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Press Briefing by Lieutenant General Carl Strock, Commander and Chief of Engineers, U.S. Army Corps of Engineers

James S. Brady Briefing Room

 [In Focus: Hurricane Recovery](#)

2:10 P.M. EST

MR. McCLELLAN: All right, good afternoon for round two. I'm pleased to be joined by General Strock of the Army Corps of Engineers. The President just participated in a briefing on the Katrina recovery and rebuilding efforts along the Gulf Coast region, and he heard from Secretary Chertoff on the debris removal efforts and the housing situation, as well as hearing from General Strock on the levee system and where we are. And he also heard from our federal coordinator, Don Powell, in terms of where we are on the longer-term recovery and rebuilding efforts in the region.

The President was very interested in hearing about where we are in terms of restoring the protection for our levee system ahead of next hurricane season, as well as where we are headed in terms of building that levee system better and stronger than before.

And with that, I'll just turn it over to General Strock and he'll give you an update that he gave to the President, as well. Thanks.

LIEUTENANT GENERAL STROCK: Good afternoon. As Mr. McClellan said, I'm Lieutenant General Carl Strock, and I'm the Chief of Engineers. As the President is going down to New Orleans this week, he wanted to get an update on where we are with restoration of the flood protection systems around the city. So what I'd like to do here today is just share with you what I shared with the President. I'd also like to address a couple of concerns that were raised this morning in the media about the quality of construction of the levees and potential vulnerabilities that exist as a result of the stress that was put on the system during Katrina.

In terms of damage to the system, I think you're all pretty familiar with the area down there, but there are about 350 miles of levee. And in the event, 169 miles were damaged or destroyed; 34 of the 71 pump stations in the city of New Orleans were also damaged in this event. So to date, we have restored about 100 of those 169 miles of levee, or about 45 percent of the levees have been restored to their pre-Katrina and authorized levels. About 85 percent of the pumping capacity has been restored to pre-Katrina.

And in the process of that, we've let almost 60 contracts; 91 percent of those have gone to local firms, for about \$770 million worth of work. So we see this not only as a way to help set the conditions for the physical recovery of New Orleans, but also to help create some economic opportunities for local businesses.

In terms of objectives, we're well on track to meet our 1 June commitment to have the flood protection system around New Orleans equal to or better than it was prior to Katrina. We will have all damaged levees and flood walls restored, and we will have it enhanced in the sense that we will put three temporary closures on the canals that

presented problems during Katrina. And those are shown up here -- the Canal at 17th Street, the Canal at Orleans, and the London Avenue Canal -- all of those will have closures so it will prevent the storm surge of a future event from getting into those what we think are vulnerable areas.

By September of '07, about a year later, we will have the entire flood protection system around the New Orleans area up to its full and authorized design levels. And I say that and make that distinction because pre-Katrina, some of the system was not at its full authorized design, so we'll complete the construction of that.

There are about five hurricane protection and flood protection systems in the New Orleans area. We've been focused on that up here in Lake Pontchartrain, but there's also a west bank and vicinity project here; there's a New Orleans to Venice project; there's a Larose to Golden Meadow; there's a Grand Aisle. There are a number of flood protection systems that we have now been authorized and have funding for to complete those by September of '07.

We also, by December of '07, will have concluded our study on what it will take to give the ultimate protection to New Orleans. It's been called a Category 5 protection level. We'll determine what the appropriate level -- make a recommendation on what that should be. But that study should be concluded by December of '07, and we'll have a good sense of where we need to go in the future.

I'd also like to briefly mention the fact that before Congress today, the President has a supplemental request for about \$1.5 billion in enhancements to the system, which will be put into place if Congress approves and authorizes in the next four or five years. And these include permanent closures of the outfall gates, where the temporary ones now will not have the full capacity to handle the pumping out of the city, but these permanent ones will.

We are looking at navigable flood control structures that will isolate the Inner Harbor -- the area that overtopped and caused all the damage in the 9th Ward -- we will isolate that through a couple of navigation gates that will close in the event of storm surges. We will armor certain portions of the levee as are appropriate.

We will also storm-proof the pumping stations. We'll raise the electrical works up above flood level so they can operate during periods of flood. They're currently not designed to do that because the assumption was, if the levees would hold, and these pump stations are mainly there to pump rain water out of the city. We will also incorporate certain segments of the non-federal levees into the federal system, particularly down in Plaquemines Parish. And finally, we will do about \$100 million of investment in the wetlands to try to stabilize some of the wetlands lost down there, which provide some protection against a storm surge and serves as a buffer against these hurricanes.

In addition to this work, we have our ongoing interagency performance evaluation team that is looking into the causes of the levee failure so that we can learn from those and incorporate those into our work. And that team is on the verge of producing a second report later this week, which will give us some indications of where we need to go.

Now, to take on some of the allegations in the press this morning about standards of construction, quality of materials, and then the remaining vulnerabilities, I'd just like to make the statement that we are using the right kind of materials. There's no question about that; we are using the right material and we're putting it down in the right way. We're giving tremendous scrutiny into not only how we do this, but also into the results after the fact. So we're doing extensive testing of the in-place structures to ensure that they are up to standard.

There was concern raised about the vulnerability of the system, and it's mainly associated with the flood walls that are in the vicinity of New Orleans. We have 28 miles of flood walls in this 350-mile system. About 11 miles of that flood wall is inside those canals that were breached during the last event, so we're going to take those out of the equation by closing down those canals. But there are flood walls remaining. About 80 percent of those flood walls are what we call I-walls. These are walls on top of levees founded on sheetpile walls that serve both as a cutoff and as structural support. And about 20 percent are T-walls, which are more robust, stronger flood walls, that are founded on the same sheetwall, but have pile foundations that support them and give them added stability. And they also have a spread-footer base which gives it much more structural stability.

Over time I think we'll be replacing these I-walls with T-walls in most parts of the system, and we're in the process now of determining that. The question really is, of the I-walls that were not destroyed in the event, are they

structurally stable? We are in the process now of doing those evaluations, and we'll have a 100-percent review of those I-walls. And where there are risk and vulnerabilities, we'll make sure we communicate the level of risk to those people behind those walls so they can make the right kind of decisions. And we'll also take what action we can take to stabilize those walls if we feel like that's feasible to do in the time between now and the hurricane season.

Let me close by just expressing again our commitment to the safety of the people of New Orleans. It is a two-step effort. General Bob Crear, who commands the Mississippi Valley Division, announced early after the event that we were at D-plus whatever day it was, and he did that so that our people would understand the urgency that so many days have passed since the event and we've got to do all we can to help people recover from that event. So we've been tracking D-Day as we're moving ahead to make sure we're doing things as quickly and as effectively as we can.

About two weeks ago, General Crear announced it is now H minus 100 -- and what does that mean? It means it's 100 days before the next hurricane season starts on the 1st of June. So in addition to working very hard to help the people recover from the last event, we're also now focused on preparation for the potential for the next hurricane to strike the city. So the people of the Corps of Engineers and our partners down there in the area are working very hard to ensure that we reduce the vulnerabilities to the people to the very highest degree we can, and that any remaining vulnerabilities are clearly understood by the people as they make decisions on when and how to reoccupy the city.

With that, I'll be happy to take any questions you have.

Q You're saying that your system should prevent waters from getting into vulnerable areas. And as you're saying that, city officials still have not determined whether they're going to rebuild in the low-lying areas, or just take everything to the higher elevations. Do you feel that what you're doing with the levee system will, indeed, allow people to go back into the low-lying areas, to be safe and comfortable there, versus moving into the higher elevations?

LIEUTENANT GENERAL STROCK: It depends on what part of the system you're talking about. This 350 miles of levee has about 13 different cells. And if we are to have another Katrina-like event, I think I can say with a high level of confidence, you wouldn't see the catastrophic flooding that we saw in the first event, which resulted from the failure of these flood walls, because we have taken them out of the equation now.

You would see overtopping, though, of levees. You would see flooding in low-lying areas -- for a couple of reasons. One is, the storm surge associated with Katrina simply was higher than what the levees were designed against. So you will see overtopping of the levees and some water in the city. We're working with the city to help them understand where we see -- what areas of the city we see as most vulnerable.

The second is, that as we close off those canals, we will impede the city's ability to move the rainwater out of the system, so you may have areas of flooding due to internal drainage problems that result from the fact that as we rebuild the -- as we close these canals, we're putting interim structures in right now with smaller capacity pump stations here.

At the head of these canals, you have very large capacity pump stations. So for example, 17th Street has about a 10,500-gallon -- cubic feet per second rate of capacity. The pumps we'll put in here will have about 3,000 cubic feet per second. So the city won't be able to pump as much water into these canals as they normally would. So that will cause some interior flooding as a result of rainwater, potentially.

Q So to follow up, so what you're saying is, no matter what, there will still be some flooding in low-lying areas? And with your expertise, then, what that statement said, are you suggesting or recommending that there will be no more building in the lower levels and just higher elevations?

LIEUTENANT GENERAL STROCK: No, those decisions are local decisions. We simply try to present to the locals the areas of risk and what could occur in the various scenarios. So then it's up to them to decide what to do.

And then we'll support that in any way we can.

Q General Strock, can you make it clear this -- the reduction in pumping capacity of these pumping stations, are they all going to be reduced to a third of what they were before? I don't understand the reasoning for that. Or is it just this particular one?

LIEUTENANT GENERAL STROCK: It is -- it's just that particular one. I gave you the worst case. The others are similar. Each of these canals will have a capacity of around 3,000 -- it's about 2,600, I think is the specific number -- when we close these structures. And that really has to do with our ability to, in this short of time, to get the massive pumping capacity in there in that short of time. So it's about the best we can do.

Q -- in the future, though?

LIEUTENANT GENERAL STROCK: Oh yes, absolutely. In the future, one of those enhancements, when we go to a permanent solution, will be to replace those interim structures with pump stations that have increased -- actually increase capacity over what's there now. So in four or five years, we will be able to handle this, no problem at all.

Now, this is not an insurmountable problem. In fact, the President of Jefferson Parish has already approached us and suggested ways that, with some assistance, they could mitigate this problem by moving the water elsewhere and not into the 17th Street canal.

You asked about the other canals. One canal has a current pumping capacity of about 4,200 cubic feet per second, and this will be 2,600. And the other is about the same. It's about 2,600 and 2,200, I think. So the most significant problem will be in the 17th Street Canal.

Q In the Katrina event, there was a lot of question about whether there was overtopping or a breach, and there's been a lot of discussion about when it was determined that it had actually been breached. Is there anything in the way these will be rebuilt that -- in terms of the greater technology available today, or in how people are trained, that would make it easier to discern if it was overtopping or a breach in a future problem?

LIEUTENANT GENERAL STROCK: We face a couple of problems there. First of all, the city was evacuated, so there weren't many witnesses around who could really tell us what went on. And we see a wide variance of people and what they think they saw and what apparently actually happened.

The other is the -- is sensors that we have to monitor the impacts of these storms. Most of those sensors were destroyed due to the magnitude of this event. So we don't have a good scientific record of what actually occurred. We have pieced that record back together in our -- our performance evaluation team. One of their charters was to describe the storm that struck this structure, and then the other was to describe the structures that were in place, and then to judge whether or not they were properly designed to handle that level of storm.

There were areas that were overtopped. Clearly, the levees up in St. Bernard, which were earthen levees, were clearly overtopped -- these levees out here. And these were -- the surge coming in off of Lake Borne. So those were clearly overtopped.

The Inner Harbor was also overtopped, and this was a -- because of very high levels of surge that resulted from waters coming in off of Lake Borne through the Gulf Intercoastal Waterway, and the Mississippi River Gulf Outlet, and then up through Lake Pontchartrain. So we have very high levels here, and clearly, the inner harbor flood walls were overtopped. The flood walls in the canals, though, were not overtopped and failed through a different mechanism.

Q Sir, what was the President's reaction to your report? Was he satisfied with the timetable and the progress? Or did he raise any concerns?

LIEUTENANT GENERAL STROCK: He did not express satisfaction or concern. He expressed appreciation for what we're doing, that he -- we are meeting the commitments he made to make it equal to or better than it was pre-

Katrina by the 1st of June, and then ultimate, to make a better and stronger system. He expressed confidence that we're doing that. So I think that he is comfortable with where we are.

Q The studies, as I understand it that you're reacting to, one of the things that they were talking about were the sands that were brought in to rebuild the sections of breached levees, and that they did not feel -- I understand you're saying you are convinced that that's adequate. They don't think so. Do they not see the right things? Are you disagreeing over the nature of what was actually put down?

LIEUTENANT GENERAL STROCK: We have not spoken with them directly about their finding, which is one of our frustrations. We don't know exactly where they took the samples, and we haven't seen the results of the lab. So we would -- we're asking them to provide that to us.

Anecdotally, I was told that some who escorted some of these people out there took samples of areas of soil that had been rejected for incorporation into the levees. So if you took the wrong soil, then you'll reach wrong conclusions. We're actually importing a great quantity of material from Mississippi because there are not suitable soils sufficient in the area, so we are trucking clays in from Mississippi that meet our standards and specifications. So I'm looking forward to having that discussion with those who have reached these conclusions because, clearly, no one wants to know better -- more than we do about any quality concerns that people might have about these levees.

Q But you've been testing what you've been putting down and you're satisfied with the --

LIEUTENANT GENERAL STROCK: Yes. Yes.

Q Can you talk about the 28 miles of flood walls? You said that 80 percent of them are these I-walls, which are not as structurally sound as the T-walls. And the question is, those that aren't destroyed, are they stable? When will you determine whether or not they're stable, and how risky is that going to be to the citizens in the coming hurricane season if they are not?

LIEUTENANT GENERAL STROCK: Well, I don't have a specific time line on when we're doing that. The process is ongoing right now. Certainly, we must do that by the beginning of next hurricane season when people face decisions. That's when they really must know what level of vulnerability there is. I don't know the specifics on when we're getting back. That process is ongoing now.

Part of that process is informed by the results of our evaluation team. As I mentioned, later this week we're sitting down with the American Society of Civil Engineers to share with them the conclusions we've drawn, and some of those conclusions have to do with the performance of these I-walls. So we are right at the process of really, we think, understanding what occurred there. So understanding what occurred in the failed sections will allow us then to go and look for similar indicators on those sections that did not fail.

So the true understanding of what occurred, if the American Society of Civil Engineers validates our findings, is just beginning to come forward now. And until we really understand that, we can't make the right kind of calls on the remaining flood walls.

But I can tell you that the areas where those flood walls are I think are relatively safe. Eleven miles of those flood walls are here. There's a section on Jefferson Parish which is significant -- we don't see that that would be directly impacted. And then there appear to be small sections of I-wall that are where the flood -- where the pumping stations are. So we'll take each one of those and analyze them as discrete elements of the system and ensure that the local people understand the vulnerabilities.

MR. McCLELLAN: Thank you, General.

LIEUTENANT GENERAL STROCK: Thank you very much.

END 2:29 P.M. EST