Environment

Failed pumps at Corps pumping station could increase Mid-City flooding risk

By Danielle Bell, Staff writer August 27, 2012 11:10am 9 comments

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The two pumps on the right, E4 and E5, are missing from the elbows above. Pumps can be seen on the two units to the left. Click to enlarge. Photo by Danielle Bell

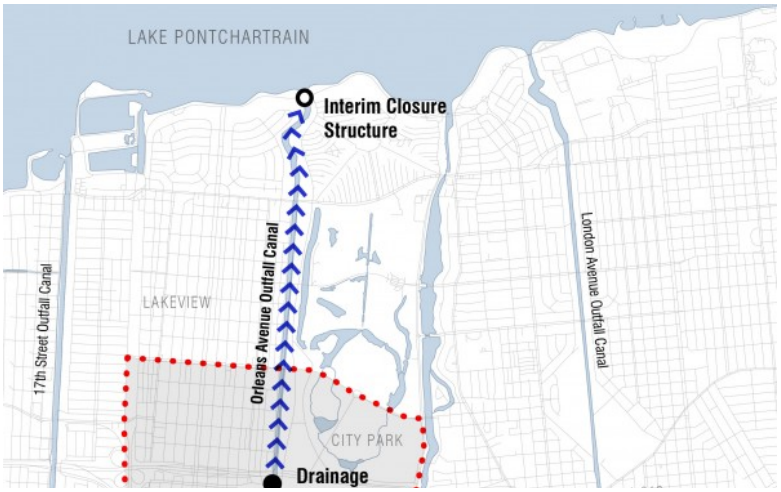
With Tropical Storm Isaac bearing down on New Orleans, one of three key Army Corps of Engineers pumping stations that help drain the city during a storm is only at partial capacity – far less than what is needed to keep the Orleans Avenue Canal from filling.

The city's Sewerage & Water Board pumping station serving Mid-City and the City Park area can put significantly more water in that canal than the Corps could empty if the flood gates at Lake Pontchartrain have to be closed. Isaac is expected to be a Category 1 or 2 hurricane when it makes landfall in the New Orleans area Tuesday night.

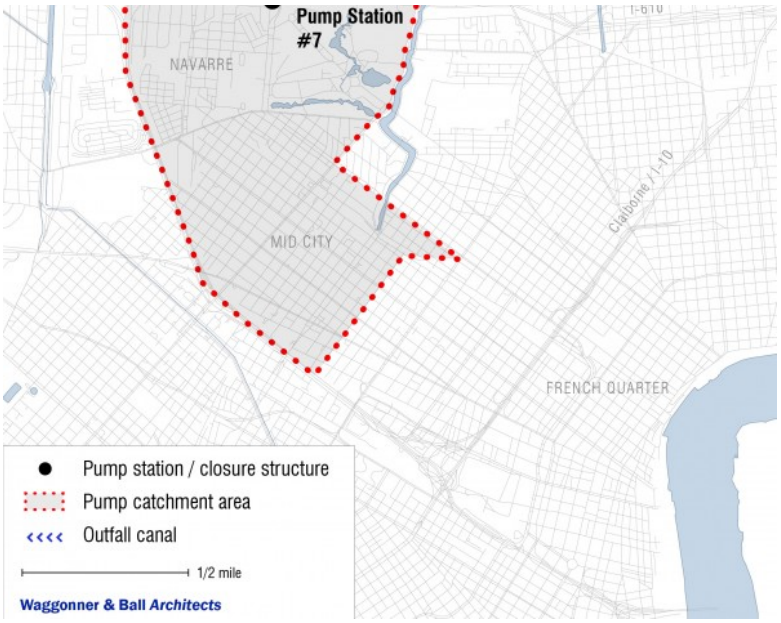
In a worse-case scenario, that means the S&WB would likely reduce pumping, said Chris Accardo, chief of operations for the Army Corps of Engineers.

"If it got to that point, we would have to call the SW&B and tell them to call it off. Is it a possibility that it could happen? Yes, but the reality that a situation like this could happen, it's a very small chance," Accardo said.

Update, 1:25 p.m.: At a news conference today, S&WB Executive Director Marcia St. Martin said she had no concerns about the missing pumps, saying she was confident that the Corps pumps could handle all the water the S&WB sends into Orleans Avenue Canal.



Two of the 10 pumps at Orleans Avenue experienced "some type of hydraulic failure" last month, were removed and are being repaired off site, Accard said. They're scheduled to be reinstalled in mid September, he said. This appears to be the second failure experienced by



The Orleans Avenue Canal drains part of Mid-City and a neighborhood to the west of City Park. Graphic courtesy of Waggonner and Ball Architechts.

the two pump systems this summer, after likely corrosion-related oil spills prompted their initial withdrawal from service.

The Orleans Avenue Canal, the 17th Street Canal and the London Avenue Canal are primary drains for the city. The failure of the 17th Street and London canals' levees, as well as the levee along the Industrial Canal, after Hurricane Katrina flooded 80 percent of the city. This animation from The Times-Picayune explains how the city flooded.

At that time, there were no gates where the canals flowed into the lake. Since then, the Corps has built temporary gate systems and massive pumping stations that move the canal water into the lake when the gates are closed, preventing backflow into the city.

The problem with the missing pumps was brought to The Lens' attention by Matt McBride, a mechanical engineer who has been tracking Corps efforts around the outfall canals and the greater New Orleans area since early 2006. Using federal Freedom of Information requests, McBride uses the Corps' own reports and publishes extensive, detailed information about problems at the stations at his Website, Fix The Pumps.

Though he's known for his ability to cite arcane technical specifications, he said the overall situation at Orleans Avenue pumping station is really pretty simple.

"They installed 10 pumps and have taken two out of service for over two months during storm season," he said. "Even without all the nitty gritty, anyone can grasp that's not a good thing."

Accardo stressed that the other outfall canal stations are fully operational.

“The good news is no pumps are down at London Avenue and 17th Street,” Accardo said.

Further, Accardo said that the Orleans Canal has the highest-rated water level of the three.

“We’ve never had to close the (Orleans Avenue) gates during a storm. Not even during Ike, not even during Gustav,” he said. “So the threat of these pumps being down and causing any problems is extremely remote. There is hardly any threat to City Park or Mid-City.

“We are not where we want to be at Orleans currently. I would like to be a little higher, but it is not something people need to be worried about,” he said. “My standard is to have as many pumps functional at all times.”

The pumps at these three stations come on only after the gates are closed as Lake Pontchartrain reaches certain heights above sea level and continues to rise. The purpose is to keep the canals from reaching their structural limits.

According to a May 2010 Corps presentation to then-Mississippi Valley Division commander Maj. Gen. Michael Walsh titled “Operational Considerations at the Outfall Canals,” the safe-water levels at that time were:

- London Avenue: 5 feet
- 17th Street: 6 feet
- Orleans Avenue: 8 feet

The Corps completed multi-million-dollar remediation projects along all three canals in 2011 that were supposed to raise the safe-water levels even higher. However, the Corps closed the London Avenue gates during a rainstorm in March when lake levels were below 5 feet.

“We’re pretty sure we’re going to see London close during this particular storm,” Corps Col. Ed Fleming told WWL-TV this morning.

The Army Corps of Engineers estimates when all 10 pumps at the Orleans Avenue Canal are working, the pumping capacity is around 2,200 cubic feet per second. With two pumps out, that number falls to approximately 1,760.

But the Sewerage & Water Board's Drainage Pump Station No. 7, which drains Mid-City and the City Park area, can put an estimated 2,550 cubic feet per second of rainwater into the Orleans Avenue Canal, according to a 2006 Corps post-Katrina investigation.

Corps officials were always aware of the Orleans Avenue pumping shortfall, but it's more severe with two pumps out for oil spills.

These spills follow a long string of similar incidents in recent years at all three outfall canal stations run by the Corps – some also occurring during hurricane season. Many of these spills resulted from corrosion of uncoated carbon steel pump components in the brackish waters of Lake Pontchartrain, as McBride has documented at his site.

The disconnected pumps are referred to as E4 and E5, and they're on the on the Marconi Avenue side of the canal.

It was first discovered that pump E5 was leaking hydraulic fluid on July 2, 2012, according to a report published by the National Response Center. The report states that around 10:00 a.m. "a caller reported a discharge of hydraulic oil from a hydraulic pump due to unknown causes." The estimated release of oil in the report was between 15 and 50 gallons. The report also lists the suspected responsible party as the Army Corps of Engineers.

The pump was subsequently disconnected and remained disconnected at the canal for more than a month.

According to the second incident report from the National Response Center, when pump E5 was pulled for repairs on Aug. 7, workers discovered that neighboring pump E4 was also leaking hydraulic fluid. The report said about 80 gallons had leaked, but all within a boom containment area set up after the E5 leak was discovered.

Accardo said the Corps prepares a weekly report on the status of the pumps for all elected officials and stakeholders. The information is not always released to the

public because “we don’t want to scare people when we know we have enough power to keep up with the S&WB in the small chance we have a Katrina-like event.”

Accardo said that the situation at Orleans Avenue is only a snapshot of what pumps are working or not working today.

“Next week we could have a pump down at London Avenue or 17th Street. It’s a very dynamic situation about what pumps are working and what pumps are down on a day-to-day basis,” he said. “It’s very common that there is a pump down at Orleans Avenue or London at any time, but even with a pump down, as long as I can stay ahead of the SW&B, it’s not a problem.”

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Matt • 7 months ago
We won't know exactly what happened for months, when FOIA requests for pump data and emails finally get answered.

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Clay • 7 months ago
Those pumps are getting at least a bit of a workout. It's not raining super hard (I'd say only ~.5"/hr). Had this thing been more of a rainstorm and as stagnant as it's been, things could have gotten more interesting...

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Clay • 7 months ago
We're now buttoned up on a storm that appears to be a slow-moving rain event (although it's sunny right now in Uptown). We're looking at those pumps to have a workout for the next few hours.

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Matt • 7 months ago
The Times-Picayune reports the Orleans Avenue gates were closed at 11:00

P.M. on August 27, 2012.

http://www.nola.com/hurricane/...
"The Orleans Avenue outfall canal was closed at 11 p.m. Monday."

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Matt • 7 months ago
There's no lightning rods on the 20,000 gallon fuel tanks at all three sites, and there never have been. These sites sit in the middle of neighborhoods.

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Clay • 7 months ago
I have a comment pending here that talks about the pumps:
http://fixthepumps.blogspot.co...

Also, one of the reasons Orleans Ave. outfall canal has such a high SWL is because there's a giant gap. I saw it there last week, so you can easily drive there and see it yourself.

Here's the Google Street View:
https://maps.google.com/maps/m...
You can see the end of the wall to the right of the pickup truck.

Here's Bob Bea talking to National Geographic about the gap:
http://ngm.nationalgeographic....

The Corps has decided it's not worth plugging the gap, because of the gates at the mouths of the outfall canals.

My opinion on the shortfall on pumping capacity is that the effect will probably be sr As the Corps' pumps fall behind the S&WB pumps, some significant street flooding almost certainly occur. Beyond that it'll take a lot of rainfall to cause property damag

see more

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