



US Army Corps  
of Engineers  
Mississippi Valley Division



# Corps Hurricane Response

Task Force Hope Status Report Newsletter

October 13, 2009

## Corps plan includes adaptable system features for authorized Permanent Canal Closures & Pumps at Outfall Canals

**“Every delay in construction of permanent pumps...puts the public increasingly at risk when we exceed the service life of the temporary structures.”**

- Brig. Gen. Michael Walsh

by Susan Spaht

**The** Corps of Engineers had planned to move forward this fall with the construction bidding process to replace the temporary closures and pumps at the three outfall canals, and to award a design-build contract by summer 2010. That action cannot go forward, however, until the required Project Partnership Agreement (PPA) between the Army and the State is signed.



Brig. Gen. Walsh

“Permanent pumps at the outfall canals are a vital link in the Hurricane and Storm Damage Risk Reduction System we



are building for the greater New Orleans area,” said Brig. Gen. Michael Walsh, Commander of the Mississippi Valley Division.

“The Corps continues to remind the public that every delay in the start of construction of the permanent structures delays the completion of robust perimeter protection, and puts the public increasingly at risk when we exceed the service life of the temporary structures.”

The Corps of Engineers has authorization and funding from Congress “to

*design and construct permanent pump stations for the outfall canals... at or near the lakefront” to replace the interim structures that are in place there now.*

Over the past three years, more than 30 public meetings have been held

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## Operable System Features of the Authorized Permanent Pump Stations

- Pump Station substructure intake sill elevation adaptable to a deepened canal and lower water surface elevation
- Pump Station substructure sized for a deepened canal and lower water surface elevation without need for removal
- Pump Station superstructure sized to accommodate larger engines and gear boxes
- General site development, access and Pump Station foot print sized for future upgrades
- Channel transition adaptable to deepened canals and lower water surface elevation
- Expandable generating station
- Bridge crane rails and supports will be estimated based on requirements of increased driver sizes necessary for deepened canals and lower water surface elevation.

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on the permanent solution to replace the interim structures. Citizen groups and some elected officials have suggested other configurations. These include deepening the interior drainage canals to accommodate gravity flow to the lakefront, and plans to allow adding interior pumping stations in Jefferson Parish to intercept and divert Jefferson Parish (Hoey's Basin) rain water from the 17<sup>th</sup> Street Canal and pump it to the Mississippi River.

None of these other configurations, however, has the required authorization or funding from Congress.

### Operable System is first step

"Our responsibility is to provide public safety and to provide an operable system," said Karen Durham-Aguilera, Director of Task Force Hope. "We will engineer and build the permanent structures in a way to allow other configurations should they be authorized and funded in the future." (see chart, this page)

"The administration has confirmed that the addition of these adaptable



Col. Sinkler

measures in the design and construction of the permanent structures is a prudent engineering consideration," said Col. Robert Sinkler, Commander of the Hurricane Protection Office. "These features, built from the start, would avoid a tear out of the permanent structure should Congress authorize and provide funding for expanded features in the future."

### Another Consideration

To construct the other configurations, the Corps would be required to perform an engineering study. The Corps is authorized but *not funded* to perform such a study. The Corps estimates the cost for the engineering study to be approximately \$15.6 million.

The engineering study and the required compliance with the National Environmental Policy Act (NEPA) would take approximately three years.

The engineering study and the NEPA process would be necessary because of the complexity of the construction to include deeper canals, as well as the potential real estate impacts for the neighborhoods adjacent to the canals.

"This complex construction project is estimated to take about 10 years," said Ms. Durham-Aguilera, "that makes it even more essential to start immediately to provide a permanent solution that will operate now, as well as for potential future conditions."

### Floodwall Stability

Proponents of expanded and deepened canals have voiced concern with the floodwall stability at the out-

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fall canals. These floodwalls were overwhelmed by Hurricane Katrina's surge. At that time there were no closure gates or pumps at the mouths of the outfall canals, as there are now.

The interim gates and pumps that are in place now worked successfully and kept water in the canals below safe water levels when Hurricanes Gustav and Ike swept over the area last year.

In an effort to update and affirm the SWEs at each canal, the Corps is conducting an engineering assessment of the floodwalls. These studies are evaluating the SWEs at each of the outfall canals using new design criteria and current site data to determine whether the existing SWEs should be raised or lowered for the various segments of the canals in order to increase canal stability. The Corps is collaborating with the Southeast Louisiana Flood Protection Authority-East in external peer reviews of these assessments.

**Risky Business**

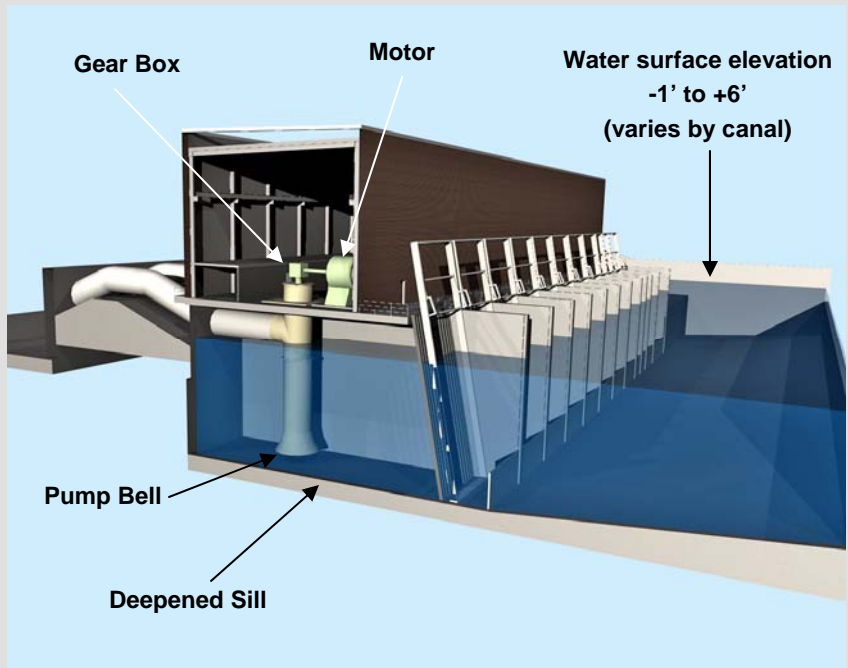
The interim structures, which currently provide 100-year level risk reduction, were built in 2006 with a five- to seven-year life expectancy, enough time for the Corps to design and construct the permanent solution. The Permanent Canal Closures and Pumps were planned to be in place



Dan Bradley

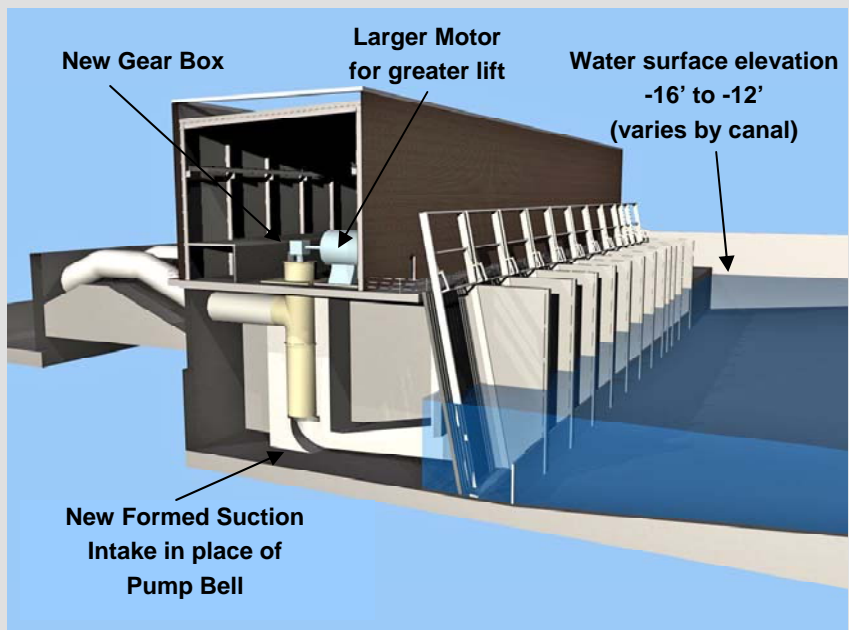
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**Adaptable Pump Station  
Authorized and Funded by Congress**



*USACE conceptual drawings*

**Possible in future:  
Pump Station with deepened canal**





London Ave. Outfall Canal



17th Street Outfall Canal



Orleans Ave. Outfall Canal

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by 2013 to assure continued reduction of risk from hurricane and storm surge flooding for Jefferson and Orleans Parishes.

"If we start today to replace the temporary structures," said Dan Bradley,

Branch Chief for Permanent Pumps, "it will take until spring of 2014 to complete the construction work. That will be pushing the temporary pumps' service life to the limit.

That's risky business to the surrounding community."



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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.

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Comments and questions may be sent to the

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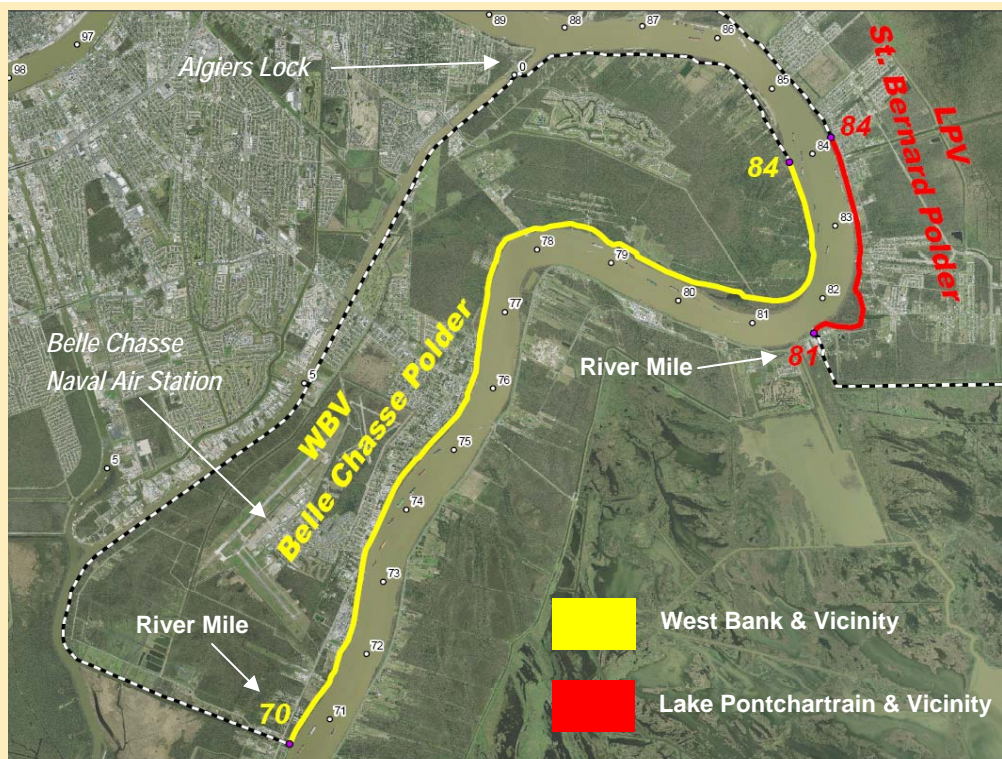
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### *Corps using advanced analysis to improve Mississippi River levees*

**The** ongoing Hurricane and Storm Damage Risk Reduction System (HSDRRS) ties into existing Mississippi River Levees for both the east and west banks. Due to updated technical analyses and a more sophisticated examination of the Mississippi River flows, the Corps of Engineers will make additional improvements to the Mississippi River Levees co-located with the Hurricane and Storm Damage Risk Reduction System.

These improvements will assure that the 100-year level of risk reduction is achieved.

“We discovered new technical information regarding the Mississippi River average flows for hurricane season,” said Col. Alvin B. Lee, New Orleans District Commander. “Previous modeling assumed one river flow. The Mississippi River flow during Katrina was lower than the

average river flow during the peak of hurricane season. Based on this information, the Corps used adaptive management to modify new technical analyses and information to account for varying flows in the Mississippi River as they relate to the modeled storm surges.”

The initial models were good tools for the system’s initial evaluation but could not have accomplished the more complex analysis which examined combined river discharge and storm surge, considerably advancing the capability of analysis. Remodeling using the newly available methods required considerable effort.

Fourteen miles of Mississippi River Levee within the West Bank & Vicinity (WBV) system, at the lower end of the Belle Chasse polder (see map above), require an increase in existing elevations up to 3.5 feet at river mile 70, diminishing to no increase

needed at river mile 84.

Three miles of Mississippi River Levee within the Lake Pontchartrain & Vicinity (LPV) system at the lower end of the St. Bernard polder require an increase in existing elevations up to 0.5 feet at river mile 81, diminishing to no increase needed at river mile 84.

The Corps will perform the necessary engineering and environmental analyses in the coming months to determine required designs.

“The Corps remains committed to deliver the Hurricane and Storm Damage Risk Reduction System to Greater New Orleans by June 2011,” said Karen Durham-Aguilera, Director of Task Force Hope. “Part of that challenge and responsibility is using adaptive management to incorporate new technical analyses and information into the work requirements.”

