



# Corps Moves 17th Street Closure Forward

*Complex pump engineering, tight schedules cause challenges*

**I**nstalling 60-inch diameter pumps into the constricted work area at the 17th Street Canal closure is an engineering challenge. One challenge is to arrange each pump's water intake so that it will not interfere with any other pump intake. Multiple five foot diameter intake pipes in varied water conditions can create a vortex that allows air to enter the pump.


Air in the pump leads to inefficiency or, in the worst case scenario, the pump will cavitate and literally destroy itself. This is one reason hydraulic modeling and physical testing is so critical. Removing this modeling and testing cycle to meet a compressed schedule makes the work far more difficult.

Placing numerous pumps in a small area creates hydraulic conditions that could significantly reduce the rated capacity of the pumps. This possibility greatly concerns the Corps hydraulic engineers who are working on a tight schedule with



**This graphic of the 17th Street Canal project shows challenges facing pump installation. The U.S. Army Corps of Engineers had to acquire the pink-shaded area before construction could begin. Other delays were due to high winds on the construction site, and the need to purchase or lease other properties. (USACE photo)**

deadlines that sometimes have to slip due to engineering complications. When schedules have to change, it causes great public concern.

In the 17th Street Canal work, while there is intense determination to meet all scheduled dates, the engineer's most important consideration is to do the work right. 

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# Kendrick Named Hurricane Protection Office Deputy



**R**ichmond "Rick" Kendrick has been named Deputy of the new Hurricane Protection Office (HPO).

Kendrick comes from the Department of Defense Missile Defense Agency. He served as the Fort Greeley, Alaska, Site Manager, responsible for infrastructure design, construction and fielding of the Nation's first intercontinental missile defense system.

From 1981 to 1999, Kendrick was with the Mobile District of the Corps of Engineers where he worked on large military programs. He helped develop the design/build process that is being used by the Corps today.

Kendrick is a graduate of the University of South Alabama with a degree in Civil Engineering. 

**Richmond "Rick" Kendrick**

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Overall information about work being performed by the Corps of Engineers in the New Orleans District	(504) 862-2201	New Orleans District Public Affairs
Overall Task Force Hope Information	(504) 862-1836	Task Force Hope Public Affairs
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Debris Removal in Mississippi	(601) 631-5065	Mississippi Recovery Field Office

The **Status Report Newsletter** supports the information program for Task Force Hope and its stakeholders. It also serves as one of the Task Force Hope's primary communication tools for accurately transmitting the work of Task Force Hope, Task Force Guardian and the Recovery Field Offices in Louisiana and Mississippi to the Gulf Coast community and its citizens. This is an online publication and open to public distribution. This issue and past issues can be found at: [www.mvd.usace.army.mil/hurricane](http://www.mvd.usace.army.mil/hurricane). Comments and questions may be sent to the Status Report Newsletter editor at: [b2fwdpao@usace.army.mil](mailto:b2fwdpao@usace.army.mil).

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# Pumps Being Readied For Canal Projects

## *Improvements slated to continue through 2010*

**I**nside any system of levees and floodwalls in any city is the challenge of collecting and discharging internal drainage water. In New Orleans managing internal drainage is a challenge of juggling priorities. Pumping rain water out and minimizing possible unimpeded storm surge water through drainage canals in the City of New Orleans is a priority with the Corps of Engineers.

When Hurricane Katrina hit New Orleans and the Gulf Coast area on August 29, 2005, 250 billion gallons of rain fell within 43 days and, as the storm and 127-mph winds approached, a 10 1/2-foot wall of water from Lake Pontchartrain surged into the city's outfall canals and overtopped some levees and breached floodwalls in several locations. These breaches resulted in the flooding of two-thirds of the city.

To make matters worse, most of the 24 internal drainage pumping stations operated by the City of New Orleans, and some in adjoining parishes, were not operating or were forced off line during the storm.

**The Corps' Plan:** The U.S. Army Corps of Engineers devised an engineering solution to avoid – or at least mitigate - future flooding of the city. This plan included correcting the problems at the city's pumping stations by: repairing the station structures, installing generators that keep the pumps working if power fails, and elevating mechanical components above the level of potential flood waters. These improvements were completed in a coordinated effort between local governments and the U.S. Army Corps of Engineers.

The Corps' plan also includes installing closure gates and temporary pumps on the city's three main outfall canals at 17th Street, Orleans Avenue and London Avenue. These gates and pumps are located at the mouth of the canals at Lake Pontchartrain. The purpose of the pumps is to evacuate internal drainage water from the outfall canals around the gates and into the lake. Installation of these gates and pumps is underway.

**The idea is:** If the city experiences a major storm, the new gates will be closed to prevent storm surge from entering the outfall canals. The new pumps will discharge



**Work continues on the massive pumps at the Orleans Avenue Canal project. The pumping capacity is designed to protect New Orleans in the event of another hurricane or heavy rainfall. Improvements will continue for more than a year. USACE photo by Paul Floro**

drainage water from the canals into Lake Pontchartrain. The new gates/pumps now being installed will serve as protection for the city while design and production of the permanent gates and pumps are being completed. (The Corps plans to install the permanent gates and pumps by 2010.)

**The Challenge:** The pumping capacity objectives, pump configurations and the aggressive schedule that the Corps is attempting have never been done before and, when finished, will be a significant engineering feat. Under normal conditions, the Corps would conduct hydraulic modeling and physical testing to develop the correct pump configuration to optimize efficiency and insure that the pumps operate as intended. This modeling and testing phase normally takes months to complete, but the Corps is compressing this phase to meet an aggressive schedule, and problems have incurred.

When tested, some of the new pumps encountered technical difficulties involving lubrication of the internal moving parts. These problems are being addressed and

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## Faces of Hope



**After Hurricane Katrina, Lollie Meunier moved back home to her beloved Pass Christian, Miss., to help with the Gulf Coast recovery effort.**

**F**or Gulf Coast natives, life after Hurricane Katrina meant immediate change. Like thousands of others, Corps employees found themselves in the middle of the devastation.

Living in Jacksonville, Fla., for the past four years, Lollie Meunier would find more than just her home town of Pass Christian, Miss., turned upside down. Her world would come crashing down, too.

Meunier, like many others, had relatives living in the target of Hurricane Katrina. She tried to convince her fa-

ther to evacuate Pass Christian for the on-coming hurricane. She said her father believed, like many other Gulf Coast natives, that "If I survived Hurricane Camille, I'll survive Katrina".

After the devastating storm passed, Meunier was unable to reach her father by phone and was very concerned for his well being. She went from Jacksonville to Pass Christian and was met by an unrecognizable sight – the formerly-pristine Gulf Coast community of Pass Christian was an area almost completely destroyed. At this sight, she became all the more desperate to find her father.


After finally reaching the street where her father's house once stood, Meunier could see only a pile of debris.

After days of searching, she was notified that her father's body had been found and identified.

Instead of returning to continue life in Jacksonville, she packed up her 9-year-old son, Khaalis, and moved back to her native Pass Christian. She wanted to help care for her uncle and help with the efforts of restoring her community.

She got a job as a Quality Assurance (QA) Inspector for the U.S. Army Corps of Engineers, and she pursued her position with a high level of professionalism.

After a short period of time, she was promoted to a QA Supervisor working on the Debris Removal Mission on the Gulf Coast.

Her job with the Corps is allowing her to help remove storm debris so the people of Pass Christian can start to rebuild. 

*Story by Denise Cuevas*

## SELA: Providing Flood Control and Improvements in Drainage

**I**n the aftermath of Hurricanes Katrina and Rita, it's easy to forget that it doesn't take a hurricane to cause flooding in Southeastern Louisiana. In the last three decades, numerous non-tropical storms have inundated the area with rain, causing billions of dollars in damage to public and private property and disrupting the lives of area residents. In 1995, for example, a three-day storm brought rains that dropped multiple inches of rain per hour and resulted in seven deaths and flooded 35,000 homes.

In response to this storm, Congress authorized the Southeast Louisiana Urban Flood Control Project (SELA) to provide for flood control and improvements to rainfall drainage systems in Jefferson, Orleans, and St. Tammany Parishes.


SELA was created in accordance with several reconnaissance reports prepared by the New Orleans District concerning flood control issues in the area. In 1996, technical reports were prepared to identify the initial work to be implemented under SELA.

In St. Tammany Parish, this work includes providing flood protection for various types of rainfall events that the area may experience. In Orleans and Jefferson Parishes, SELA has focused on channel and pump station improvements that provide those areas with flood protection generally associated with a ten-year rainfall event while providing some additional protection against larger events.

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corrected as quickly as possible. The Corps has employed private engineering firms to augment the Corps' own engineering experts, and the Corps is looking for alternative pump manufacturing sources from companies worldwide that can deliver pumps within a short time frame.


These types of problems make it difficult for the Corps to give an exact schedule for the temporary gate/pump installations. The custom-designed and manufactured pumps are being produced one at a time, tested, adjusted and then installed. 



**Installation of the pumps and gates at the 17th Street Canal continues. Photograph by Todd Hornback.**

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Approved plans in Orleans Parish also include improving five major drainage lines, adding pumping capacity to two pump stations, and adding a new pump station. Proposed plans include improving 13 canals, adding two new pump stations and raising the capacity at two existing pump stations.

Of all completed and proposed SELA activities, approximately 70 percent are now complete, and most of the contracts involved with the project have been awarded. If funding levels remain steady, the currently scheduled work in Orleans and Jefferson Parishes should be finished in 2008. 

## Important notes about pumping capacity

Meeting the pumping capacity objectives on schedule is our high priority, yet we will temper the need to meet the announced target dates, with the absolute necessity to deliver a well-designed reliable pumping capacity.

Pump configuration is a critical element of installing pumps. Under normal conditions, the Corps would conduct hydraulic modeling and physically testing to develop the correct pump configuration

to optimize efficiency. Developing a model will optimize the configuration to ensure the pumps will operate as intended. This modeling and testing phase takes months to complete. We are short cutting this phase to meet an aggressive schedule, and we are encountering configuration issues that must be solved.

The Corps has also employed private engineering firms to aid us in solving the pump configuration issue.

The Corps is looking at alternative pump manufacturing sources from companies worldwide that can deliver pumps within a short period of time.

The company selected to manufacture these pumps to the required specifications within the specified time, delivered pumps that are not working to required specifications.

The Corps therefore is looking for alternative manufactures and working with the current manufacturer to correct the delivered pumps. We are doing everything possible to correct the technical problems with the current pumps.

We are looking at alternative approaches to solving the pumping problems and delivering pumping capacity. One such approach being studied is to use a combination of temporary pumps and well placed portable pumps to reach a four thousand pumping capacity by the end of August on the 17<sup>th</sup> Street Outfall Canal.