

# Design, Construction of \$615M PCCP Project Moves Forward

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Design and construction of the Permanent Canal Closures and Pumps (PCCP) in New Orleans, La., is moving forward under the direction of the U.S. Army Corps of Engineers, New Orleans District. The project is located at the London Avenue, Orleans Avenue and 17th Street outfall canals.

The \$615 million contract was awarded to PCCP Constructors, a Joint Venture (PCCP JV), on April 17, 2013, and notice to proceed was given on May 6, 2013. The contractual completion date is set for Jan. 17, 2017, but major construction at all three pump stations is scheduled to be substantially complete in 2016. Work is currently running on schedule.

PCCP JV is comprised of Kiewit Louisiana South Co., Traylor Bros. Inc. and the M.R. Pittman Group LLC. The project manager is Tyler Buford of Kiewit Louisiana South Co.

In June 2006, Congress authorized and provided funding for the Corps to design and construct PCCP at or near the lakefront for 17th Street, Orleans Avenue and London outfall canals.

According to Dan Bradley, senior project manager of Protection & Restoration Office, U.S. Army Corps of Engineers, New Orleans District, the PCCP will be composed of permanent gated storm surge barriers and brick façade pump stations at or near the lakefront of the 17th Street, Orleans Avenue and London Avenue outfall canals.

"The pumps will move rainwater out of



MKT photo

Five MKT model V-5Esc's manufactured in the MKT Manufacturing St. Louis, Mo., factory, are being used on the job.

the canals and into Lake Pontchartrain during a tropical weather event, and be equipped with an onsite emergency power supply capacity so that it can operate independently of any publically provided utility," Bradley said.

## 17th Street PCCP

When complete, the PCCP at 17th Street

will consist of 15 generators (2.6 mW each), six 5,000 HP pump motors capable of pumping 1,800 cu. ft. (50.9 cu m) per second, and two 2,500 hp pump motors capable of pumping 900 cu. ft. (25.4 cu m) per second — for a total pumping capacity of 12,600 cu. ft. (356.8 cu m) per second.

The station will be 250 x 132 ft. (76.2 x 40.2 m), with a height of 43.9 ft. (13.4 m).

The station elevation will be 52.9 ft. (16.1 m), and there will be a total of eight gates.

## Orleans Avenue PCCP

When complete, the PCCP at Orleans Avenue will consist of four generators (2.6 MW each) and three 2,500 hp pump motors capable of pumping 900 cu. ft. per second —

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MKT photo

Two of the hammers are being rented from RPI in N.J., and one from Seaboard Steel in Sarasota, Fla.



U.S. Army Corps of Engineers photo

When complete, the PCCP at London Avenue will consist of 11 generators (2.6 mW each), four 5,000 hp pump motors capable of pumping 1,800 cu. ft. (50.9 cu m) per second, and two 2,500 hp pump motors capable of pumping 900 cu. ft. (25.4 cu m) per second — for a total pumping capacity of 9,000 cu. ft. per second (254.9 cu m).

# PCCP to Replace Interim Closure Structures From 2006

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for a total pumping capacity of 2,700 cu. ft. per second (76.4 cu m). The station will be 40.9 ft. (12.5 m) high, with an elevation of 49.9 ft. (15.2 m).

## London Avenue PCCP

When complete, the PCCP at London Avenue will consist of 11 generators (2.6 mW each), four 5,000 hp pump motors capable of pumping 1,800 cu. ft. per second, and two 2,500 hp pump motors capable of pumping 900 cu. ft. per second — for a total pumping capacity of 9,000 cu. ft. per second (254.9 cu m). The station height will be 43.9 ft. (13.4 m), with an elevation of 52.9 ft. (16.1 m).

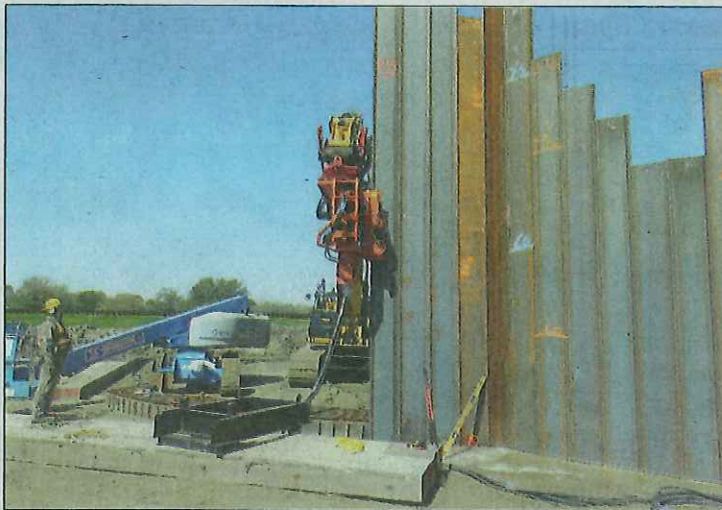
The PCCP will replace the Interim Closure Structures (ICS), which were constructed in 2006. The existing ICS will continue to provide 100-year levels of risk reduction until construction of the PCCP is complete. When the PCCP are commissioned, the ICS will be decommissioned and dismantled through a separate contract.

Bradley said that the most significant challenge with the project is designing the PCCP for the “current condition” as well as for a “possible future condition.”

“Current conditions require 100-year storm surge barriers near Lake Pontchartrain for 17th Street, Orleans Avenue, and London Avenue,” Bradley said. “These storm barriers include gates and a pumping station to form a new permanent risk reduction system. Each PCCP will allow the respective canal to be isolated from the lake and evacuate unimpeded canal flows. The new PCCPs will operate in series with the existing interior Drainage Pump Stations (DPS). Possible Future Conditions, which are not currently authorized by Congress nor funded, may require the removal of the DPS facilities and deepening of the outfall canals from the DPSs to the PCCPs to allow drainage to flow to the PCCPs by gravity. The scope of the PCCP includes the requirements for the Current Conditions and adaptations which would allow conversion of the structures should authorization and funding become available for each PCCP to meet the Possible Future Condition.”

Adaptable features of the PCCP are as follows:

- The pump station substructure intake still elevation is adaptable to a deepened canal and lower water surface elevation.
- The pump station substructure is designed for a deepened canal and lower water surface elevation without need for removal.
- The pump station superstructure is designed to accommodate larger engines and gear boxes.
- The general site development, access,



MKT photo

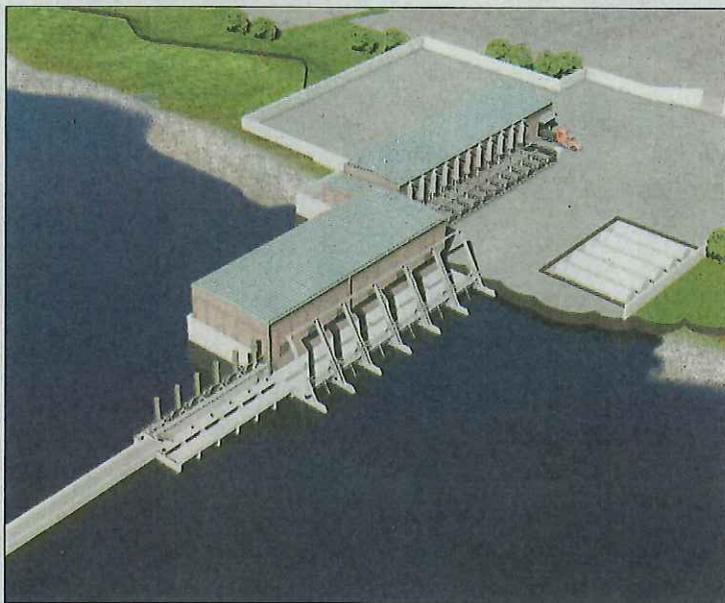
Of the five hammers working on this site, two are being rented from Mississippi Valley Equipment Co., which is the parent company of MKT.

and pump station footprint is sized for future upgrades.

- The channel transition is adaptable to deepened canals and lower water surface elevation.
- There is an expandable generating station.
- The bridge crane rails and supports will be estimated based on requirements of

increased driver sizes necessary for deepened canals and lower water surface elevation.

“The PCCP is a design-build project,” Bradley said. “This delivery system is used to minimize the project risk for an owner and to reduce the delivery schedule by overlapping the design phase and construction phase of a project. It is highly unusual for a



U.S. Army Corps of Engineers photo

A rendering of the completed PCCP at London Avenue.

massive civil works project to be designed and constructed simultaneously, but the expedited process is necessary given the compressed timeframe. This method was also used for the Inner Harbor Navigation Canal Surge Barrier at Lake Borgne.”

When fully operational, the three pump stations combined will be able to pump 24,300 cu. ft. (688 cu m) per second. That is enough water to fill an Olympic-sized swimming pool in 3.63 seconds or fill the Superdome in less than 90 minutes.

If all of the pile being driven for the project were placed end to end, it would stretch more than 48 mi. (77.2 km).

Approximately 8,000 tons (7,257.4 t) of reinforcing steel will be used on this project.

“The Greater New Orleans Hurricane and Storm Damage Risk Reduction System is better than at any time in the city’s history,” Bradley said. “The risk of flooding from storm surges has been greatly reduced. The PCCP represents the final major construction effort in this system.”

Major subcontractors for the project include Carlo Ditta Inc. for concrete; Crescent Resources LLC for hauling and clean fill haul; Greenhart Group LLC for miscellaneous metal manufacturing; Hi-Tech Electric Inc.; Jay Truck Service Inc. for trucking/hauling; JC Patin Group LLC for utilities, slope paving and site work; Prime Controls LP; River City Environmental Services Inc.; Rodney Hunt Company; Skyline Steel LLC for pile manufacturing; and Stantec Consulting Services Inc., designer of record.

Major equipment used on the 17th site includes a Liebherr 1300, a Liebherr 1200 SX, a Liebherr 1160, two Manitowoc 888s and a Grove 890E.

On the Orleans site, major equipment includes a Liebherr 1200 SX and a Manitowoc 999.

On the London site, major equipment includes a Manitowoc 999, a Liebherr 1200 SX and a Manitowoc 4000.

On the Port site, major equipment includes a Liebherr 1300 and a Manitowoc 4100.

In addition, many different pile hammers are being used on the job. These include five MKT model V-5Esc’s manufactured in the MKT Manufacturing St. Louis, Mo., factory. Of the five hammers working on this site, two are being rented from Mississippi Valley Equipment Co., which is the parent company of MKT. Two are being rented from RPI out of N.J. and one from Seaboard Steel in Sarasota, Fla.

(This story also can be found on Construction Equipment Guide’s Web site at [www.constructionequipmentguide.com](http://www.constructionequipmentguide.com).)  
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