

Sewerage & Water Board of New Orleans



***Executive Director's Report
to Board of Directors
August 10, 2017***

8/5 Rain Event

- At 2 p.m. on 8/5, a rainstorm began that over the course of 3 hours dropped over 9 inches of rainfall in parts of the city.

Rainfall Totals August 3 – 6, 2017							
Drainage Pump Station	Address	Neighborhood	8/3	8/4	8/5	8/6 (1PM)	Totals
DPS #1	2501 S. Broad	Broadmoor	2.08	0.33	5.49	1.12	9.02
DPS #2	444 N. Broad	Mid City	2.82	0.89	9.43	1.65	14.79
DPS #3	2251 N. Broad	St. Bernard	1.96	0.91	5.74	1.96	10.57
DPS #4	5700 Warrington	Lower Nine	1.99	0.87	3.94	1.17	7.97
DPS #5	WB Intercoastal @ Florida	Lower Nine	2.02	1.86	3.64	1.45	8.97
DPS #6	345 Orpheum	Lakeview	2.33	1.76	4.71	0.48	9.28
DPS #7	5741 Orleans & Marconi	City Park	2.21	3.81	4.96	1.07	12.05
Citrus	9600 Hayne	NOE	0.59	0.00	0.00	0.00	0.59
DPS #11	5301 E. Sixth St.	Lower Algiers	1.08	0.00	1.54	0.21	2.83
DPS #13	4201 Tall Spruce	Algiers	1.46	0.93	0.64	0.04	3.07
Jahncke	9600 Hayne	NOE	0.91	0.00	0.74	2.06	3.71
St. Charles	7200 Wales	NOE	0.80	0.54	0.00	2.63	3.97
Sta. D	2801 Peoples	St. Roch	1.68	1.78	5.62	2.45	11.53
DPS #19	4500 Florida	Bywater	1.85	2.24	3.60	1.82	9.51
Central	8800 S. Claiborne	Hollygrove	3.28	1.03	2.07	0.90	7.28

8/5 Rain Event

- This volume exceeded the capacity of SWB's canals and pumps to remove stormwater quickly.
- As a result, stormwater backed up onto streets resulting in significant localized flooding damaging cars, homes and businesses.
- Because of the volume of rain in such a short period, it took approx. 14 hours to completely drain the city.
- City was not completely drained until early Sunday morning.

8/5 Rain Event

- Earlier on 8/5, SWB took the following measures to prepare for possible heavy rain based on the day's weather forecast:
 - Lowered elevation of water in canals to provide additional drainage capacity;
 - Delivered extra diesel fuel for drainage pumping station generators to continue to operate in event of a power disruption;
 - Placed additional Turbine at Carrollton Power Plant on standby
- All are standard operating procedures performed ahead of heavy rain events.

8/5 Rain Event

- In total, 229 employees were on duty at SWB facilities across the city.

Operations Staffing on 8/5/17				
Division	Area	Per 8hr shift (3X)	on-call worked	Total day
Central Control		4	1	13
Pumping and Power	Power Plant	6	5	23
	Turbine		18	18
	River Stations	2	1	7
	WB Power	2		6
Drainage		21	9	72
Sewerage Pumping		0	4	4
Sewer Treatment	East Bank	3	1	10
	West Bank	1	0	3
Water Purification	East Bank	4	0	12
	West Bank	3	0	9
Facility Maintenance	East Bank		17	17
Networks	East Bank	8	27	35
Total S&WB		54	83	229

8/5 Rain Event

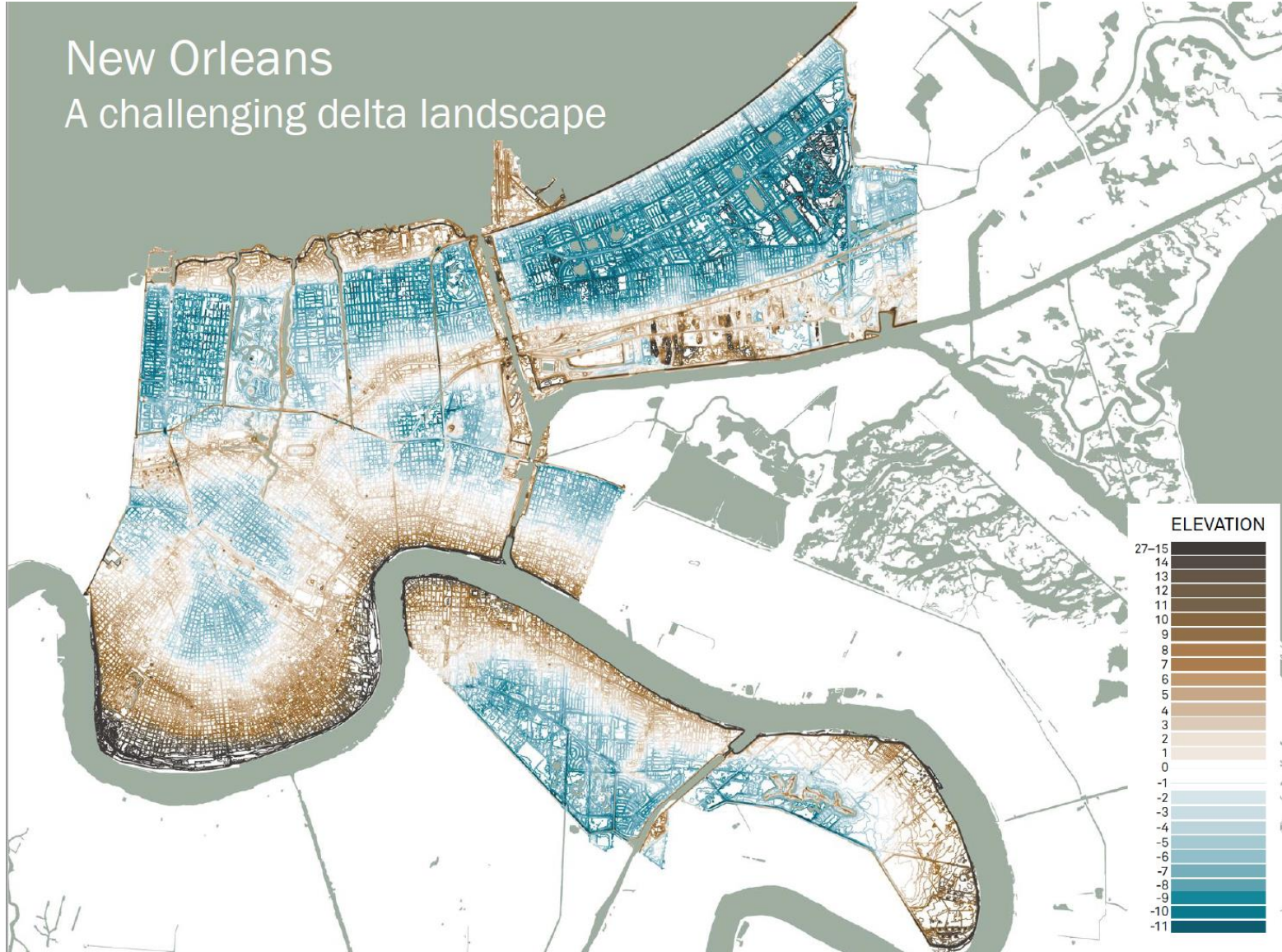
- There are 100 drainage pumps and 20 constant duty pumps.
 - On 8/5, 104 pumps were online out of 120.
 - 91 drainage pumps and 13 constant duty pumps available.
 - Loss of power occurred multiple times at multiple pumps throughout the impacted area.
- 16 pumps were out of service for maintenance.
 - DPS #1 (Broadmoor) 2 pumps out of service
 - 1 drainage pump and 1 constant duty pump
 - 9 of 11 pumps operating
 - DPS #6 (Lakeview) 6 pumps out of service
 - 4 drainage pumps and 2 constant duty pumps
 - 9 of 15 pumps operating
 - DPS #7 (City Park) 1 drainage pump out of service
 - 2 of 3 pumps operating
 - 3 drainage pumps were out of service in Algiers (1) and New Orleans East (2) and did not effect this rain event.
 - 4 constant duty pumps were out of service in Lower Nine (2) and NO East (2) and did not effect this rain event.

8/5 Rain Event

- Because of New Orleans' topography, gravity forces stormwater to the lowest point.
- On 8/5, low-lying areas of the city received near record-breaking rainfall.
 - Water from higher areas in the city flowed to those low-lying areas.
 - This caused additional water rise in low-lying areas after the rain.
- When multiple areas of the city are inundated, it may take several hours for it to flow to the lowest area where it will collect and finally drain.
- Example: Reports of rising water in Lakeview after the rain stopped. This is because Lakeview is lower than neighborhoods around it.

8/5 Rain Event

New Orleans
A challenging delta landscape



7/22 Rain Event

- At 1:30 p.m. on 7/22, a rainstorm began that dropped over 4.5 inches of rainfall in parts of the city over the course of approximately 90 minutes.
 - Rainfall was one of the factors that contributed to flooding: pump running backwards, pump catching on fire, power denials to multiple pumps in the effected areas
 - DPS# 12 (West End) single pump out of service
- By 7 p.m., water cleared from all underpasses.

7/22 Rain Event

Rainfall Totals - July 22, 2017			
Drainage Pump Station	Address	Neighborhood	Rainfall
DPS #1	2501 S. Broad	Broadmoor	2.24 in.
DPS #2	444 N. Broad	Mid-City	3.94 in.
DPS #3	2251 N. Broad	St. Bernard	3.09 in.
DPS #4	5700 Warrington	Gentilly	4.41 in.
DPS #5	WB Intercoastal	Lower Nine	0.45 in.
DPS #6	345 Orpheum	Lakeview	4.06 in.
DPS #7	5741 Orleans	City Park	4.69 in.
DPS #11	5301 E. Sixth	Lower Coast Algiers	1.93 in.
DPS #12	7223 Pontchartrain	West End	2.56 in.
DPS #13	4201 Tall Spruce	Algiers	1.92 in.
Jahncke	Hayne @ Jahncke	NOE	0.06 in.
DPS #17 "Sta. D"	2801 Peoples	St. Roch	1.91 in.
DPS #19	4500 Florida	Bywater	0.38 in.
Central	8800 S. Claiborne	Hollygrove	2.90 in.

Drainage Pump Repairs

- 16 pumps out of service including 9 drainage pumps and 7 constant duty pumps
 - Currently under contract for repair
 - DPS #6:
 - Constant Duty Pumps #1 & #2 – Est. completion 9/5
 - Drainage Pump C – Est. completion 8/16
 - Drainage Pump D – Est. completion 9/30
 - Drainage Pump F – Est. completion 9/30
 - DPS #7:
 - Drainage Pump C – Est. Completion 8/23

Drainage Pump Repairs

- Requesting emergency procurement authorization repairs for:
 - DPS #1 – Drainage Pump #2 & Constant Duty Pump #1
 - DPS #5 – Constant Duty Pumps #2L and #2R
 - DPS #6 – Drainage Pump I
 - DPS #11 – Drainage Pump D
 - DPS #15 – Drainage Pump #3
 - DPS #20 – Drainage Pump #1
 - DPS Grant – Constant Duty Pumps #2 & #4

SWB's Power Generation System

Carrollton Power Plant:

- SWB is currently upgrading Carrollton Power Plant using a \$150 million HMGP from FEMA.
- Plan calls for taking single turbines out of service and rebuilding and returning them to service before the next is taken out of service.

SWB's Power Generation System

Carrollton Power Plant:

- Turbine #1 is a 25-cycle turbine that lost power 8/9.
 - Provided power to a majority of the City's pumping stations serving the East Bank of New Orleans
 - The system's capacity to drain storm water from the streets is diminished further for the East Bank of New Orleans, west of the Industrial Canal.
 - We are running on our last backup power source.
 - This does not affect New Orleans East, Lower Ninth Ward and Algiers.
 -

SWB's Power Generation System

Carrollton Power Plant:

- Turbine #3 is 25-cycle turbine that began losing its ability to generate electricity in May 2017 and has been out of service.
 - Turbine Rotor Repaired and delivered to CWP 8/8
 - Rotor estimated to be installed Friday 8/11
 - Install Bearings and Seals Installed by 8/14
 - Awaiting Valve Parts – No Delivery Date Yet
 - Complete 5 Days After Delivery

SWB's Power Generation System

- Turbine #4 is a 25-cycle turbine that was taken out of service in Jan. 2012. Work continues to completely refurbish it by Dec. 2017
 - In the interim, Turbines #1, #3 and #5 have been utilized during this period
 - Rehabilitation Contract with IMC Mechanical Construction
 - Working 7/12 Schedule
 - Accelerated Completion Schedule
 - Daily Progress Meetings Schedule All Activities and Availability of Materials

SWB's Power Generation System

- **Carrollton Power Plant:**
- Turbine #5 is a 25-cycle turbine that began to lose its ability to generate electricity in July 2017 and is out of service.
 - Emergency procurement repair by General Electric underway.
 - 24/7 @ 3 shifts to complete re-assembly est. 8/22
 - Align Shaft Complete est. 8/25 – Return to Service

SWB's Power Generation System

Carrollton Power Plant:

- Turbine #6 is a natural gas powered turbine that is available on standby in the event power provided by Entergy was disrupted.
 - Turbine #6 was on standby on 8/5.
 - There were no Entergy power disruptions that day.

SWB's Power Generation System

In construction

	Funding	Status
Turbine #4	\$15M	Dec. 2017
Turbine #4 Generator	\$9M	Dec. 2017
60hz Feeders	\$3.5M	Complete
Generator testing load bank	\$5.5M	June 2018
Replacement of critical feeders	\$28M	June 2019
Oak St. Intake	\$23M	June 2019
Emergency fuel storage	\$7.9M	Jan. 2019
Structural refurbishment	\$2.5M	Apr. 2018

In design

Refurbish boiler room	\$37.5M	bid Oct. 2017
Turbine #5 refurbishment	\$15.4M	Jan. 2019
Turbine #3 refurbishment	\$21.2M	July 2018

SWB's Power Generation System

Power Plant Resiliency Efforts

- Entergy dedicated substation site identified on Carrollton Power Plant campus. SWB preparing site and Entergy is designing the substation
- Turbine #6 modifications are part of \$37.7M Power House General project with bid going out Oct. 2017.
- Investigating Availability of Temporary Standby Power Generators and Frequency Converters and Requesting Emergency Procurement Authorization