

The Sewerage & Water Board OF NEW ORLEANS

625 ST. JOSEPH STREET 504.529.2837 OR 52.WATER

www.swbno.org

April 23, 2025

Dear Mayor Cantrell, Honorable Members of the New Orleans City Council, and Orleans Parish Delegation:

This report is delivered in accordance with Revised Statute 33:4091, Section F, which states: "In addition to the other requirements of this Section, the board shall send a report, by electronic mail, to the members of the Orleans Parish legislative delegation and the members of the governing authority of Orleans Parish detailing the pumping and electrical power of its facilities and the available manpower no later than twenty-four hours prior to a hurricane entering the Gulf of Mexico as determined by the National Weather Service and no later than forty eight hours after a flood watch or warning or thunderstorm watch or warning is issued by the National Weather Service for any area of Orleans Parish."

Scattered thunderstorms were forecast for the New Orleans area on April 21st, 2025, with little confidence in where the rainfall would occur. An unorganized set of storms capable of producing heavy rain moved through the area throughout the morning and afternoon hours, with flash flood warnings issued at 2:50pm. The status of SWBNO's pumping and power equipment before and during the events is detailed below.

STORM IMPACTS

Two periods of heavy rain were experienced in the New Orleans metro region on April 21. The first was from approximately 11am to 1pm. Several drainage pump stations recorded over 2 inches of rain during this time. A second period of heavy rain occurred from approximately 3pm to 7pm. During this time, rainfall rates exceeding 4 inches were recorded at various times, with over 5 inches of rain recorded in 2 hours at locations on the Westbank and the Lower 9th Ward. A summary of rainfall rates and accumulation at each monitored station is below.

Location	Address	Neighborhood	Total Rainfall (inch) (*)	Rain Intensity (inch/h) (**)	Peak Rain Hour (inch/h) (***)	Peak Hour End Time (****)
Central Control	8800 S. Claiborne Ave.	Hollygrove	2.1	5.3	1.5	05:04 PM
DPS-01	2501 S. Broad St.	Broadmoor	5.1	3.8	1.8	12:12 PM
DPS-02	444 N. Broad St.	Mid City	5.9	3.8	1.8	12:43 PM
DPS-03	2251 N. Broad St.	7th Ward	5.0	3.5	1.6	04:33 PM
DPS-04	5700 Warrington Dr.	Gentilly	3.0	2.5	1.3	05:12 PM
DPS-05	4841 Florida Ave.	Lower 9th Ward	7.4	4.4	3.0	04:11 PM
DPS-06	345 Orpheum	Lakeview	2.8	4.3	1.6	05:07 PM
DPS-07	5741 Orleans Ave.	City Park	3.1	2.5	1.5	05:10 PM
DPS-10	9600 Hayne Blvd.	New Orleans East - Lakefront	2.6	2.5	0.9	03:17 PM
DPS-11	5301 East Sixth St.	Lower Coast Algiers	1.6	3.5	1.2	12:12 PM
DPS-12	7223 Pontchartrain Blvd.	Lakeview	2.6	3.2	1.5	04:56 PM
DPS-13	4201 Tall Spruce	Algiers	1.3	1.9	0.7	11:42 AM
DPS-14	12200 Hayne Blvd.	New Orleans East – Lakefront	2.8	2.4	0.9	03:24 PM
DPS-15	Intracoastal Waterway	New Orleans East – Intracoastal Waterway	1.7	1.3	0.5	03:54 PM
DPS-16	7200 Wales St.	New Orleans East – Lakefront	3.0	2.5	1.2	03:22 PM
DPS-17	2800 Florida Ave.	St. Roch	5.3	3.7	1.8	03:59 PM
DPS-19	4500 Florida Ave.	Upper 9th Ward	7.5	4.4	3.0	04:13 PM
DPS-20	6300 Terminal Rd.	New Orleans East – Intracoastal Waterway	5.5	3.2	1.8	04:20 PM
St. Joe	625 St Joseph St	Central Business District	6.1	3.8	2.0	03:52 PM
Station-A	1321 Orleans Ave.	Treme	4.3	2.9	1.3	05:21 PM
WBPC	1107 Pacific Street	Algiers	5.8	4.2	2.8	03:49 PM
			MAX : 7.5	MAX : 5.3	MAX: 3.0	
			AVG : 4.0	AVG : 3.3	AVG : 1.6	

Table 1. Rainfall accumulation (inches) and rain intensity (inches/hour) recorded atSWBNO drainage pump stations.

The rainfall accumulation at other weather stations across the City is shown below, as of 6pm on April 21st. On the Westbank and Lower 9th ward, over 9 inches of rain was recorded in a 5-6 hour period. **This equates to roughly a 1 in 50-year to**

1 in 100-year storm. The SWBNO drainage system is designed to handle 1 inch of rain an hour for the first hour and a half an inch an hour every hour thereafter. The hardest hit areas recorded levels of 7.5-10 inches over the course 3-5 hours. This amount of rain will overwhelm the system regardless of its current condition.

Figure 1. Daily rainfall accumulation in inches, as of 6pm on April 21, 2025 (<u>https://weatherwise.nola.gov/</u>)



Widespread flooding was reported in the Lower 9th Ward, Hollygrove, Downtown/CBD, and on the Westbank. According to the Real Time Crime Center (RTCC), observations of flooding over the curb began around 2:30pm, with reports coming in until 8pm. The majority of areas were reported as resolved by 9pm. Some areas were not reported by RTCC as clear until after midnight, but the actual time of water receding may have been sooner.

While some limited pumping and power issues were encountered by SWBNO's drainage system, as noted below, canal levels at the stations that serve Lower 9th ward (DPS 5), and Algiers (DPS 13) **never rose to, or above, any street level flooding that was reported.** The primary areas of reported flooding at General DeGaulle and Wall (Algiers) and Claiborne Ave at Parish line (Lower 9th) are 4.5-5.5 ft above the highest level of the canals serving either area. This indicates that the flooding issues were related to the volume and timing of rainfall, as well as the capacity of the pipes and canals leading to the pump stations, rather than the pumps/pump stations themselves.

SWBNO is taking following steps as a proactive measure to address large-scale events such as this one, and drainage in general:

- 1. Clean catch basins and repair drain lines. Similar to having a small straw in a large beverage, if catch basins/pipes/canals are blocked or too small, then water cannot get to the pump stations. To combat this, we are working to make sure the small diameter drainage conveyance system is clear of debris and not otherwise blocked. SWBNO undertook the responsibility of the small diameter drainage system in January 2025, with the goal of cleaning 20% of the system a year. Achieving this goal is depending on funding, with \$25-\$40M needed annually. Thus far SWBNO has received a funding commitment of \$18M in 2025.
- 2. The **Southeast Louisiana Flood Control Program (SELA) program** being implemented in conjunction with the Corps of Engineers has already expanded the drainage canal system capacity in parts of Uptown and the Florida area. There is on-going work in Algiers to enlarge the General DeGaulle Canal so that it can collect more stormwater and convey it to Pump Station 13. This work is expected to be completed by the end of 2026.

PUMPING AND POWER

Below is the status of SWBNO's pumping and power equipment at the outset of the event.

Drainage Pumps:

A total of 89 of 93 drainage pumps were reported in service at the outset of the event.

- DPS 13: No. 4 pump (diesel pump) is for emergency use only. Additional drainage funding is needed to move forward with repairs. 5 additional pumps were available at this station
- DPS 14: No. 3 pump out of service due to mechanical issues. #3 repairs will be completed via contract, with RTS anticipated in Q2 2025. 3 additional pumps were available at this station Note that drainage from this area can also be addressed by DPS 10, DPS 16, and Dwyer DPS via the Morrison Canal.
 DPS 15: No. 1 pump gearbox repairs are in progress. RTS Q2 2025. 2 additional pumps were available at this station
- DPS 18: Pump No. 1 out of service as of May 2024. A contractor has been engaged to make the repair, with RTS anticipated in summer 2025. 1 additional pump is available at this station, and a portable pump was installed at this location as a temporary measure.

Several pumping issues were encountered during the storm event:

- Around 4:30pm, there was an electrical feeder trip that caused a loss of two pumps at Station 3 (E and D pumps) for approximately 10-20 minutes. Two pumps at Station 5 were also affected.
 - At Station 3, the three other pumps at the station remained online during this time. Canal levels were elevated for approximately 30 minutes during this time. However, similar to the situation in the Lower 9th Ward and Algiers, canal levels in the area served by the station (part of the French Quarter, Treme, and areas adjacent to Bayou St. John) did not rise above ground surface elevations in that area.
 - At Station 5, two 60-hz other pumps were in use during this time. One pump was returned to service after 40 minutes. (Note that previous reports indicated that only one pump was affected, but further review shows that two pumps were impacted.)
- At Station 6, canal elevations were elevated for about an hour while three pump issues were addressed.
 - Vertical pump #4 initially could not start due to a mechanical issue but was brought online at 5:50pm
 - C pump initially could not start due to a minor electrical issue, and was brought online at 5:30pm
 - A and B pumps experienced an electrical issue that could not be resolved during the rain event. It was fixed the following day.

Underpass Stations:

At UPS Old Carrollton, which services the Carrollton Ave/Interstate I-10 underpass, two of three pumps at that location are out of service. A temporary pump is also deployed at this location. This location was flooded and impassable for several hours on this day.

Power:

A combination of Frequency Changers and Turbine 5 were used for this event. The EMDs were also available.

A concern was identified with the trip and throttle valve for Turbine 4 during a test run conducted the previous week. SWBNO crews performed some general maintenance, and it was confirmed on Tuesday, April 22, that additional contractor assistance will be needed to address the valve. However, **Turbine 4 is utilized only for storm events that are forecasted with a high degree of confidence in location, volume, and timing of rainfall;** this is due to the time needed (several hours) to create sufficient steam pressure and temperature for the turbine to be available, and make sure that the pumping load exceeds a minimum operating level to avoid damage to the machine. **Turbine 4 is not flexible to be used for 'pop-up' storms.** As noted on the SWBNO pumping and power dashboard, 51.5 MW of 25hz power is now available at this time without Turbine 4.

Unit*	Frequency	Capacity	Available
		in MW	
T4	25 Hz	20 MW	0 (RTS under
		(18.5 MW	evaluation)
		revised capacity)	
T5	25 Hz	20 MW	16 (revised
		(16 MW revised	capacity)
		capacity)	
Carrollton Frequency	Converts 60 to	8.5 MW	8.5
Changers 1&2	25Hz		
Station D Frequency	Converts 60 to	12 MW	12
Changers 3&4	25Hz		

Unit*	Frequency	Capacity	Available
		in MW	
West Bank Power	Converts 60 to	2.5 MW	2.5
Complex (Algiers Water	25Hz		
Treatment Plant)			
Five EMDs	25Hz	12.5 MW (total)	12.5
		2.5 MW (each)	
Plant Frequency Changer	Converts 60 to	3.75 MW	0 MW (RTS to be
via T6	25Hz		determined)
		Total 25 Hz:	51.5 MW
T6	60 Hz	22 MW	22 MW

*T3 has been decommissioned as of May 2021, and T1 has been decommissioned as of June 2022. Both units have been removed from this table.

STAFFING

Of New Orleans' 24 drainage pumping stations, some are staffed, some run remotely, and some are staffed as circumstances dictate. For this event, all stations were staffed appropriately.