

Lake Pontchartrain Foreshore Protection Repair Pilot Historical Weather Summary

Introduction

The HydroTurf® Z Advanced Revetment System (HT) is installed at a 4,800 square-foot Erosion Repair Pilot Test project (hereafter referred to as the site, demo, or pilot) along the southern coast of Lake Pontchartrain in New Orleans, LA (30.0289, -90.2052). The HT installation took place in July of 2020, and the project was fully installed by July 17th, 2020.

The downslope extent of the HydroTurf Pilot Project installation has an elevation of approximately 1.5 feet (NAVD88). The upslope elevation is 2.8 feet. Site elevation data was estimated using the USACE *Levee Foreshore Protection Cross-Sections Stations 1+00-330+00 and 340+00-374+00 East Jefferson Levee District (Reaches 1-4) Jefferson Parish Louisiana* survey completed by Linfield, Hunter & Junius, Inc., Consulting Engineers and Architects August 21, 2017 and the construction drawings, *Southeast Louisiana Flood Protection Authority East Jefferson Lakefront Foreshore Protection Erosion Repair Pilot Test* dated November 27, 2019.

Since the HT system has been in place, New Orleans and the surrounding area has experienced multiple severe weather events. The Pilot Project can be seen in Figure 1 below, and the following report provides figures detailing the weather conditions experienced at the site. Wind and rain data were collected from the Louis Armstrong New Orleans International Airport (4.06 miles away). Additional wind data and tidal information were collected from the New Canal Station, LA, NOAA tidal gauge, Station ID 8761927 (5.50 miles away, *Lat/Long: (30.027027, -90.113464)*).



Figure 1. HydroTurf® pilot project installation (July, 2020)



Figure 2. Location of HydroTurf® Pilot Project

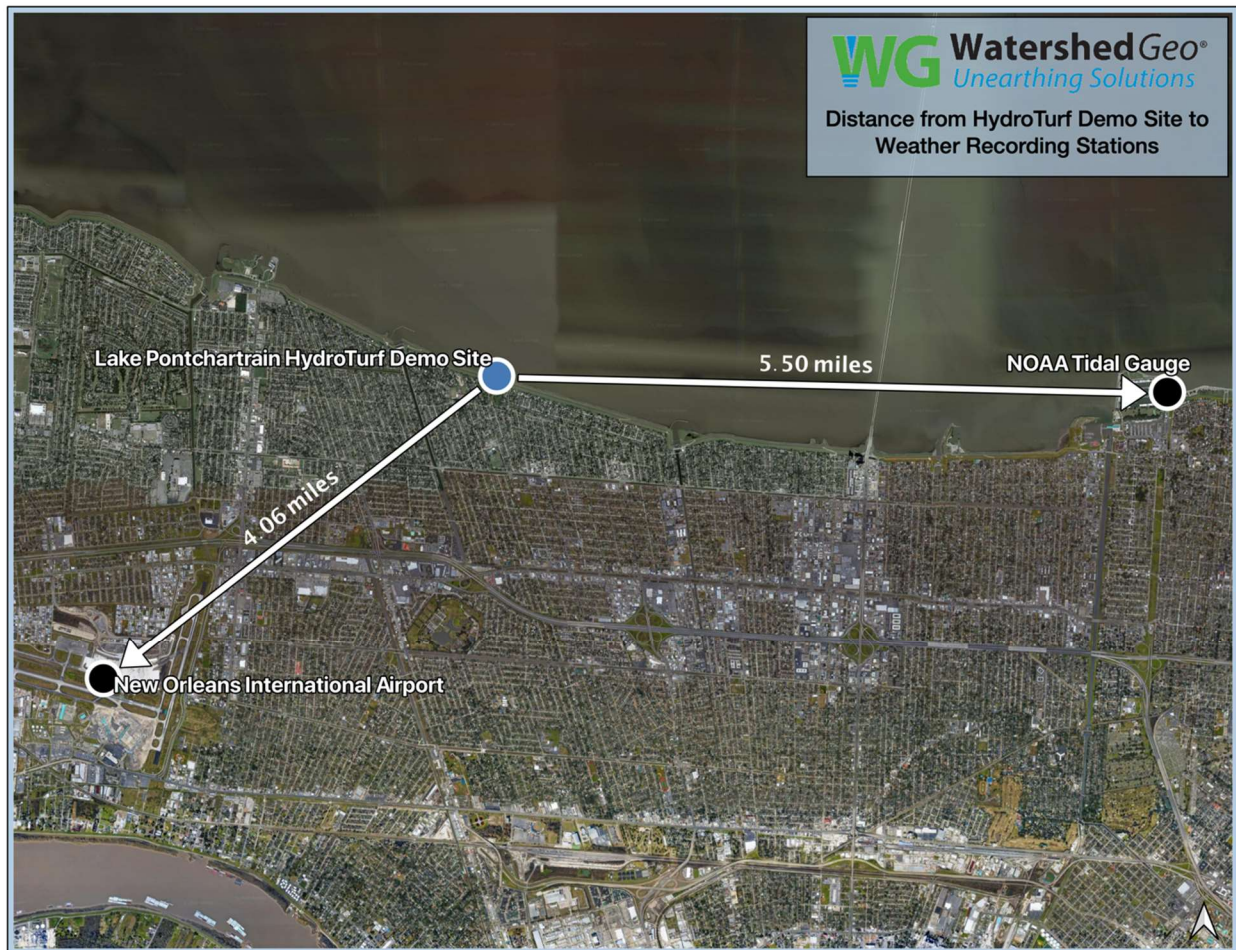


Figure 3. Distance from Pilot Project to weather gauges

**Historical Wind Speeds - New Orleans International Airport
(July 1, 2020 - February 23, 2022)**

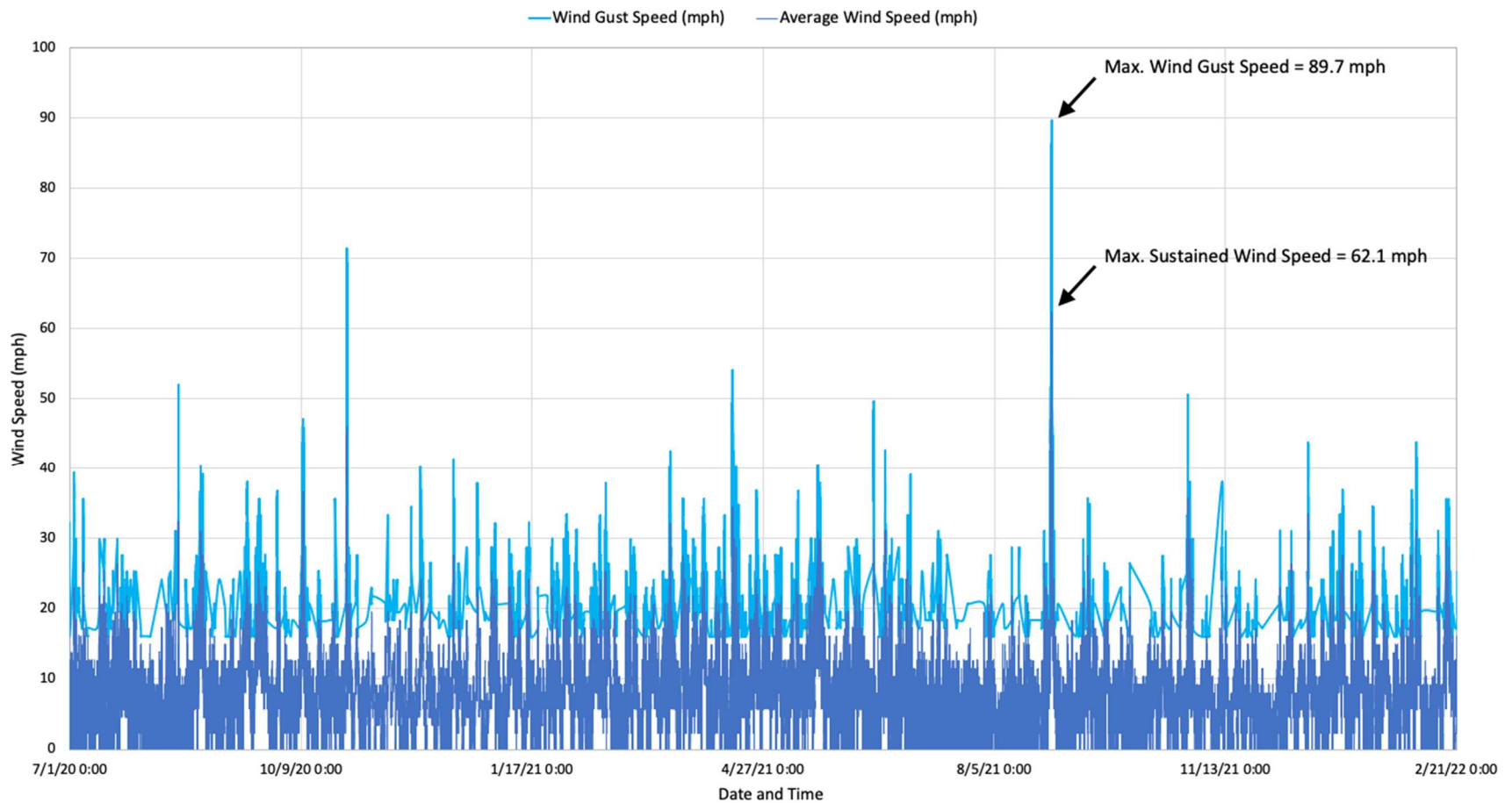


Figure 4. Historical wind speeds recorded at New Orleans International Airport (4.06 miles from site)

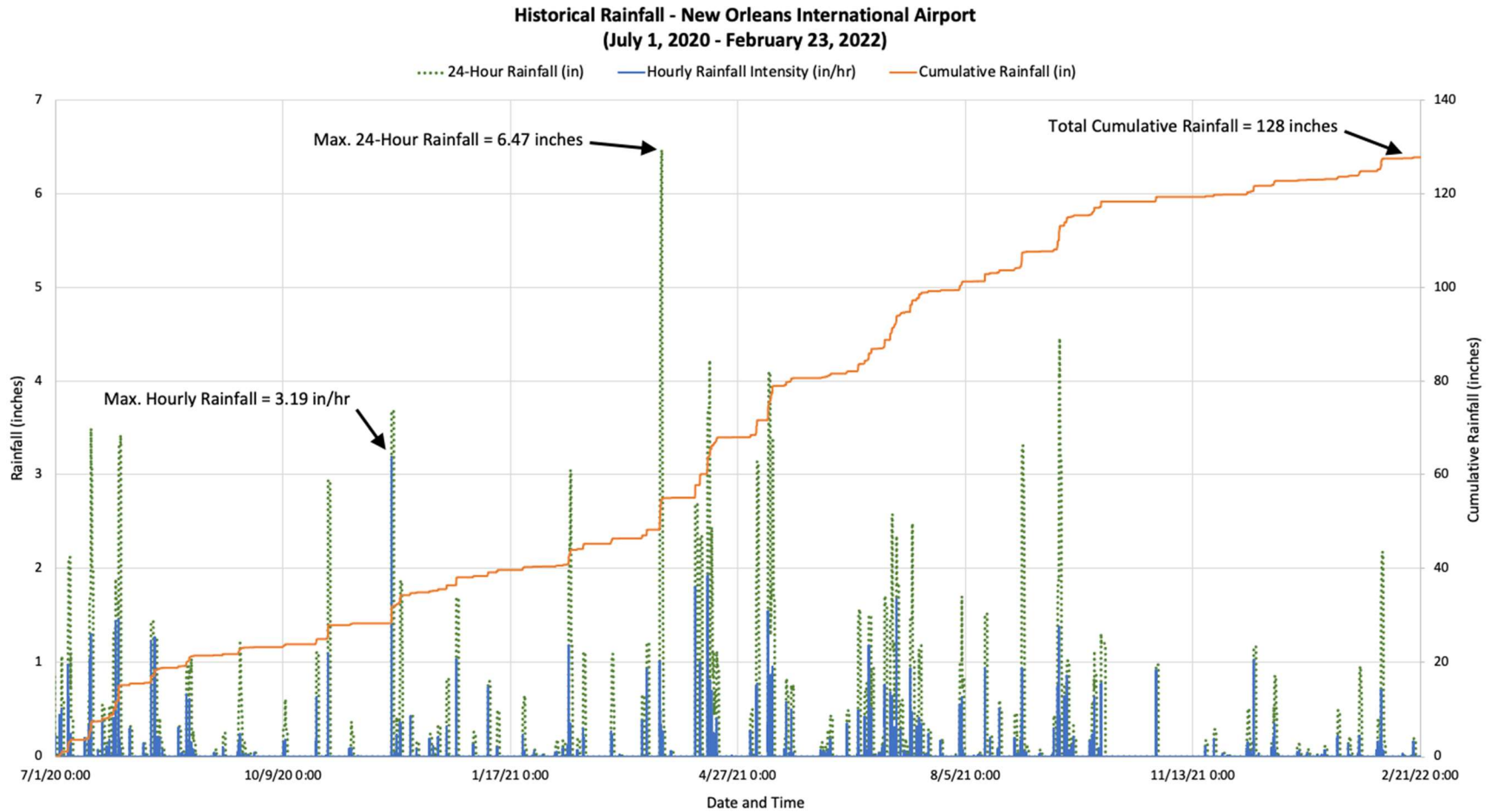


Figure 5. Historical precipitation recorded at New Orleans International Airport (4.06 miles from site)

Table 1. Summary of peak weather values (7/1/2020 – 2/23/2022)

	Maximum Sustained Wind Speed (mph)	Peak Wind Gust Speed (mph)	Maximum Rainfall Intensity (in/hr)	Maximum 24-Hour Rainfall (in)	Cumulative Total Rainfall During Storm Event (in)
Value	62.1	89.7	3.19	6.47	128
Date of Occurrence	8/29/2021	8/29/2021	11/25/2020	3/24/2021	n/a

Table 2. Ten highest tides recorded at local NOAA tidal station

Top Ten Highest Tides Since Installation Completion (7/1/20 - 3/7/22) Datum = MSL					
Rank	Date	Highest Water Level (MSL, ft)	Highest Water Level (NAVD88, ft)	*HydroTurf Storm Inundation Depth (ft)	Associated Named Storm Event
1	8/30/21	5.71	5.67	4.16	Hurricane Ida
2	9/21/20	4.06	4.02	2.52	Tropical Storm Beta
3	5/22/21	3.98	3.94	2.44	n/a
4	9/16/20	3.98	3.94	2.44	Tropical Storm Beta
5	9/22/20	3.87	3.83	2.33	Tropical Storm Beta
6	5/21/21	3.78	3.74	2.24	n/a
7	8/29/21	3.75	3.71	2.21	Hurricane Ida
8	9/23/20	3.30	3.26	1.76	Tropical Storm Beta
9	5/20/21	3.23	3.19	1.69	n/a
10	8/27/20	3.06	3.02	1.52	Hurricane Ida

Note(s)

1. Tidal inundation data obtained from the NOAA New Canal Station (Station ID: 8761927).
2. MSL = NAVD88 + 0.04 ft at NOAA Station ID 8761927.
3. A series of thunderstorms occurred between May 15-19, 2021, resulting in widespread flash flooding.

* During Hurricane Ida, the Pilot HydroTurf® Test Plot would have been completely submerged based on nearby NOAA tidal elevations. In addition, wave action would have been acting upon the Test Plot during Hurricane Ida and during all or most of the remaining “Top Ten” events.