



US Army Corps
of Engineers
Mississippi Valley Division



Corps Hurricane Response

Task Force Hope Status Report Newsletter

December 22, 2010

TFH Director heading to Washington, D.C.

Karen Durham-Aguilera
to be Director of
*Military Contingency
Operations &
Homeland Security*
at Corps Headquarters

by Susan Spaht

Karen Durham-Aguilera, SES, P.E., has served as Director of Task Force Hope since February 2007. She has overseen the \$14.6 billion Hurricane and Storm Damage Risk Reduction System work in New Orleans and South-east Louisiana. This massive program is the Corps of Engineers' number one domestic priority. In January, Ms. Durham-Aguilera will begin her next assignment as the Corps' Director of Military Contingency Operations and Homeland Security at Corps Headquarters in Washington, D.C.



Karen Durham-Aguilera, SES, P.E.

In her own words:

It has been an honor to serve as Director of Task Force Hope and work with so many dedicated, determined and talented people. That includes Corps employees, our contractors, our stakeholders and partners. This is a unique and vital mission for the Greater New Orleans area - and for the country.

As I move on to my new position at Corps Headquarters, I want to assure the citizens of New Orleans and our partners and stakeholders that the men and women of the Corps' Team New Orleans will continue in

their mission of delivering 100-year level risk reduction for the people of the Greater New Orleans area.

The Task Force Hope mission has set a new standard for the nation. Everything that we've learned here we will be applying around the country to continue progress of risk reduction from hurricane and storm surge.

As I reflect back on what's been achieved during this mission, I realize that what we've accomplished here is inordinate; it's incredible, and it's absolutely historic.

In the last five years, we've awarded almost 300 construction contracts, and that's not withstanding all the other ongoing efforts – from the research and development, to the labs, to the engineering services, to the efforts of academia, and on and on. It's been a shared responsibility and shared commitment with our partners and stakeholders. Things that we are doing here, technologies that

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we are developing and using, are precedent-setting. Engineers, academics and practitioners from all over the world are watching and learning from us.

Innovation

We are using many innovative techniques, processes and materials - some for the first time in a Corps Civil Works program. Using Design/Build and Early Contractor Involvement methods to design and construct many projects have enabled us to speed our progress. We are using silent pile drivers in some areas to lessen the noise of construction for residences near worksites.

We are using deep soil mixing to stabilize the soil, and sand blankets and wick drains to speed up consolidation of the foundations of levees in some areas.

We did about 30 value engineering studies. We did pile load tests in advance of awards so we could determine our pile lengths.

Throughout this whole program we've used *earned value*. That gives us a forward leaning indicator of where the contractor is supposed to be, and where we're supposed to be during the pace of work, and the opportunity to make positive adjustments.

We also went into the steel pile business. By purchasing steel piles in bulk at a time when the market price was low, we were able to hasten the contractor's purchase-to-jobsite process. They didn't have to stand in line and compete with each other for materials. We were able to save the

mission over \$50 million on the first contract alone. This is construction innovation at its best. And we are very proud of that.

We've also been very lucky over the past few years to enjoy a favorable bidding environment and good competition that gave us contracting firms that were ready and able to bid on this work.



Karen Durham-Aguilera inspects work at the IHNC Surge Barrier on a recent visit.

Public & Partnership Involvement

Our work has aided with the economic recovery of the area. We've awarded \$2.5 billion in direct Small Business contracts for this mission, of which over 60% went to locally-owned businesses. We calculate that about 4,000 jobs were created for the vast amount of work.

All of this was possible because of the commitment by the Administration and Congress to fully fund this effort so that we could first restore 220 miles of the system, put in the interim closure structures at the out-fall canals in early June 2006, and then progress to complete the entire 1% system.

There is a lot more work going on here besides the HSDRRS. There is SELA – the Southeast Louisiana

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Urban Flood Control Program in Jefferson and Orleans parishes. There are also the non-Federal levees in Plaquemines Parish that will be incorporated into the Federal system. The design of that work is underway. When the design is finished and the environmental requirements are met, we will get to the construction.

The 100-year perimeter system is about 98% design complete right now. Through "alternative arrangements" and over 500 public engagements and meetings, we have completed all the NEPA Individual Environmental Reports for the 100-year perimeter system. The only work we have remaining is the co-located work along the Mississippi River levees at Belle Chasse.

Another huge accomplishment that was due to a lot of work by CPRA, Pontchartrain/Orleans/Lake Borgne Basin and the East and West Levee Authorities is the real estate needs. That's the required Right of Entry to proceed with the work – anything from site investigation to the construction itself. There have been over 200 authorizations for entry granted. Over 200 – that's incredible! We have a lot of people to thank for that. We only have a few remaining ROEs left for the 100-year perimeter project, and that includes five upcoming contracts for the Mississippi River Levee co-located work, and a few projects in the West Bank & Vicinity.

Another major milestone was the accomplishment of the Project Partnership Agreements. Despite the level of Federal funding under the Civil Works program, we do need cost share agreements. Called Pro-

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ject Partnership Agreements, they are a legal requirement and necessary before the commencement of construction. Some were difficult, but we got through them; and now all major PPAs are signed, as are the 30-year cost share payback agreements. Our folks are now working together to set up the accounting system for the payments.

Another huge accomplishment has been External Peer Review. The Water Resources Development Act of 2007 made it a formal requirement, but we were already doing it. Why? We do it because we end up with a better solution. The extra time and effort leaves us far better off than if we were trying to do this by ourselves - especially with such a complicated, state-of-the-art mission.

Big Projects

The IHNC Surge Barrier at Lake Borgne is now about 78% complete. This is the largest project of its kind in the world. The first pile for this project was driven only last May. The West Closure Complex, the enormous project on the West Bank, is nearly 60% complete, and we only started it last August. This project will house the largest pump station in the world. We've done an incredible amount of work in a short period of time on both of these important projects.

The interim pumps and closures at the three outfall canals were installed in 2006. They were designed for an initial shelf life of five to seven years and all the components are exposed. From time to time, we pull the pumps and see evidence of corrosion, and



Karen Durham-Aguilera (center) poses for a photo after signing the Permanent Canal Closures & Pumps Project Partnership Agreement with, from left, Sewerage & Water Board Executive Director Marcia St. Martin, New Orleans District Commander Col. Alvin Lee, HPO Commander Col. Robert Sinkler, new Jefferson Parish President John Young, Jefferson Parish Councilman Tom Capella, S&WB President Pro Tem Tommie Vassel, LaCPRA Chairman Garret Graves, and SLFPA -East President Tim Doody. USACE Photo

that will increase with time. That is why we have been pressing really hard to get the permanent work in place.

With input from our partners and stakeholders, we were able to include "adaptable features" in the design so that, in the future, if other improvements are authorized and appropriated, we won't be facing a tear-out of the major work to the permanent pumps and structures.

Currently, we are in the middle of contract solicitation of the Design/Build contracts. We are on track to award that contract by spring. Construction will continue until 2014.

Repairs to all the parishes' pump stations are now complete, and storm proofing of the stations in Orleans and Jefferson parishes is ongoing – it's about one third finished.

Academia/Armoring

Team New Orleans has made heavy use of academia. Numerous universities across the country and other parts of the world have engaged with

us on design, research and development. One of the examples of this is armoring. Over 420 transition spots - where a levee meets a floodwall - have been armored or are in the process of being armored. We also have to do the armoring of earthen levees. Ongoing university and Corps research will help determine where and if additional measures may be needed to make levees more resilient to wave overtopping. The research and development effort is expected to be completed by the end of this calendar year, and additional armoring on completed earthen levees will begin in the summer after the final levee lifts are in place.

Levee Lifts

In the future, from time to time, especially in an area like this, we have to come back in and make sure the levees are still performing to the design capacity. In this case, that is going to mean additional levee lifts. At some point in the future there will need to be additional authority and

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appropriations to continue to add those lifts to make sure we continue to provide 100-year level of risk reduction. We can construct concrete structures, floodwalls, right now to account for sea level rise and subsidence over a 50-year project life, but for earthen levees we must come back from time to time to increase the height exponentially.

Challenges & Partnerships

The challenges for this program are unprecedented. We set ourselves a mandate to deliver this \$14.6 billion construction program on schedule. We set an ambitious goal of a mere five years – and we are driving hard to get there. There has been incredible scrutiny and new governances were established - the state, CPRA, new Levee Authorities. We formed new design criteria since Katrina, and we developed a programmatic cost estimate and acquired all the funding from Congress.

Then there is the challenge of reminding ourselves and others that we are delivering a comprehensive *system*, one that stretches across different levee districts, levee authorities and parishes, not to mention all the different physical components that make up this entire system.

To put this program in perspective: the Corps' national Civil Works program is around \$5.5 billion. The construction piece of that is about \$2 billion nationally. Yet this program was funded at \$14.6 billion. That gives an idea of the commitment and a perspective of what we've undertaken.

A few months ago, we validated the assumptions we made for that initial



After a successful Partnership Conference, Karen Durham-Aguilera (center) is shown with, from left, New Orleans District Commander Col. Alvin Lee, Deputy Chief of Engineers MG Merdith "Bo" Temple, Plaquemines Parish President Billy Nungesser, and LaCPRA Chairman Garret Graves. USACE Photo

programmatic cost estimate. And the good news is that we can execute this entire program within the current funding stream. In this day and age it is vital to be able to do that. It also means that, even though this program is being carried out as a system, the money was appropriated in "buckets", that is, we are not free to move money from one place to another without going back to Congress. So we have had to do re-programming from time to time to assure the right funds were in place at the right time.

Commitment

There is so much I could say about this program, but it really comes down to considerable commitment: commitment to providing a safe work place, commitment to public safety, to the environment, and commitment to quality, because it is the quality that lasts through time. It's forming a budget and having the commitment to carry out that federal investment. And, of course, quality also means the schedule commitments we made to citizens of Greater New Orleans and Southeast Louisiana.

When we talk about the system, the system is more than just the work. It's also the way we go about it. That's why the Corps put Task Force Hope and such a huge team on the ground, because the work was so big they knew we needed a big team. All the decisions we make that involve the system, also means the involvement of the partnerships and collaboration.

Science and engineering inform everything we do. If we can't back it up with rigorous science and engineering, then it's not the right thing to do. And we have been very diligent and careful in that regard.

The "resources" are not just the resources of the Corps of Engineers, research labs, the architect and engineering firms, all the construction firms, academia, our partners in the Netherlands, but it's also the partners and stakeholders here. Just as the system is a partnership of levees, floodwalls, gates and pump stations, it's all these features that stretch across all boundaries. Every-

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As Director of Task Force Hope, Karen Durham-Aguilera was quite often called on to speak to the media regarding the mission and particular projects. Here she fields questions from a TV film crew on site at the IHNC Surge Barrier.

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thing needs to work together because the system is also a partnership. It's a partnership and collaboration between local governments, state government and Federal government and all the stakeholders.

That's our duty and our shared responsibility. We make decisions considering the comprehensive system and that we ensure the best public safety of the citizens of the Greater New Orleans area and Southeast Louisiana.

The State, the levee authorities, the levee districts, the parishes, and all the people who have contributed – there is not a doubt in my mind, without those contributions we would not be where we are today.

A lot of work has been accomplished, but we're not done yet. It is my expectation that all our partners and stakeholders, all the Levee Authorities and the local and state governments will continue this commit-

ment, this partnership, and continue to work collaboratively to get this system finished. It's important for Louisiana, and it's important for our nation.

We are making history here.



Karen Durham-Aguilera, SES, P.E.
Director, Task Force Hope

Mike Park, Deputy Director, will become Chief of Task Force Hope when Karen Durham-Aguilera departs for Washington, D.C. Park has served as Deputy Director for the past two years, so the transition will be a smooth one for the mission.



Congratulations, Mr. Park.

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Seabrook Floodgate Structure *building fast, building strong*

By Nick Silbert

“We’re building the Seabrook Floodgate Structure, a massive floodgate complex, at the mouth of the Industrial Canal at Lake Pontchartrain to block storm surge from entering the heart of the city,” said Col. Robert Sinkler, Commander of the Corps’ Hurricane Protection Office. “The levees and floodwalls that previously served as the first line of defense against storm surge in the IHNC will now serve as the second line of defense.”



Col. Robert Sinkler

The Seabrook Floodgate Structure will consist of a sector gate and two vertical lift gates located approximately 540 feet south of the Senator Ted Hickey Bridge. Floodwalls on the east and west sides of the structure will tie into the rest of the Hurricane and Storm Damage Risk Reduction System (HSDRRS). During the final stage of construction, stone will be placed around the structure to further protect it from water and waves. The 100-year level of risk reduction will be attained in June 2011, though construction of additional features will continue for another six months.

When completed, this structure will work in tandem with the IHNC Surge Barrier at Lake Borgne to reduce the risk from a storm that has a one percent chance of occurring in any given year for some of the region’s most vulnerable areas, such as New



Pouring concrete for a Seabrook T-wall.



North cofferdam cell being filled with sand.

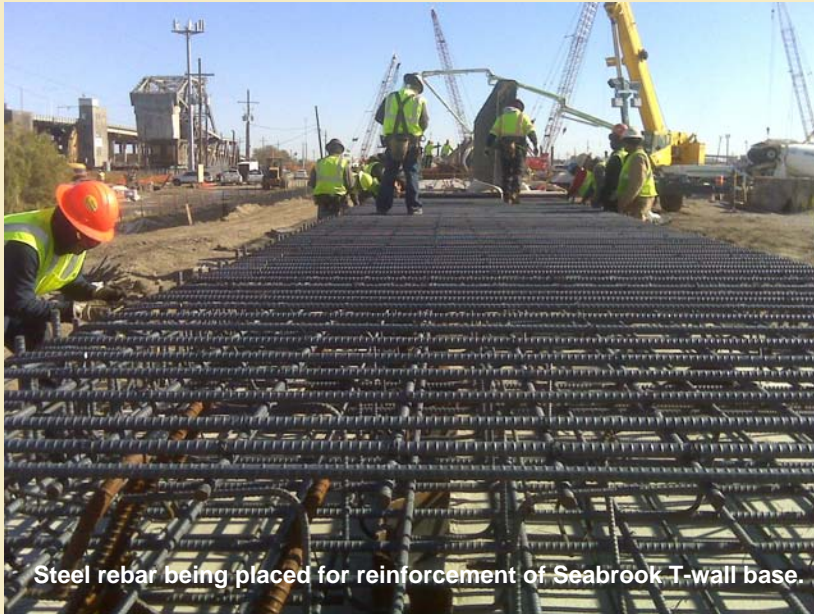
Orleans East, metro New Orleans, the Ninth Ward, Gentilly and St. Bernard Parish.

To provide 100-year risk reduction, the sector gate and adjacent vertical lift gates will be built to elevation +16 feet. The sector gate will have a 95-foot opening and the two vertical lift gates will have 50-foot openings. The vertical lift gates are being constructed to maintain the existing wa-

ter flow velocity through the channel since higher velocities would make navigation through the sector gate difficult and potentially unsafe. Navigation through the vertical lift gates will be prohibited.

The \$495,000 contract for “preconstruction services” of the Seabrook Floodgate Structure was

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Steel rebar being placed for reinforcement of Seabrook T-wall base.

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awarded to Alberici Constructors of St. Louis, Mo., in October 2009. The total scope of construction is expected to cost \$155 million.

Due to ongoing construction, the Inner Harbor Navigational Canal (IHNC) near Lake Pontchartrain was closed last fall to all marine traffic, and the channel will remain closed until the fall of 2011. The Corps of Engineers is working as quickly and efficiently as possible to reduce negative impacts to shipping and industry along the canal.

In September, Alberici began constructing a rock dike across the IHNC in the Seabrook area to reduce flow velocities in the channel. The reduced flows have allowed crews to fill the pre-existing scour hole with sand. The contractor is expediting the consolidation of sub-surface material via Vibro-Compaction, whereby long probes are inserted into the water and vibrate to rearrange loose sand grains into a more compact state so that the foundation of the structure remains stable.

In addition, installation of the northern perimeter of the cofferdam is underway.

The cofferdam, which will be completed in the spring of 2011, and the floodwall tie-ins on the east and west sides will provide 100-year-level risk reduction for the 2011 hurricane season.

The cofferdam at Seabrook will serve as the fourth Interim Closure Structure along the New Orleans lakefront. The Interim Closure Structures at the 17th Street, Orleans Avenue and London Avenue canals were completed prior to the 2006 hurricane season and will be replaced with permanent canal closures and pumps in 2014.

"We are committed to providing the 100-year-level of risk reduction for the people of greater New Orleans in 2011," said Col. Sinkler.

"The Seabrook Floodgate Structure will close the one remaining gap along the lakefront."



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