US Army Corps of Engineers
Mississippi Valley Division

Corps Hurricane Response

Task Force Hope Status Report Newsletter *December 1, 2010*

Sustainable Risk Reduction: *"Care and Feeding" of the Greater New Orleans Hurricane System Levees*

Progressive improvement of earthen levees is required to sustain 100-year level criteria

By Susan Spaht

In collaboration with its numerous partners, the U.S. Army Corps of Engineers is building the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS) to defend against surge from a 100-year storm, or a storm that has a 1% chance of occurring in any given year. Key features will be in place to enable the system to provide this defense in June 2011. Work will continue to complete the system as well as other features of work such as the permanent pumps and closures at the outfall canals, storm proofing of interior pump stations, and the levee improvements in Plaquemines Parish.

Due to firm commitment by the Administration and quick action by Congress, the HSDRRS was fully funded In the amount of $14.6 billion for design and construction. The 350 miles of levees and floodwalls and other components stretch across five parishes. The appropriated funds also included up-front financing of the State of Louisiana's cost share and enabled a 30-year payback agreement to begin after the system has been improved to the 100-year level.

Bulldozers push soil material up an earthen levee to build a new levee lift. Future levee lifts along the HSDRRS will be needed to maintain the authorized level of risk reduction. (USACE Photos)

One of the lessons that Hurricane Katrina taught the nation is that earthen levees that are part of flood risk reduction systems must be monitored over the years to assure the levees continue to meet the design criteria and provide their intended risk reduction. In the Greater New Orleans area, this means that as earthen levees settle from natural subsidence, and design elevations increase to account for sea level

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rise, it will be necessary from time to time to add additional soil, or "lifts," to assure they continue to provide the intended 100-year level of risk reduction to the Greater New Orleans area. The Corps is performing the engineering analyses to project when this subsidence may occur and where and when future levee lifts may be needed.

Q. Who is responsible for future levee lifts? Is this work already funded?

It is anticipated the Corps and its Non-Federal sponsor will be responsible for future levee lifts. The 4th supplemental appropriation provided the authority to enhance the system to the 100-year level of risk reduction, but did not authorize future construction requirements. We anticipate that future levee lifts will be needed after the 100-year system is complete to maintain accreditation over the 50-year life of the project. We anticipate that Congressional authorization and funding will be needed for this future construction. Operation and Maintenance, or "care and feeding," of all completed projects of the HSDRRS are the responsibility of the non-federal sponsor, which is the State of Louisiana and its partners. .

Q. Did anyone anticipate these needs for future construction?

A. Yes, the effect of subsidence and sea level rise was acknowledged in the Project Partnership Agreements for the Lake Pontchartrain and Vicinity and West Bank and Vicinity pro-

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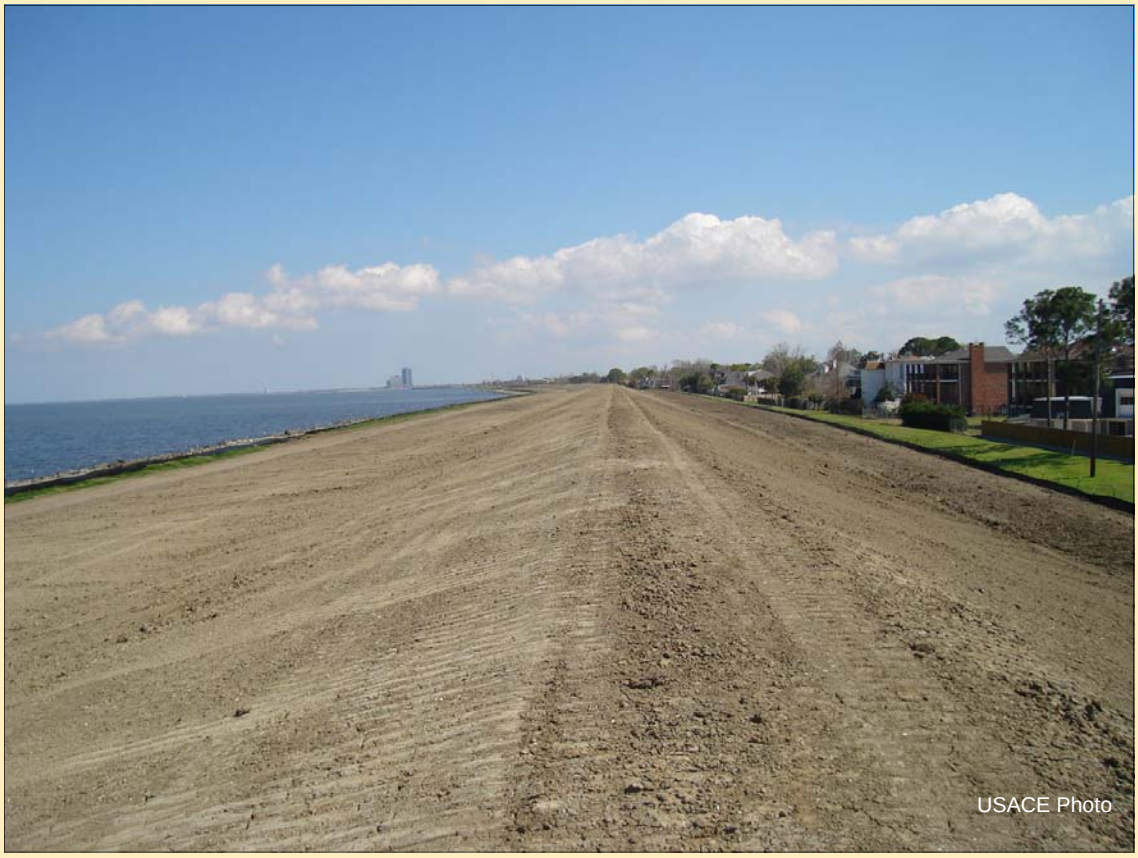
A dump truck empties its load of approved clay at a levee-building site.

"Care and Feeding" of Greater New Orleans Hurricane System Levees is necessary due to subsidence and sea level rise.

Bulldozers scarify a levee surface to prepare it for a new levee lift.

Levees are progressively improved to sustain 100-year criteria



This levee section has recently been lifted to meet the 100-year criteria.

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jects, which state in part, *"Nothing in this agreement is intended to require the Non-Federal sponsor to perform future measures to restore the New Work authorized level of protection to account for subsidence or sea level rise as part of its Operation, Maintenance, Repair, Rehabilitation & Replacement responsibilities."*

Q. Who will monitor the effects of subsidence on the levees?

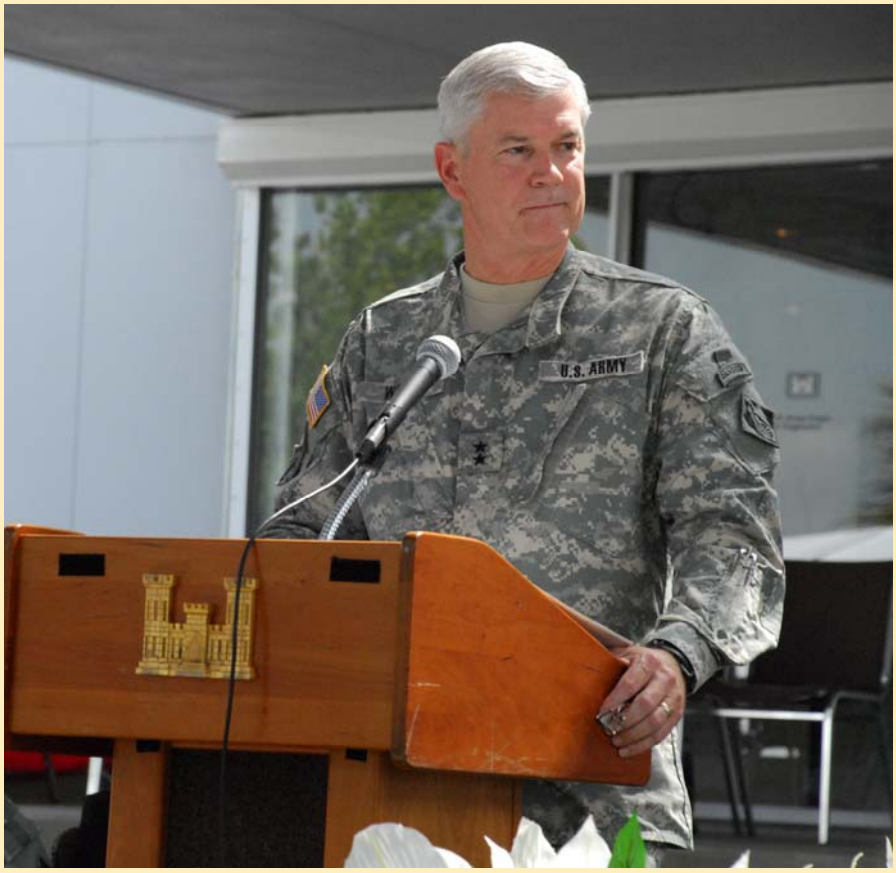
A. Inspection of the completed HSDDRS to include the earthen levees is a joint effort by the Corps and the State, along with the Levee Authorities and Districts. Annual inspections by the Corps, coupled with the state's quarterly levee inspections, along with the more extensive periodic inspections, will enable the team to monitor subsidence and the overall condition of the system.

Q. Why can't the Corps just build what's needed right now?

A. The Corps is constructing all concrete or hardened structures such as floodwalls and floodgates to what is needed for over a 50-year project life. But since earthen levees will settle over time as a result of soil conditions and subsidence, and design elevations will increase over time with sea level rise, the levees are being constructed for expected conditions over the next few years.

We have learned that the construction process in Southeast Louisiana requires use of multiple levee lifts to attain the design elevations and to maintain the authorized level of risk reduction for the 50-year life of the project. Constructing levees using multiple lifts allows designers to account for under-consolidated soils common to this area, subsidence, and sea level rise. Loading the foundation with levee lifts consolidates the soil and increases levee strength.

A Message from our Commanding General



Hurricane Season 2010 is officially over. This represents a significant milestone for the people living and working on Louisiana's Gulf Coast. It was the last Hurricane Season that the Greater New Orleans area will experience without 100-year level storm surge risk reduction. When Hurricane Season 2011 begins, the residents of the five-parish area surrounding New Orleans will have a system that will defend against the 1% storm.

Still, all eyes remain fixed on our work as we approach our June 1, 2011 goal of providing 100-year level risk reduction for the Greater New Orleans area.

The next six months will be challenging for us. While we reflect on our accomplishments, we also renew our commitment to deliver the 100-year level risk reduction with the same focus, determination, professionalism and team work that has been our trademark for the past five years.

We are Army Strong and we are Building Strong! We will stand and deliver for the people of the Greater New Orleans area.

Michael Walsh

Major General Michael J. Walsh
Commander, Mississippi Valley Division

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The *Status Report Newsletter* supports the information program for Task Force Hope and its stakeholders. It also serves as the primary tool for accurately transmitting the Corps' hurricane recovery work to stakeholders.

This is an online publication and open to public distribution.

This issue and past issues can be found at:
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Status Report Newsletter
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