connected novices and contractors.³¹

The American Federation of Government Employees surveyed FEMA personnel in February 2004. They found that 80% felt that FEMA was a "poorer agency" since being incorporated into DHS and 60% said they would take a transfer to another agency if they made the same salary.³²

Further proof of the shift in emphasis away from natural disaster planning and response and towards terrorist incident preparation was uncovered by NBC News which reported that they found a planning document from July 2004 "showing 222 upcoming FEMA and homeland security exercises scheduled to prepare for national emergencies. Only two involve hurricanes." NBC News Analyst William Arkin found that, "even in both those cases, they're dealing with what would happen if there were a terrorist attack associated with a hurricane event."³³

Despite the increasing focus on preparing to respond to terrorist attacks, FEMA did find the money to fund an exercise designed to model the problems that would come with a major hurricane striking New Orleans. The Hurricane Pam exercise was to lead to a plan that would integrate the response capabilities of the Federal, State and local governments. Some three years after Joe Allbaugh claimed that New Orleans was one of the top three catastrophes that could face the Nation, the agency positioned to assist in that emergency finally came back to thinking about what would need to be done.

FEMA awarded an \$800,000 contract to IEM, Inc. of Baton Rouge in May of 2004 to run a simulation of a major hurricane striking New Orleans. Yes, the Federal government's planning for a major national disaster was being contracted out.³⁴

The exercise assumed a slow-moving Category Three hurricane causing 10-12 feet of flooding in New Orleans. The simulation run by IEM included representatives from FEMA, the Corps of Engineers, State of Louisiana emergency officials, New Orleans officials, LSU hurricane experts and at least one observer from the White House.³⁵

31. Quote from Jon Elliston, "A Disaster Waiting to Happen," *Gambit Weekly*, September 8, 2004. Elliston's article is a strong piece of investigative journalism funded by the Association of Alternative Newsweeklies. The prior paragraph is also based on Elliston. A similar point about a brain drain at FEMA was the subject of a *USA Today* editorial on September 8, 2005, "Exposed by Katrina, FEMA's Flaws Were Years in Making."

32. The survey is cited in Elliston. The size was relatively small, just 84 respondents.

33. Lisa Myers and the NBC Investigative Unit, "Was FEMA Ready for a Disaster Like Katrina?", September 2, 2005.

34. It may be appropriate to have contracted out this planning since the capabilities at FEMA had declined as described in the article by Elliston.

35. Robert Block, "US Had Plan for Crisis Like Katrina," *Wall Street Journal*, September 19, 2005. Also

Unfortunately, the plan was never finished. By January of this year, a 200-page summary of recommendations was being shared with participating local, State and Federal officials. Apparently, funding for the project was delayed and the final payment didn't come through until June 2005. After that IEM ran two post-action meetings (one in July and one in August) so that they could move towards finalizing the planning document. At the time Katrina was aiming for New Orleans, IEM hastily shared a 448-page draft with staff of the National Response Coordination Center at FEMA over the weekend of August 27 and 28.³⁶

Among the elements of the draft report was an acknowledgment that it would take hundreds of buses a day to transport victims to Medical Operations Staging Areas. The report was premised on the foreknowledge that more than 100,000 residents of New Orleans lacked cars and would be unable to get out of the city ahead of a storm. No responsibility for identifying and arranging for this transportation armada is assigned in the draft (all assignments seem to be TBD - to be determined). This is curious because according to a press release out of FEMA dated July 23, 2004 crowing about the completion of the Hurricane Pam exercise, **“the search and rescue group developed a transportation plan for getting stranded residents out of harm’s way.”** The release does not specify who would do what nor enumerate just how many residents they anticipated having to move.³⁷

FEMA was certainly aware that such a large proportion of the population of New Orleans had no way out. Their “National Situation Update” for Sunday August 28, 2005, includes this notice: “at least 100,000 people in the city lack the transportation to get out of town.”³⁸ These updates go to all the DHS managers responsible for emergency response, including Chertoff and Brown.

It is worth noting that the Hurricane Pam scenario projected over 60,000 dead and more than 380,000 injured or ill. With that as the backdrop for Katrina, one would expect that the Federal response would have been massive and aggressive.

It is pure bad luck that Katrina blew out of the Gulf while the old plans of the State and City had been recognized as being inadequate and before a new plan integrating the Federal government into a response could be hatched. But that was the situation on

an interview with Ivor van Heerden in which van Heerden said a White House staffer participated; LSU professor, CNN interview excerpt aired on September 25, 2005.

36. Robert Block, “US Had Plan for Crisis Like Katrina,” *Wall Street Journal*, September 19, 2005. See also FEMA, “Hurricane Pam Exercise Concludes,” Press Release for July 23, 2004.

37. FEMA, “Hurricane Pam Exercise Concludes,” Press Release for July 23, 2004. The discussion preceding this quote is from the WSJ, “U.S. Had Plan for Crisis Like Katrina.”

38. FEMA, “National Situation Update,” August 28, 2005. According to a story reported on National Public Radio these summaries are prepared each morning and sent by e-mail to all Federal Emergency Managers, including Michael Brown and Secretary Chertoff.

the ground in late-August 2005.³⁹

So, DHS and FEMA knew of the storm and its potential power. FEMA had considered a major hurricane striking New Orleans to be one of its worst potential disasters. DHS managers were aware, both from planning exercises funded by FEMA and from their own situation update, that at least 100,000 would be stuck in a city likely to be flooded by noon on Monday, August 29. FEMA knew a major search and rescue operation would have to be mounted and that tens of thousands of people would need to be moved somewhere and given food, clothing, housing and medical attention. This chain of knowledge stretches many months and even years prior to the National Weather Service spotting Katrina, but it was the emergence of Katrina that should have triggered FEMA and DHS swinging into action to save lives and protect property. What did they do with this intelligence?

Before we pursue this issue, we need to take a step back and examine the broader planning environment that had shaped the outlook of the Department of Homeland Security and FEMA. Without an understanding of the various plans that had been launched or nearly adopted, it is hard to interpret some of the subsequent actions.

39. The Louisiana state plan was tested in an exercise, "Hurricane Zebra," in July 2000; "Hurricane Exercise Tests State's Readiness," *Baton Rouge Advocate*, July 14, 2000. Though this observation is not unique, one of the most interesting sources on the Pam exercise and planning is from a blogger <http://suspect-device.blogspot.com> who claims to have been a participant in the exercise as a then-employee of IEM, Inc. None of the information in this section is drawn from his blog since staff have not confirmed his participation, but the writing on the subject is so detailed and informed that his accounts are credible.

4. Planning for Disaster at the Department of Homeland Security

The Bush Administration has repeatedly issued assurances that the American people are safer now than prior to September 11. New intelligence systems are in place designed to integrate information and lead to proactive steps to block potential attacks on U.S. soil or warn communities of impending danger so that they can take appropriate steps to reduce their risks. The Federal government has reorganized itself so that all the major agencies on the first line to respond to a disaster are integrated into the Department of Homeland Security. Billions of dollars have been spent expanding the capabilities of this new department and the department itself has passed on billions of dollars in assistance to state and local communities for better equipment for first responders. The Department ran numerous exercises throughout the nation to give Federal, State and local emergency responders a chance to work through the practical challenges of meeting various scenarios.

It is impossible to understand the failures of the Federal response to Katrina without appreciating the new system for response being developed by the Bush Administration. Reinventing the Federal response to domestic emergencies began when the President directed the Department of Homeland Security to develop a comprehensive domestic response plan. On February 28, 2003 the President signed Homeland Security Presidential Directive #5 (HSPD-5).

According to the text of the document, the purpose of HSPD-5 is “(t)o enhance the ability of the United States to manage domestic incidents by establishing a single, comprehensive national incident management system.⁴⁰” The goal of this initiative was to “ensure that all levels of government across the Nation have the capability to work efficiently and effectively together, using a national approach to domestic incident management.⁴¹”

The Secretary of Homeland Security was charged with developing two plans: the National Incidents Management System (NIMS) and the National Response Plan (NRP). The NIMS was to establish the guidelines for how to work across all levels of government and across all agencies. NIMS is 139 pages long and provides detailed guidance on terminology and on the practical challenges of managing an incident in the field (communications, resource mobilization and tracking, command and control and so forth). States and local governments were to be integrated into this system to insure interoperability and compatibility.⁴² DHS was to provide grants and training to make NIMS the common standard for response throughout all levels of the emergency management and response community.

40. HPSC-5: “Management of Domestic Incidents;” quote from the first section, “Purpose”, The White House Office of the Press Secretary, February 28, 2003.

41. HPSC-5, quote from “Policy (3).”

42. HSPD-5, “Tasking” paragraph 15.

The National Response Plan was to assign all the Federal capabilities for any kind of national incident into one comprehensive effort. This plan was to make clear responsibilities, department by department, for prevention, preparedness, response and recovery for every imaginable eventuality. The NRP dwarfs NIMS, weighing in with more than 400 pages.

The Secretary was given very specific guidelines for developing these plans. The NRP was to be drafted by April 1, 2003 and submitted to the White House with a plan for full development and implementation. The NIMS was to be developed and established by June 1, 2003. The NRP was to be implemented by September 1, 2003 and the Secretary should have, by that date, identified any changes to law or regulation necessary to fully implement all the elements of the NRP. The dates on the NIMS and NRP that were released to the public are March 1, 2004 and December 2004 respectively. That suggests that NIMS was nine months overdue and the NRP 15 months late when they were initiated. It is possible that the lost months may play some role in the weak response to Katrina in that it means less time to learn how to follow the plans and who would do what. This issue should be pursued.

The NRP provides detailed guidance on who should do what among Federal agencies in a variety of scenarios. The plan lists six incidents: biological, catastrophic, cyber, food and agriculture, nuclear/radiological, oil and hazardous materials. Hurricanes are considered to be catastrophic incidents for the purposes of mobilizing the Federal Government.

Every agency with a role in responding to a catastrophic incident is identified in the NRP. The National Weather Service is mentioned under many of the support functions that are laid out in the plan. The entry from the Communications Emergency Support Function section is representative of the role envisioned for NWS:

“NWS supports the Emergency Alert System (EAS) and provides, in coordination with DHS/EPR/FEMA, public dissemination of critical pre-event and post-event information over the all-hazards NOAA Weather Radio system, the NOAA Weather Wire Service and the Emergency Manager’s Weather Information Network.”

In a catastrophic incident the Department of Homeland Security is to be the coordinating agency for the entire Federal governmental response. Practically speaking, responding to a natural disaster will be the responsibility of FEMA, with the Secretary designating the head of FEMA as his or her representative with full authority to carry out the plan.

The NRP defines what constitutes an “Incident of National Significance,” a designation that triggers many of the actions envisioned in the NRP from the agencies of the Federal government. The definition of a catastrophic incident applies to hurricanes and

reads as follows:

“A catastrophic incident, as defined by the NRP, is any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions. A catastrophic incident could result in sustained national impacts over a prolonged period of time; almost immediately exceeds resources normally available to State, local, tribal and private-sector authorities in the impacted area; and significantly interrupts governmental operations and emergency services to such an extent that national security could be threatened. All catastrophic incidents are Incidents of National Significance. These factors drive the urgency for coordinated national planning to ensure accelerated Federal/national assistance.”

The NRP goes on as regards catastrophic incidents:

“Recognizing that Federal and/or national resources are required to augment overwhelmed State, local, and tribal response efforts, the NRP-Catastrophic Incident Annex (NRP-CIA) establishes protocols to preidentify and rapidly deploy key essential resources (e.g., medical teams, urban search and rescue teams, transportable shelters, medical and equipment caches, etc.) that are expected to be urgently needed/required to save lives and contain incidents.”

Finally,

“Accordingly, upon designation by the Secretary of Homeland Security of a catastrophic incident, Federal resources - organized into incident-specific packages - deploy in accordance with the NRP-Catastrophic Incident Supplement and in coordination with the affected State and incident command structure.⁴³”

One element of the Nation’s planning for a national disaster that is largely unaddressed in the NRP and NIMS is the role of the National Guard. The NRP only mentions the National Guard on 8 of the 408 pages in the document. Because the Guard serves under the command and control of a Governor, it seems beyond the planning scope of the NRP to provide extensive discussion of the Guard as part of the National response. Yet the war in Iraq, which has drained state guard resources, makes any state’s capacity to respond singly to a large natural catastrophe somewhat questionable.

43. This long string of quotes comes from the Department of Homeland Security, National Response Plan, Catastrophic Incident Annex, P. CAT-1.

Further, while Governors can seek assistance from other Governors through mutual aid pacts, it is unclear how tasking for Guard requests will be efficiently handled when multiple states are seeking aid and assistance, as Mississippi and Louisiana were. The whole issue of who asked for help when and who decided to respond in what manner should be explored very carefully. There may be a Federal role here that needs to be clarified since there is a National commander for the Guard and the commander and, as we understand it, that commander makes assignments as requests come in.⁴⁴ Since the National Guard is our greatest single national resource for responding to major catastrophes, the lack of Federal planning for the Guard's role seems like a major oversight.

As tedious as this brief description of the planning documents may be, it fails to do justice to the challenge of actually reading and digesting these documents. Unfortunately, NIMS and NRP are not the entire universe of relevant planning documents for a Federal emergency manager. NIMS and NRP are about processes and responsibilities. Missing from them are specific tasks that need to be accomplished for particular scenarios and a clear assignment of who has what resources to carry out these tasks. The effort to identify tasks and resources came as a result of another Presidential Directive.

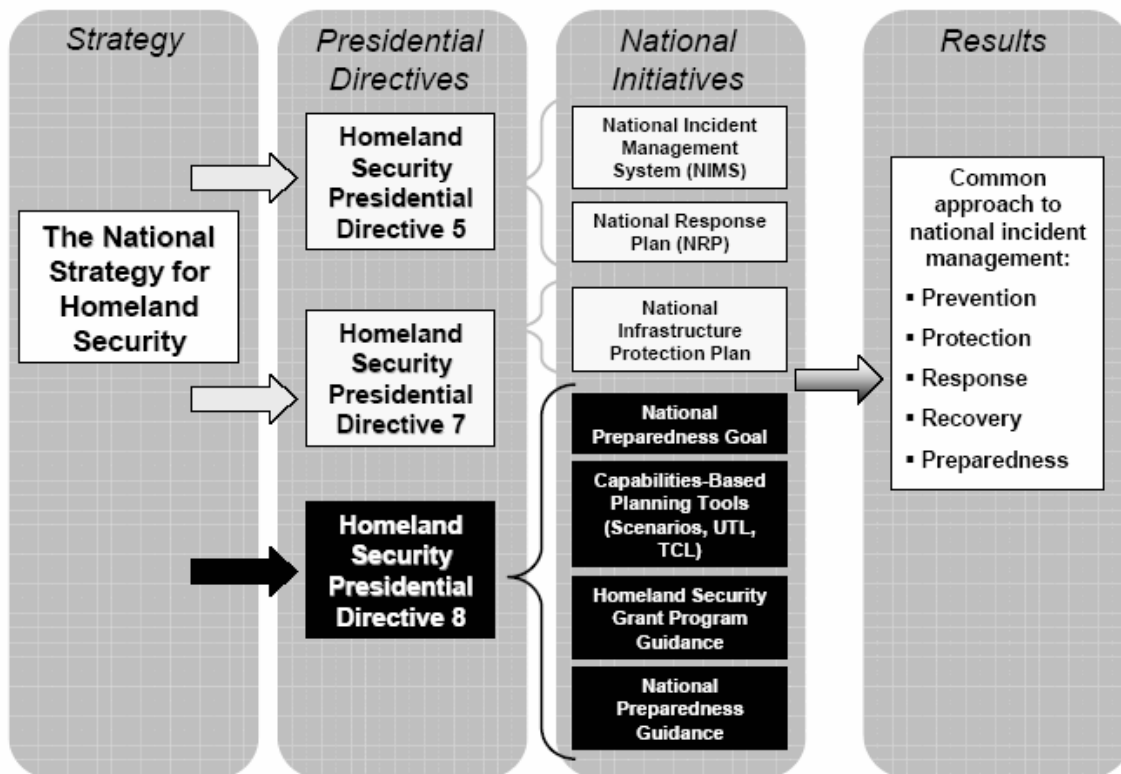
This new directive, Homeland Security Presidential Directive #8 (HSPD-8), was issued on December 17, 2003. HSPD-8 directs that there be "a national domestic all-hazards preparedness goal, establishing mechanisms for improved delivery of Federal preparedness assistance to State and local governments, and outlining actions to strengthen preparedness capabilities of Federal, State and local entities."⁴⁵

HSPD-8 was envisioned as a "companion" to HSPD-5. HSPD-5 was to identify steps to improve coordination across government. HSPD-8 was to describe in more detail how Federal departments would prepare for a response to an incident. Among the elements of this second directive was an emphasis on training and exercises designed to meet the national preparedness goal.

Following in the train of this 7-page directive came National Planning Scenarios, a Universal Task List (UTL), Critical Tasks derived from the UTL, and a Target Capabilities List (TCL).

44. Sharon Theimer, "Congress Likely to Probe Guard Response," Associated Press, September 3, 2005. Senator Warner promised to investigate this through his Committee.

45 . Homeland Security Presidential Directive/HSPD-8, December 17, 2003. Text available at the White House web site.



This Chart is from the Interim National Preparedness Goal from the Department of Homeland Security, March 27, 2005, p. 2.

The National Planning Scenarios process identified 15 likely scenarios that might unfold in the United States. Twelve of the scenarios were the result of terrorist activity. Three scenarios - a major hurricane or earthquake or a pandemic influenza outbreak - were naturally occurring events.⁴⁶ These Scenarios were developed to provide the means for identifying the entire range of tasks that must be performed, by every level of government, in response to each type of event.

Despite the religious adherence to the science of risk assessment in the regulatory arena, in the area of disaster preparation and preparedness DHS gave no consideration to the likelihood of occurrence of each of the 15 National Planning Scenarios. This lack of risk consideration was questioned by state and local emergency managers both in terms of the DHS grant funds available for equipment and training and of the utility for preparedness planning of the large proportion of scenarios based on terrorist attacks.⁴⁷

46 . These scenarios were found residing on a web page of the State of Hawaii. The document was produced in July 2004 by David Howe, Senior Director for Response and Planning of the Homeland Security Council.

47. "State preparedness officials and local first responders we interviewed said that DHS's emphasis for grant funding was too heavily focused on terrorism and they sought to acquire dual use equipment and

This was the intention of the Homeland Security Council. Apparently, the Homeland Security Council excluded scenarios for which they considered Federal response capabilities to be well-developed and frequently exercised. This meant that scenarios including frequently occurring natural disasters such as floods, transportation accidents, and industrial accidents were deliberately not included in the scenarios.⁴⁸ DHS intended the scenarios to be used to test the range of response capability and resources. This approach may have had the effect of diluting the capabilities and resources of our emergency management response by emphasizing the breadth of capabilities rather than focusing our capabilities on the risks we are most likely to encounter.

The Target Capabilities List was released in preliminary fashion early in 2005 and the version that appears to be currently operative is marked as "Version 1.1" released on May 23, 2005. Curiously, the Universal Task List was still being developed and - according to a press report - not ready for roll-out until October (until Katrina forced managers to turn to it before it was fully agreed to) but the Target Capabilities List was to be derived from the Task List. The driving force in the illogical release of the dependent document before the superior document seems to be the need to provide guidance to state and local governments seeking DHS money. One of the critical elements of the Task Capabilities List is the development of guiding principles for future grant competitions.⁴⁹

In its current manifestation, the Target Capabilities List (TCL) is over 160 pages long. It attempts to identify a set of common tasks across all crises involving prevention, protection, responding and recovery. Unfortunately, the taxonomy seems incredibly bureaucratic and linear, lacking any vision regarding the flexibility necessary to deal with an actual incident. For example, page 8 of the document shows a chart that lays out the steps involved in each of the four areas noted above. This chart is reproduced below as it is displayed in the TCL.⁵⁰

training that might be used for emergency events that occur more regularly in their jurisdictions in addition to supporting terrorism preparedness." p. 6

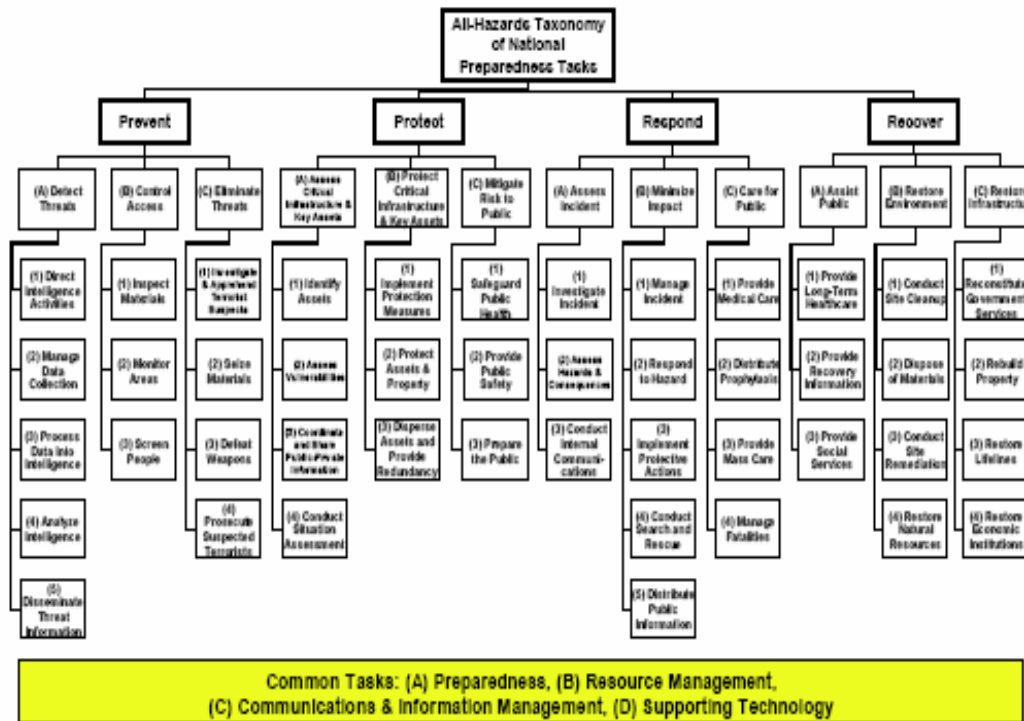
"Some state and local officials and experts in the field of emergency preparedness said that the scenarios did not appear to reflect an assessment of risk or a relative ranking related to risk. As a result, they questioned whether the scenarios were appropriate inputs for preparedness planning, particularly in terms of their plausibility and the number of scenarios that are based on terrorist attacks." p. 16. Government Accountability Office. "Homeland Security: DHS' Efforts to Enhance First Responders' All-Hazards Capabilities Continue to Evolve." July 2005. GAO-05-652.

48. Government Accountability Office. "Homeland Security: DHS' Efforts to Enhance First Responders' All-Hazards Capabilities Continue to Evolve." July 2005. GAO-05-652. p. 16

49. Department of Homeland Security, "National Preparedness Guidance," April 27, 2005. See page c-1 for example, though this issue is discussed in several places in the text.

50. Department of Homeland Security, Target Capabilities List, May 23, 2005, p. 8. We cannot reproduce the chart legibly here, but we will recreate it in a subsequent release.

Figure 1: All-Hazards Taxonomy of National Preparedness Tasks (Universal Task List):



Staff have not had access to the Universal Task List (UTL), but the *Washington Post* reported on September 4, 2005 that the UTL was e-mailed to DHS contractors the day after Katrina hit the Gulf Coast. According to the *Post* account, “Attached were two documents - one more than 400 pages long - that spelled out in numbing, acronym-filled detail the planned “national response goal.” The checklist, called a UTL, appeared to cover every eventuality in a disaster, from the need to handle evacuations to speedy urban search and rescue to circulating “prompt, accurate and useful” emergency information.⁵¹” As of December 2004, it appears that the Universal Task List lay at approximately 1800 tasks.⁵²

Between the NIMS, NPR, UTL and TCL, a Federal emergency manager would have approximately 1000 pages of guidance. (To help make sense of how all these relate, one might turn to a document produced by the Department of Homeland Security

51. Susan B. Glasser and Josh White, “Storm Exposed Disarray at the Top,” *Washington Post*, September 4, 2005.

52. Presentation by Gil Jameson, NIMS Integration Center Director, FEMA to NCSBCS/AMCBO Public Sector Members Important Issue Call Summary, December 20, 2004. Available at www.ncsbc.org/newsite.

entitled “National Preparedness Guidance”; it was dated April 27, 2005 and runs approximately 100 pages in length. It explains the intended purpose of each of the planning documents in case one were confused.⁵³

Reading through the emergency planning documents of the Bush Administration produces an oddly surreal effect. They are all written in an abstract fashion that seems removed from real-world crises. The very effort to try to cover all eventualities so that there is generic guidance to deal with unpredictable terrorist attacks takes the life out of planning for risks that are entirely predictable. We do not know more than a few days in advance that a devastating hurricane will strike major population centers on the Atlantic or Gulf Coasts, but we know in a general sense that it will happen every few years. We do not know when a powerful earthquake will disrupt and endanger the lives of millions of people somewhere along the Pacific coast, but we know this will happen.

Lee Hamilton, co-chair of the 9/11 Commission, commented on these plans: “the plans were on paper. The plans were not well understood. The plans were not executed.⁵⁴” It is perfectly worthwhile to try to do a needs-based assessment for determining what would be necessary in any crisis, but if the process of planning is too far removed from actually being ready to act, the plans will fall apart in the storm of confusion that comes with any national incident. The emphasis on producing these elaborate documents may have become its own goal, but that goal does not assure preparation to actually carry the plans out. Planning is not the same as being prepared.

This response system, which is the centerpiece of the Administration’s pledge to make Americans safer, was slowly tottering into place as Hurricane Katrina bore down on New Orleans and the low-lying Gulf communities of Southeast Louisiana and Mississippi. The specific plans for New Orleans had not been completed, as we have seen, and the general plans to guide the Federal and national response were only just barely done. Hurricane Katrina was not attuned to the planning timeline of the American government.

53. Note that on December 17, 2003 President Bush released Homeland Security Presidential Directive/HSPD-7, which set in motion work on Critical Infrastructure Identification, Prioritization, and Protection preparedness planning. If the incident being handled by a responders involves critical infrastructure, there is another universe of planning documents that have to be taken into consideration.

54. Quotes from staff notes watching CNN, September 25, 2005.

5. Hurricane Katrina Versus a Storm of Acronyms (NRP, NIMS, UTL, TCL)

As much effort and expenditure for domestic security as had gone on in the four years since 9/11, it has taken almost that entire time to get the homeland security plans organized and launched. Katrina was the first test of the new system and, luckily for the Department of Homeland Security and FEMA, the storm gave them more than 48 hours of notice. No terrorist is likely to be as accommodating.

Initial government response to the NHC warnings all seemed timely and appropriate. By late Friday the 26th both Governor Barbour and Governor Blanco had declared states of emergency. On Saturday the 27th, local officials began their evacuation routines for coastal areas of Mississippi and Louisiana. The Governor of Louisiana wrote to the President, citing the Stafford Act, requesting that he declare a state of emergency. The letter reads in relevant part,

“I have determined that this incident is of such severity and magnitude that effective response is beyond the capabilities of the State and affected local governments, and that supplementary Federal assistance is necessary to save lives, protect property, public health, and safety...”⁵⁵”

Staff can find no evidence that Governor Barbour ever wrote such a letter to the President.

Within hours of receiving the Governor Blanco’s letter, President Bush responds by declaring an emergency in Louisiana and authorizing the Department of Homeland Security, FEMA, “to coordinate disaster relief efforts which have the purpose of alleviating the hardship and suffering caused by the emergency on the local population.” The declaration then names parishes in Louisiana that were all well north of the Gulf. It is not clear whether this mistake slowed FEMA’s ability to prepare to provide assistance in the parishes actually in the path of the storm, but it is an odd oversight.⁵⁶ The parish list was “fixed” in the August 29 Presidential declaration on Federal Disaster Assistance.⁵⁷

The same day that Governor Blanco wrote to the President, Mayor Nagin of New Orleans lets his citizens know they should prepare to evacuate in a press conference held Saturday afternoon; he then announced a voluntary evacuation at 5:00 p.m. on Saturday. On Sunday morning, Nagin announces a mandatory evacuation at 9:30

55. The letter is available on the Governor’s website. So far as staff have been able to determine, Governor Barbour did not issue such a letter on Saturday or subsequently.

56. The August 27 emergency declaration is available through the White House web site.

57. The August 29 disaster declaration is available through the White House web site.

a.m.⁵⁸

While Nagin has been criticized for the Sunday mandatory evacuation order coming so “late,” the reality was that New Orleans citizens were fully aware of the storm and its destructive potential due to the very serious Weather Service warnings of Saturday. Those who had a means to get out of the city were evacuating in an orderly way all day Saturday even before the Mayor’s voluntary order. It is also worth noting that the State evacuation plan indicates that New Orleans is not to begin an evacuation earlier than 30 hours prior to landfall so as not to clog the few escape routes out of the region. This staggered plan was designed to let the outlying parishes on the coast start their evacuations and move out before the influx of New Orleans residents. This effort to stagger evacuations, coupled with the “contraflow” traffic plan, appears to have made the massive evacuation in the region run relatively smoothly. The Rita evacuation in Texas is an object lesson in what can happen if everyone runs at once.⁵⁹

Every one of these steps would suggest that all levels of government were communicating and that the message delivered by Max Mayfield and others in the emergency response community had the attention of everyone from the President on down. Remember that all three of the principal figures for National emergency response leadership - President Bush, Director Brown and Secretary Chertoff - were involved in the Sunday, August 28 briefing in which the force of Katrina was described. Yet the events of the hours and days following Katrina’s landfall at 6:10 a.m. CDT Monday the 29th, suggest that either the message had not been understood or procedural requirements of DHS were getting in the way of action.

Director Brown

While FEMA director Michael Brown said “That Category 4 hurricane [Katrina] caused the same kind of damage that we anticipated. So we planned for it two years ago. Last year, we exercised it. And unfortunately this year, we’re implementing it,” the reality was that if FEMA had developed a plan out of the Pam exercise there was no evidence of it on the ground.⁶⁰ By Monday the 29th, FEMA had only mobilized seven of its Urban Search and Rescue task forces and they were deployed across Louisiana, Alabama,

58. There has been some discussion if Nagin’s mandatory evacuation order was triggered by a call from the President. The President did call Governor Blanco on Sunday morning, but he reached her just as she was to join Nagin before the cameras to announce the evacuation was mandatory. FEMA Director Michael Brown says that he asked the President to call Nagin because Brown was worried that Nagin wasn’t taking the situation seriously. However, the President didn’t call Nagin and Brown seems unaware that Nagin was about to go on air to issue his evacuation order. David D. Kirkpatrick and Scott Shane, “Ex-FEMA Chief Tells of Frustration and Chaos,” *New York Times*, September 15, 2005.

59. Texas apparently has a staggered plan, but there was little evidence that it was followed in the press coverage of the Rita evacuation. The *Washington Post* reported on Saturday the 24th that one resident of Galveston gave up after going 60 miles in 17 hours.

60. Said on Larry King Live, CNN, August 31, 2005.

Florida and Mississippi. The Hurricane Pam exercise projected over 60,000 would be killed in and around New Orleans and tens of thousands would need rescuing. And Pam was assuming a Category 3, not the potential Category 5 hurricane that Mayfield had briefed Brown and Chertoff and President Bush on. In light of this, seven teams across four states seems wholly inadequate when the Director had 28 teams he could draw upon.⁶¹

Reports about activity at FEMA's National Emergency Operations Center confirm the image of an emergency agency that was not preparing for a major disaster. The weekend prior to Katrina's landfall, a career FEMA staffer, Leo Bosner, said that the resources being mobilized were "really not quite enough for" a Category 4 storm. He said, "We came in Saturday night (to the Center) and nothing much had happened. You know, we had a few medical teams, a few search teams were in place, but there was no massive effort we could see.... There was no massive mobilization of national resources." On Sunday morning Bosner reports that, "Nobody was mobilizing extra National Guard troops or organizing buses to help evacuate New Orleans." The reporter notes that at one point Bosner looked around the Center and could count just 12 people. On Tuesday morning when he came to work, Bosner reported that there were 70 people working phones and scrambling to organize relief. The reporter notes, "Bosner says they were two days behind where they should have been, and it's been a struggle for the agency ever since."⁶²

As the former senior staffer at FEMA, Jane Bullock, said of the pre-strike preparations of FEMA, "I think this disaster is about a failed system and failed leadership at the federal level.... Once the president declares the disaster, FEMA is in charge, working in coordination with state and local governments.... Nobody pulled the trigger on the resources. The director of FEMA didn't pull the trigger. The Department of Homeland Security didn't pull the trigger."⁶³

After his resignation, Brown told the New York *Times* that he told the White House staff (Card or Hagin - he did not recall which one) and Secretary Chertoff that on the 29th, "I can't get a unified command established." He told the *Times* he delivered this message to his superiors in Washington a dozen times.⁶⁴ That would seem to suggest that Mr. Brown was stuck on page 14 of the National Incident Management System which goes on at great length regarding the advantages that come with establishing a unified command system.

61. There are 28 teams: one from Arizona; eight from California; one from Colorado; two from Florida; two from Virginia, and one each from Indiana, Maryland, Massachusetts, Missouri, Nebraska, Nevada, New Mexico, New York, Ohio, Pennsylvania, Tennessee, Texas, Utah and Washington State.

62. Steve Inskeep, National Public Radio, September 2005.

63. Bullock appeared on "Hardball with Chris Mathews," MSNBC, September 12, 2005.

64. David D. Kirkpatrick and Scott Shane, "Ex-FEMA Chief Tells of Frustration and Chaos," New York *Times*, September 15, 2005.

However, the Catastrophic Incident Annex of the National Response Plan says that planning assumptions for such an incident should include an understanding that local jurisdictions may be overwhelmed, that a detailed operating picture may not be available up to 48 hours after an incident, so activities must begin absent complete situation and critical needs assessments, and (most appropriately to the Katrina aftermath) “Federal support must be provided in a timely manner to save lives, prevent human suffering, and mitigate severe damage. This may require mobilizing and deploying assets before they are requested via normal NRP protocols.⁶⁵” In sum, the field direction in the NRP is that FEMA should not wait to do what needs to be done to save lives and protect property. The Coast Guard seems to have gotten this signal, but FEMA management missed it.⁶⁶

Here Brown seems to have trapped himself on the process laid out in NIMS rather than the operational guidance provided in NPR. But then the two documents tend to point in different directions on some issues and the director in the field, in this case Brown, has to choose what direction to go in. In a moment where “things were going to hell in a handbasket,” as Brown asserted they were in Louisiana, the State and local officials are trusting the Federal representative to be the steadying force with a prejudice for action in a crisis.⁶⁷ This is a function of leadership.

Caution and an overly bureaucratic culture seems to have been a hallmark of FEMA responses in the aftermath of Katrina. An endless string of stories of supplies not getting to victims due to lack of paperwork and of assistance turned away due to lack of authorization has come out of this disaster response. Just on September 21, a second story emerged about a doctor at the Louis Armstrong International Airport being told he could not treat patients in need of medical care because he was not a “credentialed FEMA physician.” FEMA has its own National Disaster Medical Teams (NDMT). The Airport was being used as a staging ground for evacuees from New Orleans’ medical centers before they were flown out. However, none of the NDMT’s seemed to be at the airport and qualified professional medical personal were told they would not be allowed to treat those patients. According to Dr. Perlmutter’s story, two patients died on the tarmac in front of him.⁶⁸ He was barred from acting.

Despite having NIMS, NPR, UTL, TCL and who knows what else at hand, the best guidance an emergency manager can have for dealing with a particular crisis would be a specific list of action steps that must be executed for the specific situation being faced. Theoretically, the Hurricane Pam exercise should have produced a clear list of what

65. NRP, p. CAT-3.

66. The Coast Guard reported it had conducted 4000 evacuations by September 2, 2005.

67. Kirkpatrick and Shane, “Ex-FEMA Chief”.

68. Laurie Smith Anderson, “Doctor Says FEMA Ordered Him to Stop Treating Hurricane Victims,” *Baton Rouge Advocate*, September 21, 2005. “Leadership Vacuum Stymied Aid Offers,” CNN, September 17, 2005.

needed to be pre-positioned and moved into the theater of operation as soon as the winds died down. Instead, Brown, and perhaps all of FEMA, looked to local officials to produce detailed lists of what they wanted and apparently relied on the general guidance in the NRP and NIMS as he attempted to lead the Federal Government's response into the biggest post-storm recovery effort in American history.

Even a cursory study of the Hurricane Pam exercise should have led FEMA officials to begin arranging for over 1000 buses before the storm hit. It was obvious that they would need a massive number of search and rescue teams, even more than exist in the Federal Urban S&R system.⁶⁹ Those teams should have been positioned Sunday night and into Monday. Road clearing crews and fuel trucks needed to be pre-positioned. Shelter, medical care, food and water to provide for hundreds of thousands of refugees needed to be arranged. All of this should have begun no later than Sunday afternoon (and probably Saturday afternoon). Apparently, this effort did not begin in earnest until sometime late Tuesday or even Wednesday evening. None of this should require a 400-page report on an exercise to figure out. For FEMA to need local officials - who are without reliable information and communications, and who face their own personal losses on top of their civic obligations - to tell them of these obvious needs before FEMA acts is difficult to comprehend.

Brown does suggest in the *Times* article that when he did get a detailed list of what Louisiana wanted on Tuesday the 30th, he passed that to his operations officer, but then nothing was done to locate buses, mobilize National Guard in other states or bring in additional helicopters for search and rescue operations. Brown doesn't appear to have been a very forceful leader, but inaction by his staff even after they have a list of deliverables is even more inexplicable than the failure to be proactive.

Secretary Chertoff

The person in charge of America's frontline Department for securing the homeland was unaware for almost 36 hours that one of America's major cities was flooded. Despite the NWS notice at 8:14 a.m. Monday the 29th that the levees had been breached, Secretary Chertoff remained unaware that New Orleans levees had breached and the city was flooded until Tuesday afternoon on the 30th.⁷⁰ He kept his scheduled trip

69. Some parts of FEMA were working more efficiently than others. The External Affairs function made an urgent call for firefighters to do community relations work. Those that volunteered mustered out with their rescue equipment and were frustrated to find they would not be rescuing trapped survivors, but training in community relations work. While there was nothing wrong with FEMA's call, the prioritization of tasks seems a little askew. And the FEMA spokesperson showed no sensitivity for the frustrations of the firefighters: "I would go back and ask the firefighter to revisit his commitment to FEMA, to firefighting and to the citizens of this country." Lisa Rosetta, "Frustrated: Fire Crews to Hand Out Fliers for FEMA," Salt Lake *Tribune*, September 12, 2005.

70. Mayor Nagin reported this on national television Monday morning in an interview on the NBC Today Show. The *Times-Picayune* on-line edition reported this as well at 2 p.m. CDT. Michael Brown seems to

Tuesday morning to Atlanta to receive a briefing on Avian Influenza (which is a public danger worth tending to, but not while New Orleans was being inundated) and it was only when his visit to the Centers for Disease Control was done that he was notified that New Orleans had not “dodged a bullet.”

For that was his story regarding why he failed to declare Katrina an “Incident of National Significance” as defined in the National Response Plan until late Tuesday the 30th. There is speculation that this tardy designation played some role in the slow Federal response to the situation in New Orleans.⁷¹ However, we are still trying to determine what legal authorities flowed to FEMA head Brown after this designation that the President had not already entrusted to Brown through his emergency designation letter of Saturday, August 27. On the other hand, if the designation is irrelevant, what is the point of the exercise for Chertoff? Why make the designation if it doesn’t matter in any meaningful sense? It is notable that, according to FEMA Acting Director Paulison, the Secretary has made this designation prior to landfall of Ophelia in North Carolina and prior to landfall of Rita in Florida and Texas.⁷²

One has to wonder if Chertoff had forgotten the details of his own National Response Plan when Katrina was threatening Louisiana or whether he didn’t understand what sort of damage a Category 4 or 5 hurricane was expected to do to New Orleans. One condition or the other must obtain for him not to have already made the designation even before Katrina made landfall. Almost every condition defining a catastrophic incident of national significance discussed above was anticipated to flow from Katrina making landfall. One need not wait until Tuesday morning’s headlines to figure out what to do.⁷³

“I remember on Tuesday morning picking up newspapers and I saw headlines, “New Orleans Dodged the Bullet,”... (i)t was on Tuesday that the levee - may have been overnight Monday to Tuesday - that the levee started to break. And it was midday Tuesday that I became aware of the fact that there was no possibility of plugging the gap and that essentially

have understood the situation as he described flooding in a Monday evening interview with Aaron Brown on CNN.

71. Jonathan Landay, Allison Young and Shannon McCaffrey, “Chertoff Delayed Federal Response, Memo Shows,” Knight Ridder Newspapers, September 13, 2005. Landay, Young and Seth Borenstein, “As New Orleans Flooded, Chertoff Discussed Avian Flu in Atlanta,” Knight Ridder Newspapers, September 15, 2005.

72. This came out of a September 22 press conference with the Acting Director. It is probable that the Secretary expanded this designation to Louisiana as the Rita storm track moved East.

73. As was observed by Wonkette, “We’re wondering what newspapers the Chertoff household gets, because these are the headlines that greeted most people on Tuesday morning.” With that she reproduces 4 front pages from The New York *Times*, The Washington *Times*, The Washington *Post* and The *Times-Picayune*. The *Times-Picayune* displays a picture of two search and rescue team members pulling an elderly person from their home with water chest-high.

the lake was going to start to drain into the city.⁷⁴”

It is curious that neither FEMA headquarters, that produces the National Situation Update, nor DHS’s own situation report staff seem to have monitored the National Weather Service broadcasts out of New Orleans the morning that Katrina made landfall. The radio feed is available as streaming audio through the Weather Service and regular updates are also delivered via e-mail to those on NOAA’s list. NOAA had also mobilized its staff to support DHS. Yet, the FEMA National Situation Update doesn’t mention flooding in New Orleans until Wednesday morning, August 31. We do not currently have the DHS situation reports, but they must not have reported on the flooding any sooner than Tuesday afternoon or the Secretary surely would have seen them.

The National Response Plan calls for NWS to provide an all-hazards service through the NOAA Weather Radio system both to keep the public informed and to keep emergency officials informed. Somehow emergency officials seem to have ignored their own guidance on paying attention to the National Weather Service. This seems to be another situation where those who were doing their job at the Weather Service were not being heeded by those who needed to know what the Weather Service knew. As a consequence, the August 29, 8:14 a.m. levee breaching warning from the Slidell Office left no ripple in the awareness of any official at FEMA or DHS.

But how can you explain the top official at the Department of Homeland Security not noticing that New Orleans had flooded for almost 36 hours after the waters had breached the flood walls? This seems impossible.

President Bush

In fact, if press reports are accurate, President Bush knew of the flooding approximately 12 hours before his Homeland Security Secretary. The *Washington Post* reported that the President knew of flooding in New Orleans by 5:00 a.m. PDT.⁷⁵ He decided to cut his vacation short at that point and fly back to Washington, but not immediately. He kept his California schedule, and then did not fly directly back to Washington on Tuesday afternoon the 30th. Instead, the President flew to Texas and spent one more night at his property there. A little over 500 miles away, 80% of New Orleans was estimated to lay underwater.

Even after returning to Washington Wednesday afternoon the 31st, his aides felt he was out of touch with what was happening in New Orleans. According to a *Newsweek* article, “(t)he reality, say several aides who did not wish to be quoted because it might

74. Chertoff comments on “Meet the Press,” NBC, September 4, 2005.

75. Susan Glasser and Michael Grunwald, “The Steady Buildup to a City’s Chaos,” *Washington Post*, September 11, 2005. Evan Thomas, “How Bush Blew It,” *Newsweek*, September 19, 2005.

displease the president, did not really sink in until Thursday night. Some White House staffers were watching the evening news and thought the president needed to see the horrific reports coming out of New Orleans. Counselor (Dan) Bartlett made up a DVD of the newscasts so Bush could see them in their entirety as he flew down to the Gulf Coast the next morning on Air Force One.⁷⁶”

Reporter Thomas continues: “How this could be - how the president of the United States could have even less “situational awareness”... than the average American about the worst natural disaster in a century - is one of the more perplexing and troubling chapters in a story that, despite moments of heroism and acts of great generosity, ranks as a national disgrace.⁷⁷”

It is hard to know how to explain this. What is odd is that there seems to have been some awareness on the part of Michael Brown of the situation on the ground in New Orleans by late Monday, at least as regards the flooding, but that is never communicated to Chertoff.⁷⁸ According to *Newsweek*, Andrew Card, Joe Hagin, Dan Bartlett and Scott McClellan all had some understanding of the situation because they conferred Tuesday morning about having the President cut short his vacation. Again, Chertoff doesn't know anything of a situation being discussed among the senior White House staff on Tuesday morning.

The lack of effective communication among top government officials regarding the dangerous situation in New Orleans is deeply disturbing. Michael Brown seems to have been correct to complain there was no unified command structure in place, but he was putting the onus on the wrong parties. The lack of unity that mattered in terms of an effective Federal response was in the chain of command between the President and the Secretary and Brown.

76. Thomas, “How Bush Blew It.” The timeline doesn't make a lot of sense. The article implies Bush finally “got it” Thursday night, but the DVD was burned for him to watch Friday morning on the flight to the region.

77. Thomas, “How Bush Blew It.”

78. Brown participates in a press briefing early the afternoon of the 29th with Governor Blanco and others in which the Governor says she still has unconfirmed reports of flooding and her Homeland Security chief says that a Guard unit in New Orleans was using boats to rescue people.

6. Conclusion

The response to Katrina is not a failure of anticipation. History, science and engineering studies all told us exactly what would happen if a major hurricane hit New Orleans. That knowledge had moved to the emergency management community and they had begun to try to think through the challenge of evacuating those they could and rescuing those they could not evacuate. FEMA was focused on New Orleans prior to 9/11 and seemed to return to it as an area of concern with the Hurricane Pam exercise.

Nor was the aftermath of Katrina a failure of intelligence. The National Hurricane Center and the National Weather Service performed with textbook precision in their efforts on Katrina. This is not an instance where we knew what could happen, but we couldn't see it coming. Rather, we knew what could happen, and we watched it unfold before our eyes. And the aftermath was terrible, if not as horrific as the planners for Hurricane Pam had assumed. But much of what did happen that was abominable was avoidable with a rapid response from the one level of government not floored by the power of the storm: the Federal Government.⁷⁹ Unfortunately, the Federal Government was slow off the mark.

This is not to say that thousands of women and men in Federal service weren't ready to act. The Coast Guard, for example, has received widespread praise for its search and rescue efforts. They were not the only agency that didn't just "lean forward," in the tough-talking parlance of the Bush team, they actually took a step and did something. These men and women did not fail their countrymen and they were not alone in their efforts.

However, it appears that those that hold the power to command did not always give timely direction to act, nor bring sufficient resources to bear for a timely intervention. It wasn't until Friday afternoon, five full days after Katrina touched down, that National Guard units from outside of Louisiana began to arrive in New Orleans in force. That is simply baffling. The only explanation is that those in command had turned their attention to other things while a city floundered and people died, many of them for lack of assistance that should have been there.

The planning efforts by DHS have produced endless documents, but no more secure a public. In fact, the public may be less safe now than before 9/11 due to the shift in attention away from meeting the known threats that endanger our communities in exchange for a narrow concentration on threats that are frightful, but unknown. This is not to say that preparing to stop terrorists or effectively respond should the unthinkable happen again are not priorities for the nation; but these efforts should not be pursued at

79. We do not make any case one way or the other regarding what more the local or State officials should have done in the hours leading up to Katrina. Given our authority, what we have focused on is the chain of Federal effort from prediction to response.

the expense of ignoring risks that we know we must face and that our science and technology often allow us to anticipate and prepare for. And the reality is that Katrina allowed the government more than two days to get ready. That time was squandered.

It is possible that FEMA - which has been through the turmoil of reorganization, moved towards giving State and local governments more responsibility even in devastating situations and lost many senior employees - cannot at present do better than it did. In response to criticism about the government's response to Katrina, Russ Knocke, Mr. Chertoff's spokesman, said, "We pushed absolutely everything we could, every employee, every asset, every effort, to save and sustain lives.⁸⁰" We fear he is telling the truth and that should frighten everyone.

The President has suggested in the last few days that perhaps we should put the military in charge of disaster response - a role that violates a long-standing tradition of leaving the military out of civil affairs beyond the support they can offer for search, rescue, medical services and resource transportation⁸¹. While this suggestion may ultimately be worth following, it is based on the total failure of the civilian leaders of civilian agencies to do their jobs properly. The military appears as an attractive option because the military retains a professional management system in its officer corps and non-commissioned officer system. It can act because it has people who know the routines that must be carried out under the circumstances they train for. The current civilian response system appears relatively ineffective, we suspect, because we were caught with untried plans and politicized leadership on the front lines. Another plan, another shake-up of who should do what, and asking the military to take on roles that it has never had before do not seem reasonable if simpler, less dramatic, solutions are available to us.

The Science Committee has authorized the expenditure of literally billions of dollars on the best weather information and prediction system in the world. We continually update it and expand its capabilities. Our nation faces the most volatile weather on the planet, and the investments in the weather capabilities housed in the National Oceanic and Atmospheric Administration are every bit as much an investment in national security as any acquisition of new plane or tank or carrier. All of that money and effort and knowledge is useless if the Nation's leaders lack the wisdom to simply pay attention while a storm bears down on an American city. If those who are responsible for securing America avert their gaze when our citizens most need help, how can any of us feel safe?

80. Kirkpatrick and Shane, "Ex-FEMA Chief Tells of Frustration."

81. "It is now clear that a challenge on this scale requires greater Federal authority and a broader role for the armed forces - the institution of our government most capable of massive logistical operations on a moment's notice." President Bush speech from New Orleans, September 15, 2005. "Military to Bush: "U.S. Needs Search-Rescue Plan," Associated Press, September 25, 2005.

Questions and Documents for Follow-up

There are many holes in this account that can only be filled through aggressive Congressional oversight with document requests, subpoenas and depositions of witnesses. The other alternative would be to establish a Non-Partisan Commission to investigate Katrina and report its findings to the Nation. This is not an exhaustive list, but a suggestive one. The following questions should be pursued.

What Storm Impact Information Was Communicated to Senior Government Officials?

1. What was said to Michael Brown, Secretary Chertoff and President Bush in the FEMA/HLT briefing of August 28? The Science Committee elicited testimony from Max Mayfield that largely replicated his briefing, but others also briefed these officials. What did they say? The transcripts or even tapes of this briefing should be made public.
2. What White House staff participated in the briefings of August 27 and August 28? Again, a transcript or tape for the 27th should be released.
3. Ms. Townsend took a call from Governor Blanco on Monday the 29th when the Governor could not reach the President; was Ms. Townsend among those involved in the prior teleconferences? This is especially important since the President has indicated that Ms. Townsend was to head the White House investigation into itself.
4. What were the DHS situation briefs to the Secretary saying about the storm track and then about after-effects such as flooding in New Orleans? What were the sources used in producing those briefs?
5. We have heard reports that Secretary Chertoff gets his daily briefs from DHS staff and they include weather information from Accuweather rather than NWS. Is this true?
6. Who told Chertoff of the New Orleans flooding and at what time?
7. Why was the President seemingly unaware of the disorganized Federal response and conditions in New Orleans until Thursday or Friday?
8. What communications occurred between Brown and Chertoff between August 27 and September 3 (when the Federal response finally began to ramp up)? Between Brown and Bush or Chertoff and Bush?

9. What role did the White House staff play in the period August 27 through September 3 in organizing a Federal response to Katrina?
10. Who at the White House was on the distribution list for the NOAA products out of the Homeland Security Operations Center (HSOC) or the Incident Command Center (ICC)?

What Was NWS Communicating to Other Federal Agencies During the Storm Event?

11. How effective is the NWS integration into the incident coordination process at DHS? There is absolutely no evidence that anyone at DHS headquarters had any knowledge of the Slidell levee breach warning.
12. How does DHS explain not following their own plan in terms of using NWS Weather Radio as a source for information?

What Hurricane Disaster Response Plans Existed and How Were They Followed?

13. Did FEMA have any kind of New Orleans specific hurricane preparation plan?
14. If they did have such a plan, when was it developed, what does it say and how well did they follow it?
15. If they did not have a plan specific for New Orleans, why not?
16. Why wasn't the Pam simulation completed? Why wasn't the report completed by the contractor? Did FEMA do no independent analysis of the Pam exercise prior to Katrina?
17. To what degree did FEMA/DHS and other responders attempt to adhere to the guidance in the various Bush Administration emergency response plans?
18. What sort of exercise should the Nation go through to evaluate how those response plans worked so that another Katrina response cannot happen?
19. Who from the White House staff participated or was briefed on the Hurricane Pam exercise?

What Were the Federal Barriers to Swift Deployment of Federal Assistance?

20. Did the flawed emergency declaration of August 27th from President Bush impact FEMA's preparations?
21. Did the tardy declaration of an "Incident of National Significance" by Secretary Chertoff have an impact on FEMA's preparations and response?
22. What sort of discussions occurred among senior FEMA staff and regional staff regarding the limits of their authority due to the President's flawed declaration and the Secretary's failure to declare a national incident?
23. Why does it appear that more National Guard were sent to Mississippi initially than to New Orleans? According to Chertoff's press statement of September 1, he claimed there were 2800 National Guard in New Orleans with 1400 expected the next day. At the same time, he said that there were 2700 National Guard in Mississippi with 6000 expected by the end of the day. Given the relative security issues and search and rescue issues in these areas, this seems like an odd distribution of resources.
24. Why isn't the role of the National Guard discussed with more rigor in the various emergency planning response documents produced by the Department of Homeland Security.

APPENDIX 1

9/9/05

NOAA National Hurricane Center (AN OFFICIAL NOAA WORK PRODUCT) Hurricane Katrina Forecast Timeline

TUESDAY, AUGUST 23, 2005

1600 CDT: Katrina forms as a Tropical Depression 12, near Nassau in the Bahamas. Tropical Depression 12 Advisory 1 issued: "A TROPICAL STORM OR HURRICANE WATCH MAY BE REQUIRED FOR PORTIONS OF SOUTHERN FLORIDA LATER TONIGHT."

WEDNESDAY, AUGUST 24, 2005

0400 CDT: The National Hurricane Center's 5-day forecast puts the projected path of Katrina in the southeast Gulf of Mexico (as the system is still a tropical depression in the central Bahamas).

0700 CDT: Katrina is elevated to a Tropical Storm.

1000 CDT: Tropical Storm Katrina Advisory 4 is issued: "...A TROPICAL STORM WARNING AND A HURRICANE WATCH HAVE BEEN ISSUED FOR THE SOUTHEAST FLORIDA COAST..."

THURSDAY, AUGUST 25, 2005

1430 CDT: Katrina is elevated to a Category 1 Hurricane.

1730 CDT: Katrina makes landfall in Florida as a Category 1 Hurricane.

WEDNESDAY/THURSDAY, AUGUST 24/25: Hurricane Liaison Team conference calls were conducted both days, and included Florida emergency managers, FEMA Headquarters (FEMA HQ), and Region IV.

FRIDAY, AUGUST 26, 2005

0200 CDT: Katrina entered the Gulf of Mexico as a Tropical Storm.

0400 CDT: Katrina is elevated to a Category 1 Hurricane.

1000 CDT: Hurricane Katrina Advisory Number 12 is issued: "KATRINA IS A CATEGORY ONE HURRICANE ON THE SAFFIR-SIMPSON SCALE. SOME STRENGTHENING IS FORECAST DURING THE NEXT 24 HOURS...AND KATRINA COULD BECOME A CATEGORY TWO HURRICANE ON SATURDAY."

1015 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

1030 CDT: Katrina is elevated to a Category 2 Hurricane. Hurricane Katrina Advisory Number 13 is issued: "...KATRINA RAPIDLY STRENGTHENING AS IT MOVES SLOWLY WESTWARD AWAY FROM SOUTH FLORIDA AND THE FLORIDA KEYS...KATRINA IS MOVING TOWARD THE WEST NEAR 7 MPH...AND THIS MOTION IS EXPECTED TO CONTINUE FOR THE NEXT 24 HOURS...RECENT REPORTS FROM AN AIR FORCE RESERVE UNIT HURRICANE HUNTER AIRCRAFT NOW INDICATE MAXIMUM SUSTAINED WINDS ARE NEAR 100 MPH...WITH HIGHER GUSTS. KATRINA IS NOW A CATEGORY TWO HURRICANE ON THE SAFFIR-SIMPSON SCALE. SOME STRENGTHENING IS FORECAST DURING THE NEXT 24 HOURS...AND KATRINA COULD BECOME A CATEGORY THREE OR MAJOR HURRICANE ON SATURDAY."

1100 CDT: Hurricane Liaison Team Coordination Video Conference with FEMA HQ, Region IV, FL, AL, and GA.

1600 CDT: Hurricane Katrina Discussion Number 14 is issued: "...THE MODELS HAVE SHIFTED SIGNIFICANTLY WESTWARD AND ARE NOW IN BETTER AGREEMENT. THIS HAS RESULTED IN THE OFFICIAL FORECAST TRACK BEING SHIFTED ABOUT 150 NMI WEST OF THE PREVIOUS TRACK...HOWEVER...PROJECTED LANDFALL IS STILL ABOUT 72 HOURS AWAY...SO FURTHER MODIFICATIONS IN THE FORECAST TRACK ARE POSSIBLE. KATRINA IS EXPECTED TO BE MOVING OVER THE GULF LOOP CURRENT AFTER 36 HOURS...WHICH WHEN COMBINED WITH DECREASING VERTICAL SHEAR...SHOULD ALLOW THE HURRICANE TO REACH CATEGORY FOUR STATUS BEFORE LANDFALL OCCURS."

1615 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

2200 CDT: Hurricane Katrina Discussion Number 15 is issued: "THE OFFICIAL FORECAST BRINGS THE CORE OF THE INTENSE HURRICANE OVER THE NORTH CENTRAL GULF OF MEXICO IN 48 HOURS OR SO. IT IS WORTH NOTING THAT THE GUIDANCE SPREAD HAS DECREASED AND MOST OF THE RELIABLE NUMERICAL MODEL TRACKS ARE NOW CLUSTERED BETWEEN THE EASTERN COAST OF LOUISIANA AND THE COAST OF MISSISSIPPI. THIS CLUSTERING INCREASES THE CONFIDENCE IN THE FORECAST."

SATURDAY, AUGUST 27, 2005

0400 CDT: Katrina is elevated to a Category 3 Hurricane. Hurricane Katrina Advisory Number 16 is issued: "KATRINA BECOMES A MAJOR HURRICANE WITH 115 MPH WINDS...SOME STRENGTHENING IS FORECAST DURING THE NEXT 24

HOURS...RECONNAISSANCE AIRCRAFT DATA AND SURFACE OBSERVATIONS INDICATE THAT KATRINA HAS BECOME A LARGER HURRICANE..." Hurricane Katrina Discussion Number 16 is issued: "DUE TO THE DECREASING SPREAD IN THE MODELS...THE CONFIDENCE IN THE FORECAST TRACK IS INCREASING."

1000 CDT: Hurricane Katrina Advisory Number 17 is issued: "A HURRICANE WATCH IS IN EFFECT FOR THE SOUTHEASTERN COAST OF LOUISIANA EAST OF MORGAN CITY TO THE MOUTH OF THE PEARL RIVER...INCLUDING METROPOLITAN NEW ORLEANS AND LAKE PONCHARTRAIN...A HURRICANE WATCH WILL LIKELY BE REQUIRED FOR OTHER PORTIONS OF THE NORTHERN GULF LATER TODAY OR TONIGHT. INTERESTS IN THIS AREA SHOULD MONITOR THE PROGRESS OF KATRINA...SOME STRENGTHENING IS FORECAST DURING THE NEXT 24 HOURS...AND KATRINA COULD BECOME A CATEGORY FOUR HURRICANE..." Hurricane Katrina Discussion Number 17 is issued: "...IT IS NOT OUT OF THE QUESTION THAT KATRINA COULD REACH CATEGORY 5 STATUS AT SOME POINT BEFORE LANDFALL..."

1015 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

1100 CDT: Hurricane Liaison Team Coordination Video Conference with FEMA HQ, Region IV and VI, FL, LA, MS, AL, and GA.

1600 CDT: Hurricane Katrina Advisory Number 18 is issued: "THE HURRICANE WATCH IS EXTENDED WESTWARD TO INTRACOASTAL CITY LOUISIANA AND EASTWARD TO THE FLORIDA-ALABAMA BORDER. A HURRICANE WATCH IS NOW IN EFFECT ALONG THE NORTHERN GULF COAST FROM INTRACOASTAL CITY TO THE ALABAMA-FLORIDA BORDER. A HURRICANE WARNING WILL LIKELY BE REQUIRED FOR PORTIONS OF THE NORTHERN GULF COAST LATER TONIGHT OR SUNDAY. INTERESTS IN THIS AREA SHOULD MONITOR THE PROGRESS OF KATRINA." Hurricane Katrina Discussion Number 18 is issued: "THE INTENSITY FORECAST WILL CALL FOR STRENGTHENING TO 125 KT AT LANDFALL...AND THERE REMAINS A CHANCE THAT KATRINA COULD BECOME A CATEGORY FIVE HURRICANE BEFORE LANDFALL."

1615 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

1925 CDT: Louisiana Gubernatorial Briefing: Max Mayfield, Director of NOAA's Tropical Prediction Center/National Hurricane Center provides a briefing to Kathleen Babineau Blanco.

1935 CDT: Max Mayfield, Director of NOAA's Tropical Prediction Center/National Hurricane Center provides a briefing to Bill Filter, Chief of Operations, Alabama Emergency Management Agency.

1945 CDT: Mississippi Gubernatorial Briefing: Max Mayfield, Director of NOAA's Tropical Prediction Center/National Hurricane Center provides a briefing to Haley Barbour.

2000 CDT: New Orleans Mayoral Briefing: Max Mayfield, Director of NOAA's Tropical

Predication Center/National Hurricane Center provides a briefing to Ray Nagin.

2200 CDT: Hurricane Katrina Advisory Number 19 is issued: "...DANGEROUS HURRICANE KATRINA THREATENS THE NORTH CENTRAL GULF COAST...A HURRICANE WARNING ISSUED...AT 10 PM CDT...0300Z...A HURRICANE WARNING HAS BEEN ISSUED FOR THE NORTH CENTRAL GULF COAST FROM MORGAN CITY LOUISIANA EASTWARD TO THE ALABAMA/FLORIDA BORDER...INCLUDING THE CITY OF NEW ORLEANS AND LAKE PONCHARTRAIN...PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION...COASTAL STORM SURGE FLOODING OF 15 TO 20 FEET ABOVE NORMAL TIDE LEVELS...LOCALLY AS HIGH AS 25 FEET ALONG WITH LARGE AND DANGEROUS BATTERING WAVES...CAN BE EXPECTED NEAR AND TO THE EAST OF WHERE THE CENTER MAKES LANDFALL...HEAVY RAINS FROM KATRINA SHOULD BEGIN TO AFFECT THE CENTRAL GULF COAST SUNDAY EVENING. RAINFALL TOTALS OF 5 TO 10 INCHES...WITH ISOLATED MAXIMUM AMOUNTS OF 15 INCHES...ARE POSSIBLE ALONG THE PATH OF KATRINA." Hurricane Katrina Discussion Number 19 is issued: "...DESPITE THESE CHANGES IN THE INNER CORE...THE BOTTOM LINE IS THAT KATRINA IS EXPECTED TO BE AN INTENSE AND DANGEROUS HURRICANE HEADING TOWARD THE NORTH CENTRAL GULF COAST...AND THIS HAS TO BE TAKEN VERY SERIOUSLY."

1500-2230 CDT: Media pool operated; TPC/NHC provided 12 television and 2 radio interviews. In addition, TPC/NHC participated in 51 telephone briefings or media contacts on August 27th.

SUNDAY, AUGUST 28, 2005

0040 CDT: Katrina is elevated to a Category 4 Hurricane.

0100 CDT: Hurricane Katrina Special Advisory Number 20 is issued: "...KATRINA STRENGTHENS TO CATEGORY FOUR WITH 145 MPH WINDS..."

0400 CDT: Hurricane Katrina Discussion Number 21 is issued: "THE SPREAD IN THE MODEL TRACKS ALONG THE NORTHERN GULF COAST IS AT MOST 90 MILES...SO CONFIDENCE IN THE OFFICIAL FORECAST IS RELATIVELY HIGH."

0615 CDT: Katrina is elevated to a Category 5 Hurricane.

0700 CDT: Hurricane Katrina Advisory Number 22 is issued: "...KATRINA...NOW A POTENTIALLY CATASTROPHIC CATEGORY FIVE HURRICANE...HEADED FOR THE NORTHERN GULF COAST...MAXIMUM SUSTAINED WINDS ARE NEAR 160 MPH...WITH HIGHER GUSTS. KATRINA IS A POTENTIALLY CATASTROPHIC CATEGORY FIVE HURRICANE ON THE SAFFIR-SIMPSON SCALE. SOME FLUCTUATIONS IN STRENGTH ARE LIKELY IN THE NEXT 24 HOURS."

1000 CDT: Hurricane Katrina Advisory Number 23 is issued: "...POTENTIALLY CATASTRPHIC HURRICANE KATRINA...EVEN STRONGER...HEADED FOR THE

NORTHERN GULF COAST...REPORTS FROM AN AIR FORCE HURRICANE HUNTER AIRCRAFT INDICATE THAT THE MAXIMUM SUSTAINED WINDS HAVE INCREASED TO NEAR 175 MPH...WITH HIGHER WIND GUSTS...HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 105 MILES FROM THE CENTER AND TROPICAL STORM FORCE WINDS EXTEND OUTWARDS UP TO 205 MILES...COASTAL STORM SURGE FLOODING OF 18 TO 22 FEET ABOVE NORMAL TIDE LEVELS...LOCALLY AS HIGH AS 28 FEET ALONG WITH LARGE AND DANGEROUS BATTERING WAVES...CAN BE EXPECTED NEAR AND TO THE EAST OF WHERE THE CENTER MAKES LANDFALL.” Hurricane Katrina Discussion Number 23 is issued: “...HURRICANE FORCE WINDS ARE FORECAST TO SPREAD AT LEAST 150 N MI INLAND ALONG PATH OF KATRINA. CONSULT INLAND WARNINGS ISSUED BY THE NATIONAL WEATHER SERVICE FORECAST OFFICES...”

1015 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

1100 CDT: Hurricane Liaison Team Coordination Video Conference with FEMA HQ, Region IV and VI, FL, LA, MS, AL, GA, TX.

1300 CDT: Hurricane Katrina Advisory Number 23A is issued: “...SIGNIFICANT STORM SURGE FLOODING WILL OCCUR ELSEWHERE ALONG THE CENTRAL AND NORTHEASTERN GULF OF MEXICO COAST.”

1600 CDT: Hurricane Katrina Advisory Number 24 is issued: “KATRINA IS MOVING TOWARD THE NORTHWEST NEAR 13 MPH...AND A GRADUAL TURN TO THE NORTH IS EXPECTED OVER THE NEXT 24 HOURS. ON THIS TRACK THE CENTER OF THE HURRICANE WILL BE NEAR THE NORTHERN GULF COAST EARLY MONDAY. HOWEVER...CONDITIONS ARE ALREADY BEGINNING TO DETERIORATE ALONG PORTIONS OF THE CENTRAL AND NORTHEASTERN GULF COASTS...AND WILL CONTINUE TO WORSEN THROUGH THE NIGHT...KATRINA IS A POTENTIALLY CATASTROPHIC CATEGORY FIVE HURRICANE ON THE SAFFIR-SIMPSON SCALE. SOME FLUCTUATIONS IN STRENGTH ARE LIKELY UNTIL LANDFALL. KATRINA IS EXPECTED TO MAKE LANDFALL AT CATEGORY FOUR OR FIVE INTENSITY. WINDS AFFECTING THE UPPER FLOORS OF HIGH-RISE BUILDINGS WILL BE SIGNIFICANTLY STRONGER THAN THOSE NEAR GROUND LEVEL...SOME LEVEES IN THE GREATER NEW ORLEANS AREA COULD BE OVERTOPPED.”

1615 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

2200 CDT: Hurricane Katrina Advisory Number 25 is issued: “A HURRICANE WARNING IS IN EFFECT FOR THE NORTH CENTRAL GULF COAST FROM MORGAN CITY LOUISIANA EASTWARD TO THE ALABAMA/FLORIDA BORDER...INCLUDING THE CITY OF NEW ORLEANS AND LAKE PONCHARTRAIN. PREPARATIONS TO PROTECT LIFE AND PROPERTY SHOULD BE RUSHED TO COMPLETION.”

MONDAY, AUGUST 29, 2005

0200 CDT: Hurricane Katrina is downgraded to a Category 4.

0400 CDT: Hurricane Katrina Advisory Number 26 is issued: "EXTREMELY DANGEROUS CATEGORY FOUR HURRICANE KATRINA MOVING NORTHWARD TOWARD SOUTHEASTERN LOUISIANA AND THE NORTHERN GULF COAST...SOME FLUCTUATIONS IN STRENGTH ARE LIKELY PRIOR TO LANDFALL...BUT KATRINA IS EXPECTED TO MAKE LANDFALL AS A CATEGORY FOUR HURRICANE."

0600 CDT: Hurricane Katrina Advisory Number 26A is issued: "KATRINA REMAINS A VERY LARGE HURRICANE. HURRICANE FORCE WINDS EXTEND OUTWARD UP TO 120 MILES FROM THE CENTER...AND TROPICAL STORM FORCE WINDS EXTEND OUTWARD UP TO 230 MILES."

0610 CDT: Hurricane Katrina makes landfall in southeastern Louisiana as a Category 4 hurricane.

0800 CDT: Hurricane Katrina Advisory Number 26B is issued: "...THE CENTER OF HURRICANE KATRINA WAS LOCATED...ABOUT 40 MILES SOUTHEAST OF NEW ORLEANS LOUISIANA AND ABOUT 65 MILES SOUTHWEST OF BILOXI MISSISSIPPI...MAXIMUM SUSTAINED WINDS ARE NEAR 135 MPH...WITH HIGHER GUSTS. KATRINA IS AN EXTREMELY DANGEROUS CATEGORY FOUR HURRICANE ON THE SAFFIR-SIMPSON SCALE. WEAKENING IS FORECAST AS THE CIRCULATION INTERACTS WITH LAND TODAY...COASTAL STORM SURGE FLOODING OF 18 TO 22 FEET ABOVE NORMAL TIDE LEVELS...ALONG WITH LARGE AND DANGEROUS BATTERING WAVES...CAN BE EXPECTED NEAR AND TO THE EAST OF THE CENTER. STORM SURGE FLOODING OF 10 TO 15 FEET...NEAR THE TOPS OF LEVEES...IS POSSIBLE IN THE GREATER NEW ORLEANS AREA. SIGNIFICANT STORM SURGE FLOODING WILL OCCUR ELSEWHERE ALONG THE CENTRAL AND NORTHEASTERN GULF OF MEXICO COAST."

1000 CDT: Hurricane Katrina makes a second landfall at the LA/MS border as a Category 3 hurricane.

1015 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

1100 CDT: Hurricane Liaison Team Coordination Video Conference with FEMA HQ, Region IV and VI, LA, MS, AL, FL, TX.

1615 CDT: Hurricane Liaison Team Coordination Audio Conference with FL.

TUESDAY, AUGUST 30, 2005

1000 CDT: Katrina is downgraded to a tropical depression with winds of 35 mph, 25 miles south of Clarksville, TN. The final TPC/NHC advisory is issued at this time; the Hydrometeorological Prediction Center assumes inland public advisories.

WEDNESDAY, AUGUST 31, 2005

2200 CDT: Hurricane Katrina has dissipated; remnants absorbed by a front in southeast Canada.

NOTES:

- Timeline highlights the major aspects of NOAA's Tropical Prediction Center/National Hurricane Center (TPC/NHC). All advisories (graphic and text) are available on the Katrina archive page: <http://www/nhc.noaa.gov/archive/2005/KATRINA/shtml?>
- Storm surge is a consistent concern and associated threat with any land-falling hurricane, especially a major hurricane.
- Hurricane Liaison Team Coordination calls included the state emergency management officials for the states listed; calls with the State of Florida included both local and state emergency management officials.
- For Katrina (including for Florida) NOAA's Tropical Prediction Center/National Hurricane Center provided a total of 471 television and radio interviews, through their media pool or via telephone.

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September 14, 2005

The Honorable George W. Bush
President of the United States of America
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Mr. President:

I write because of my committee's jurisdictional responsibilities over the National Oceanic and Atmospheric Administration (NOAA) and more specifically over the National Weather Service (NWS) and its National Hurricane Center (NHC).

According to press reports, Max Mayfield, director of the National Hurricane Center, personally briefed you on Sunday, August 28 about the impending landfall of Hurricane Katrina and its potential effects.

The oversight responsibilities of the Science Committee make it imperative that the committee fully understand the depth and substance of the communications between the NHC and your Administration. That understanding necessarily includes the details of your conversation with the NHC Director and any other conversations between senior White House staff and members of NOAA, including the NWS and its NHC.

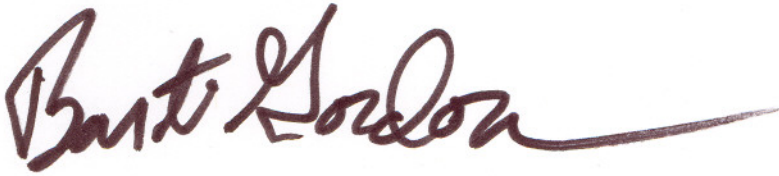
We request the following:

- 1) The full transcript of your Sunday, August 28, 2005 videoconference with NHC director Max Mayfield, including names and affiliations of all the parties who were involved either by physically attending the videoconference with you in Crawford or by other electronic means.
- 2) A list of all persons in the White House who were contacted by Max Mayfield, Brigadier General David Johnson (ret.), or Vice Admiral Conrad C. Lautenbacher, Jr. between August 23 and August 31, 2005 regarding Hurricane Katrina.
- 3) Where transcripts exist, transcripts of all conversations that took place between NOAA, NWS or NHC personnel and White House Advisors or staff.

Given the importance and magnitude of this tragedy, we trust that you will provide a prompt and full accounting concerning this chain of communication. As you may be

aware, on Wednesday, September 21, 2005, the full Science Committee will be holding a hearing on NOAA's hurricane forecasting. As such, we ask that you respond by the c.o.b. Tuesday, September 20, 2005.

If you have any questions regarding this letter, please contact my staff at (202) 225-4494.

A handwritten signature in dark ink that reads "Bart Gordon". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Sincerely,
Bart Gordon
Ranking Member
House of Representative
Committee on Science