



US Army Corps
of Engineers
Mississippi Valley Division



Corps Hurricane Response

Task Force Hope Status Report

March 3, 2010

East Wall of Industrial Canal being strengthened using innovative *push-in* method to drive sheet piles

Push-in method offers numerous advantages over traditional impact hammers

By Susan Spaht

In December 2009, the Corps of Engineers awarded a \$2.4 million contract to Shavers-Whittle Construction, a Louisiana-based firm, to further strengthen a section along the East Wall of the Inner Harbor Navigation Canal (IHNC). This work will address potential seepage and reduce the risk of storm surge damage to the area.

The contract calls for driving 1,400 feet of sheet piles to a depth of 50 feet in an area located approximately 4,000 feet south of the Ted Hickey (Seabrook) Bridge. Earlier in the year, the Corps added relief wells to a 3,000-foot section along the East Wall between Almonaster Boulevard and the Lakefront.

The method of construction chosen by the contractor for the pile driving



A silent piler is being used (above) along the East Wall on the Industrial Canal. The machine uses a hydraulic *press-in* method to drive sheet piles. This relatively new method is especially useful in constricted construction areas and in dense soils - like the conditions at the East Wall. USACE Photos

work is a relatively new technique called the *press-in* method. "This is the first time we've used this innovative pile driving method for construction of the Hurricane and Storm Damage Risk Reduction System," said Capt. Nicholas Cali, Project Manager. "The *press-in* method of pile driving uses a *silent piler* machine as versus the typical *impact*

hammer method. The advantages are numerous." (see next page for more information)

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The existing levees and floodwalls along the IHNC, or Industrial Canal, will become a secondary system of protection against storm surge. The primary system of protection will be the Lake Borgne Surge Barrier, now in construction, and the planned Seabrook Floodgate Complex. When complete, these two projects will operate in tandem to reduce storm surge impacts to Orleans Metro, New Orleans East, Gentilly, the Lower Ninth Ward and St. Bernard Parish.

East Wall pile driving work began on February 1 and is expected to be completed in mid-March.



Press-in Method

The *press-in* method of driving sheet piles versus the typical *impact hammer* method cuts down considerably on noise levels and vibrations, according to the manufacturer, Giken of Japan. The company's brochure says the *press-in* method offers "environmental protection, safety, speed, economy and aesthetics." Instead of using the loud impact hammers normally associated with pile driving work, the *press-in* method literally *presses-in* the sheet piles using a hydraulic pile jacking machine, or press.

Giken says this method of pile driving "can now be carried out with vibration all but eliminated and with noise greatly reduced."

The *press-in* method also allows the work to be carried out in areas with limited access, overhead obstruction or difficult geological conditions.

Press-in method is quieter, faster, more cost-effective



Capt. Nick Cali, Project Manager for the East Wall construction work, explains the advantages of using the *press-in* method of driving sheet piles.



Capt. Nicholas Cali

How does *press-in* work?

The system uses a hydraulic arm to press-in the sheet piles. The press uses water jetting to facilitate pile installation in

dense soil - like at the East Wall.

How is it environmentally protective?

This method reduces the overall construction footprint of pile driving work, the machinery is substantially quieter and it produces less vibration than conventional methods. This translates into reduced impacts to the construction area. Furthermore, the piles can be extracted in the future, if necessary, leaving a clear site for redevelopment. And the piles can be recycled.

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How is it safer?

By using the *press-in* method, there is no vibratory hammer suspended from a crane overhead; a crane is only necessary to set the sheet into the press. Once the sheet is set into the machine, it is released from the crane and is locked into position. The operator controls the press remotely, so no workers are required to guide the sheet into position.

The press is capable of exerting in excess of 80 tons of pressure onto the sheet. This amount of force, combined with the capability of water jetting, minimizes the amount of time that the sheet is suspended overhead while being installed.

How is it faster?

The construction duration is shortened when the press is being used to drive sheet, especially in difficult conditions such as dense soil. Also, this method is a “one-step approach,” meaning there is no need for the temporary set-up that is required with traditional pile driving construction.

How does it save money?

The cost savings are a result of the speed of installation and the fact that the machine uses a smaller crew and requires fewer support elements.

Is this the first time the Corps has used this method?

This method has been used by other Corps districts, and for SELA projects; but the East Wall work is the first time we’ve used the *press-in* method for Hurricane and Storm Damage Risk Reduction System construction.

Press-in method reduces noise and vibration



Capt. Nick Cali explains how the press-in method of pile driving works at the East Wall construction site.

USACE Photos

Will the press-in method be used elsewhere in the HSDRRS?

The *press-in* method is ideal for certain scenarios. I am sure it will be considered for other work in the HSDRRS where it is found to be appropriate.



“Our first priority is public safety,” said Karen Durham-Aguilera, Director of Task Force Hope. “But it is also our obligation to deliver the HSDRRS with quality using the most innovative and cost-effective methods possible. The press-in method of pile driving at the East Wall site meets all our requirements.”



Gulf Intracoastal Waterway

West Closure Complex

Construction is well underway.

- About 400 employees on site
- 16,000 man-hours per week
- Over 535,000 man-hours completed to date



Corps announces schedule of Public Meetings for March



Tuesday, March 9, 2010

**Ames and Mt. Kennedy
Pump Stations,
Harvey to Westwego Levee**

Visitation of Our Lady School
3520 Ames Blvd.
Marrero, LA 70072

*Open House 6 to 6:30 p.m.
Presentation 6:30—9:00 p.m.*



Wednesday, March 10, 2010

**GIWW
West Closure Complex,
Pump Stations 11 and 13**

English Turn Clubhouse
1 Clubhouse Dr.
New Orleans, LA 70131

*Open House 6 to 6:30 p.m.
Presentation 6:30—9:00 p.m.*



Wednesday, March 24, 2010

**Permanent Canal Closures
and Pumps RFP**

Lawless Chapel
Dillard University
2601 Gentilly Blvd.
New Orleans, LA 70122

*Open House 6 to 6:30 p.m.
Presentation 6:30—9:00 p.m.*

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<http://www.mvn.usace.army.mil/hps>

Comments and questions may be sent to the

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