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of Engineers
Mississippi Valley Division



Corps Hurricane Response

Task Force Hope Status Report Newsletter

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Corps showcases HSDRRS construction progress

Fifth Anniversary of Hurricane Katrina brings news media from around the world to view HSDRRS progress

By Susan Spaht

In the days leading up to the Fifth Anniversary of Hurricane Katrina, news media from around the world descended on New Orleans to see firsthand, and report on, the progress that has been made since the storm.

News crews from Europe, Canada, South America, the Middle East and the Netherlands, and national media from California to New York came to Louisiana. They visited Hurricane and Storm Damage Risk Reduction System project sites and interviewed Corps leadership and project managers to get the full story.

"We are very proud to show off the tremendous amount of work that Team New Orleans has been able to accomplish over the past five years," said Karen Durham-Aguilera, Director of Task Force Hope.



Karen Durham-Aguilera (left), Director of Task Force Hope, gives an on-camera interview at the IHNC Surge Barrier wall.
USACE Photo by Scott Riecke

Below are some of the media's frequently-asked questions and the Corps' responses:

Q: If Hurricane Katrina were to hit the Greater New Orleans area today, would we be better off?

A. Katrina was one storm, one track. It was a nearly 400-year storm with a surge of as much as 32 feet along the Louisiana/Mississippi coasts. If we experience a Katrina-like storm this season along the same track, the hurricane system will be overtopped. Even when completed, the

system would be overtopped by a storm like Katrina. **But it will stand.** The features of the new system are being built with the strength and resiliency needed to stand up to overtopping from a **500-year storm.**

When Hurricane Gustav hit this area in 2008, the system held. And the system is even stronger today. We

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have pumps and closure gates at the outfall canals, and the barrier wall and barge gate at the IHNC at Lake Borgne. The levees and floodwalls along the lakefront are nearly at the 100-year elevations, and numerous other major features are in place.

The Greater New Orleans area has the best perimeter defense in its history, and we are still building.

Q. How would you compare the 2005 levee system with the one the Corps is building today?

A. We're not even in the same universe anymore. Five years ago we didn't know as much as we do today. We used to design to what we called the "maximum probable storm". The storm brought by Katrina was something that no one even imagined. It was a Category 3 at landfall, but the surge it brought was larger than anyone had even thought of.

Before Katrina, we designed for one storm based on history. Now we design for a suite of over 150 storms that have numerous tracks, anywhere from a 25-year to a 5,000-year frequency, and we take the effects of all those storms and the possible ways they could come on land, and then estimate the consequences of a storm that has a one percent risk of occurring in any given year.

So, there is no comparison of the previous system to the system we are designing and building today. It's dramatically different, and dramatically better.

Q. How is the new System better?



Driving steel pilings along Industrial Canal

A. The HSDRRS will include reinforced levees, stronger T-wall floodwalls, surge barriers, pump stations and floodgates that operate as a true system. These are all designed and being built with our new and more stringent design criteria, which is state-of-the-art. Pumping capabilities for internal drainage have been upgraded and strengthened. We are designing for a 50-year project life, accounting for sea level rise, climate change and subsidence. We factor all that in to our design criteria. Then we add for additional factors of safety to account for wave run-up - the wave surge that could overtop the system.

The new engineering criteria is applied to the borrow material – mandating a higher clay content in the dirt we use to build the levees.

The floodwalls are now supported by steel piles which can go down as much as 200 feet. We are building these massive surge barriers across

the Inner Harbor Navigation Canal on the east side of the river, and across the Gulf Intracoastal Waterway on the west side. All of that is new.

Also, in a couple of areas we've added stabilization techniques to the soil, like drainage blankets, which takes away some of the water in the soil so we can build on it. And deep-soil mixing, which adds concrete to the soil to provide a stronger base for levees.

These are just some of the ways that the new system is better.

Q. How will the Corps be able to complete such a tremendous effort – the HSDRRS – in such a short time period?

A. The Administration and Congress responded to the emergency situation here in Louisiana in 2005 and provided full funding *upfront* for this

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mission— a very unusual situation. Full funding enabled us to move forward on our system approach. We have also incorporated many innovative design and construction methods which have allowed us to save time and money, such as design-build, Early Contractor Involvement, advanced bulk-purchase of steel pilings, etc.

Q. As far as a completion date, when did Congress mandate that this be completed?

Congress did not mandate this date. The Corps of Engineers set an operational goal to have a system in place that will defend against a 100-year storm by June 2011. There are other parts of this program – additional work that will continue until the year 2014. But the bulk of the work that speaks to the 100-year system will be completed next summer.

Q. Is 100-year protection enough? Aren't the Dutch building a 10,000-year system?

A. We have a lot of people on our team from the Netherlands and we've done exchange programs with them as well. A couple of weeks ago, the system in the Netherlands was completed – and it took them 57 years. 57 years. So we're hoping to

beat their record by about 52 years.

The physical conditions in the Netherlands are different from the physical conditions in Louisiana. Here we have much stronger storms – our folks call them “bigger and meaner storms”, and that's a pretty good



Pump demonstration at 17th Street Canal

description. I'll give you a specific example. The Dutch have spent 57 years building a system to defend against a storm with a maximum surge height of 11 feet. 11 feet. Hurricane Gustav, which hit our area two years ago, had a surge of 12 feet. Hurricane Ike had a surge of 15 feet. So there's no comparison in the amount of surge that we deal with here along the Gulf Coast with that in the Netherlands.

Those types of conditions are what constitute the Netherlands' 10,000-year level of protection, but they don't have that same level of protection across the country. Here in the United States we have a national standard – right now it is 100-year.

Q. Will the pumps and gates at the three outfall canals work if we

have a hurricane this season?

A: Absolutely! The interim pumps and gates in place now performed as designed and needed during Hurricanes Gustav and Ike two years ago, and they will perform today.

Q: Some say the temporary pumps are rusting – is this a problem?

A: After Katrina, we knew we needed to install permanent pumps and closure gates at the mouths of those canals, and we knew that it would take some time to design and build the permanent structures. We decided to install interim pumps and closure structures before the start of the 2006 hurricane sea-

son to provide for public safety and provide 100-year level surge defense to that area. The temporary pumps at the outfall canals have a service life of five to seven years; they were never meant to be a permanent and sustainable solution. Plans for the permanent structures are ongoing with a scheduled completion of 2014.

Corps personnel regularly test and maintain the interim pumps to ensure their operational integrity. We will continue to maintain those pumps and keep them in proper working order until the permanent structures are completed.

Q: What about the walls of the outfall canals...will they hold if water fills up in them?



First of 11 pumps
lifted into place at
West Closure
Complex

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A: The Corps is currently finalizing a re-analysis of all the canal walls using more stringent criteria to determine the current Maximum Operating Water Level (MOWL) of each. The reports will be used to determine what improvements should be made to raise all the MOWs to 8 feet. Remediation methods could include driving sheet pile, deep soil mixing and/or adding material to existing berms. When the work is completed, we anticipate that all canal walls will have a MOWL of 8 feet, and that

each will hold all the rainwater the Sewerage & Water Board can pump at maximum output – now and in the future.

Q: When the HSDRRS is completed in 2011, who will operate and maintain the pumps and gates?

A. Current law provides that when the Corps of Engineers completes construction on the permanent pumps and gates at the outfall canals, they will be turned over to the State of Louisiana and their partners for operations and maintenance.

Q: Are Louisiana workers and businesses getting HSDRRS contracts?

A. Work on this system has produced more than 4,000 direct jobs - and counting. Louisiana-based businesses have received over \$5 billion in HSDRRS contracts. That's almost 63% of all contracts.

Over \$2 billion in contracts has been awarded to Small Businesses as the prime contractor and, of course, many more have received work as sub-contractors. Of those Small Business contracts, almost 30% were awarded to Louisiana-based companies.

The Corps is gratified to have so many contracts go to Louisiana companies – the people and businesses who were most affected by the 2005 hurricanes.

Q. Does the Corps have enough money to finish the HSDRRS?

A. Yes. Through continual and rigorous analysis, and careful program management, we have determined that the HSDRRS and the authorized work in the Southeast Louisiana (SELA) project can be executed within current funds. Reprogramming is necessary from time to time to assure the funds are in the right places at the right times.

The HSDRRS is being accomplished in a relatively short time, as nearly \$15 billion has been funded up front for this essential construction. In comparison, the Corps of Engineers' normal *national* civil works construction program is about \$2 billion annually.

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Installing wick drains, New Orleans East

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Q. Is the Corps choosing design and construction options based on the cost alone?

A. No. Our number one priority is public safety. Additionally, the Corps has a duty to be a steward of the taxpayer's money, and a professional project management and engineering responsibility to provide a safe workplace, to care for the environment, stay within budget, deliver on schedule, and maintain quality. Quality, schedule and budget are ALL important for public safety.

Q. What is the Corps planning to do about armoring the levees?

A. Floodwalls and transitions between floodwalls and levees are armored during initial construction; over 420 locations have been armored to date. The final levee lift must be completed before levees are

armored for resiliency. The Corps is testing a variety of armoring materials including grasses, turf reinforced mats and stabilized soils using the world's largest wave overtopping simulator at Colorado State University. Remaining armoring decisions – which armoring method to use at each location - will be made only after testing results are available. Different areas will call for different armoring methods.

Q. Why is the Corps using uncoated steel pilings in some cases rather than coated pilings? Won't uncoated pilings corrode?

A. Corrosion resistance is an important design component of all HSDRRS projects. The Corps uses several measures to inhibit or compensate for steel corrosion depending on project design and environmental factors, all of which are consistent with accepted engineering principles and practices of other fed-

eral and state agencies, and private industry. Using over-sized steel pilings is one of the industry's accepted solutions to compensate for possible corrosion.

Q: What do the people of the Greater New Orleans area think about the Corps' progress since Hurricane Katrina?

A: The Times-Picayune newspaper and the Kaiser Family Foundation each conducted surveys recently on that question. The Times-Picayune report showed that 65% of locals "see progress in the system." And the Kaiser survey found that 70% "agree that storm recovery is moving in the right direction." I think that tells the story.

But we're not done yet! We'll continue to drive hard to the finish to make things better for the citizens of Greater New Orleans.



An open letter to the men and women of Team New Orleans



from MG Michael Walsh



When I reflect on the incredible number of accomplishments that the Mississippi Valley Division's Task Force Hope and Team New Orleans have been involved with over the past five years since Hurricane Katrina, the first thought that comes to mind is our people. I am in awe that ordinary men and women can assemble from

everywhere and are willing to go anywhere to accomplish extraordinary and historic missions. You epitomize what is best about America.

In every time period, when faced with difficult challenges, the Corps has risen to the occasion. We are truly fortunate to have such dedicated and resourceful men and women in our service who are willing to sacrifice to build a better future for others.

When the Corps was called upon to help restore the Gulf Coast, our organization's determination, innovation, and *can do* spirit came to the forefront, and we have truly lived up to our motto: "Essayons – Let us try!"

Every time I visit New Orleans, I am honored to shake hands with all the members of our diverse team, many who have dedicated the past five years of their lives to reducing the risk of future flooding. Aside from the incredible work that is helping to reinvigorate the city, what struck me most was the sense of personal pride I saw in each of you in getting the job done right. The dozens of media reports covering the fifth anniversary seemed to highlight our focus on future possibilities rather than the past.

Thank you all for your dedication and for making history from circumstance by the strength of your character. Together, we are Building Strong!



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