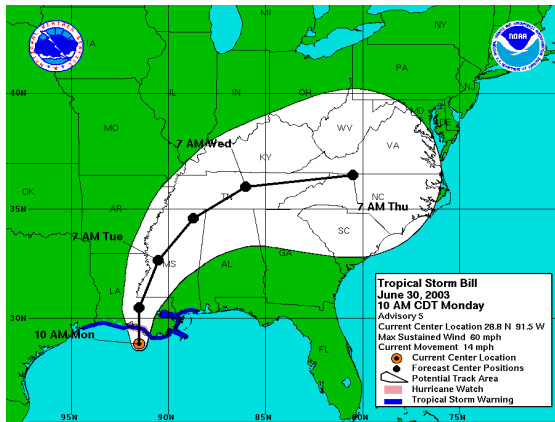


A REPORT ON THE EFFECTS OF TROPICAL STORM BILL ON WATER LEVELS ALONG THE LOUISIANA COAST



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**National Ocean Service
CO-OPS
Center for Operational Oceanographic
Products and Services**

 NOAA National Ocean Service Center for Operational Oceanographic Products and Services

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CO-OPS Tide Gauge Data for Tropical Storm Bill

NOAA's Center for Operational Oceanographic Products And Services (CO-OPS) maintains a network of water level gauges along the Gulf Coast from Brownsville, TX eastward to Key West, FL. During the hurricane season (June through November) CO-OPS personnel actively maintain and monitor these gauges which provide useful information about water levels along the Gulf Coast during storm events.

Presently there are 29 gauges in the Gulf Coast region. This report includes data from the four Louisiana water levels stations that are actively maintained by NOAA/NOS/CO-OPS in the gulf region. It also includes data from one Mississippi water level station that was impacted by Tropical Storm Bill. Additional Army Corps of Engineer Stations are included for comparison. ***Be advised that NOS/CO-OPS stations are referenced to MLLW and Army Corps of Engineer stations are referenced to NGVD-29 and data comparisons should be limited ONLY to water level range and time of occurrence.*** The locations of the selected water level stations with calculated storm surges are presented in figure 1 below.

Figure 1. Locations of 6 NOAA/NOS/CO-OPS and 7 Army Corps of Engineer Water Level Stations and recorded storm surge values resulting from Tropical Storm Bill which made landfall near Morgan City, LA on June 30, 2003.

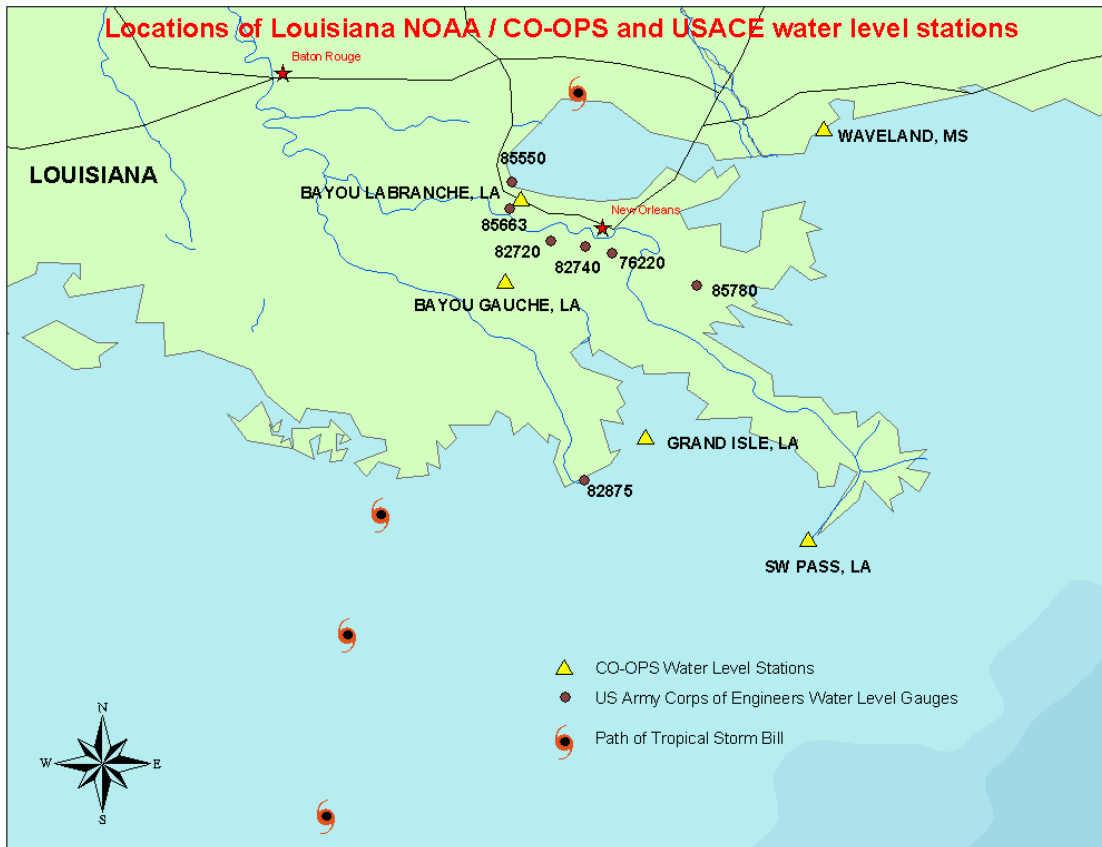
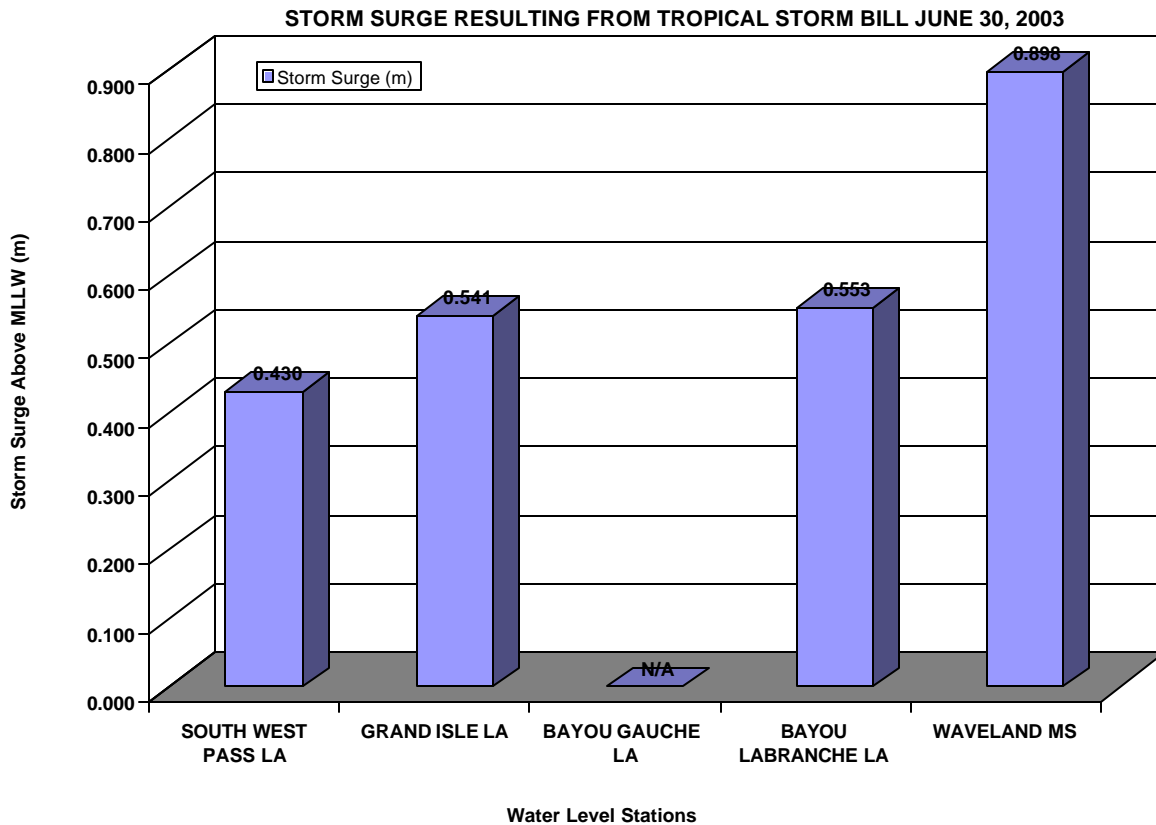


Table 1 and Figure 2 below summarize the peak observed, predicted and storm surge water levels for the 5 CO-OPS water level stations included in this report. Hydrographs of individual water level stations follow Figure 2.

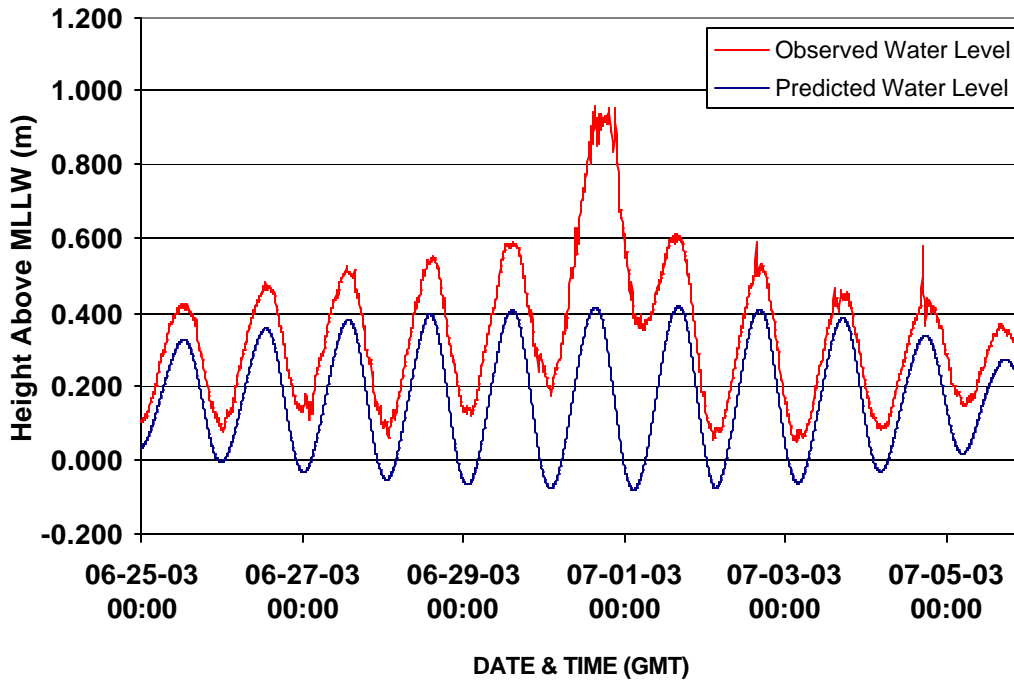
Table 1. Water Level Data for Tropical Storm Bill, June 30, 2003

Tide Gauge Location	Station ID	Latitude	Longitude	Date & Time (GMT)	Elevation Above MLLW (m)		
					Observed	Predicted	Storm Surge
SOUTH WEST PASS LA	8760943	28 55.5 N	89 25.1 W	06-30-03 15:36	0.924	0.494	0.430
GRAND ISLE LA	8761724	29 15.8 N	89 57.4 W	06-30-03 15:24	0.957	0.416	0.541
BAYOU GAUCHE LA	8762482	29 46.6 N	90 25.1 W	06-30-03 23:42	0.310	N/A	N/A
BAYOU LABRANCHE LA	8762372	30 3.0 N	90 22.1 W	06-30-03 23:18	0.800	0.247	0.553
WAVELAND MS	8747766	30 16.9 N	89 22.0 W	07-01-03 00:00	1.522	0.624	0.898

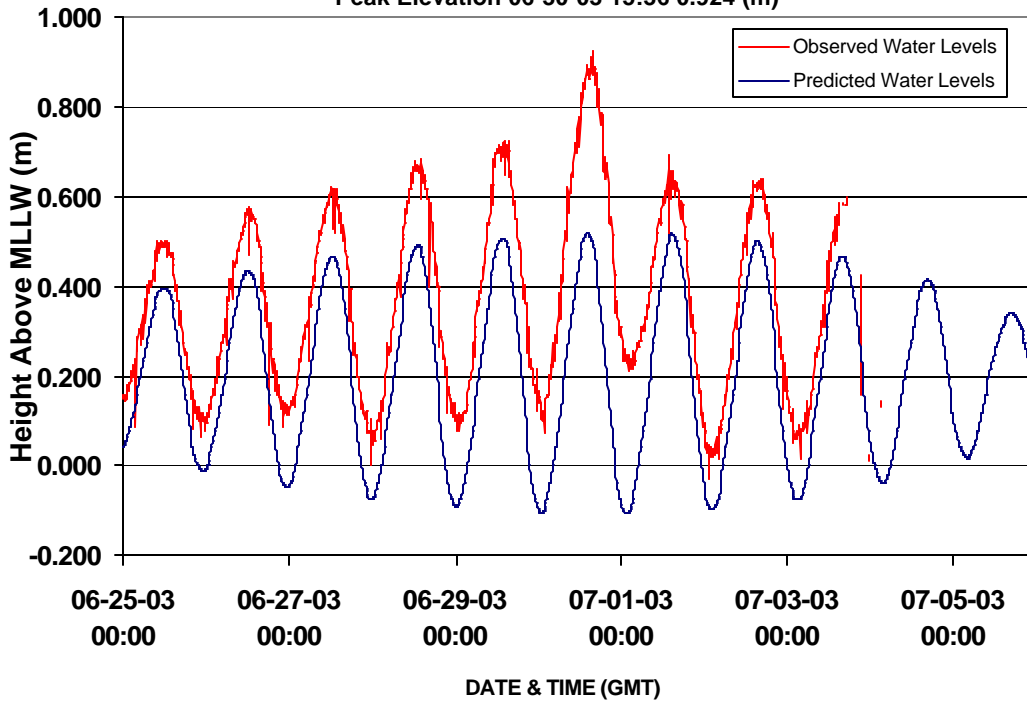
Figure 2 Maximum storm surge in meters (m) at water level stations during Tropical Storm Bill, June 30, 2003



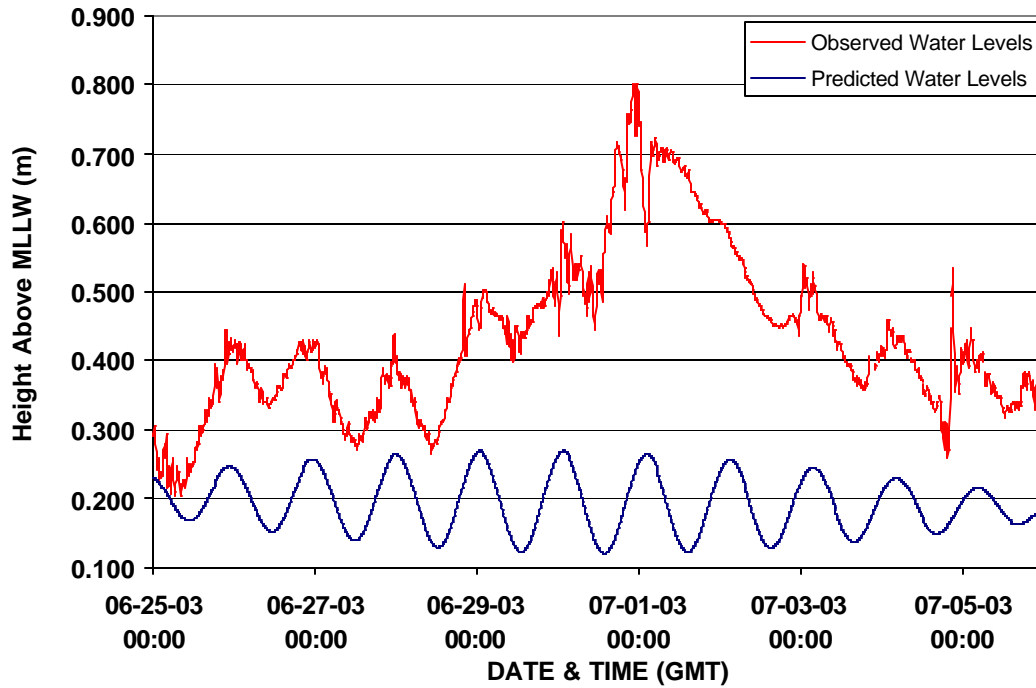
8761724 GRAND ISLE, LA Observed -vs- Predicted Water Levels
Peak Elevation 06-30-03 15:24 0.957(m)



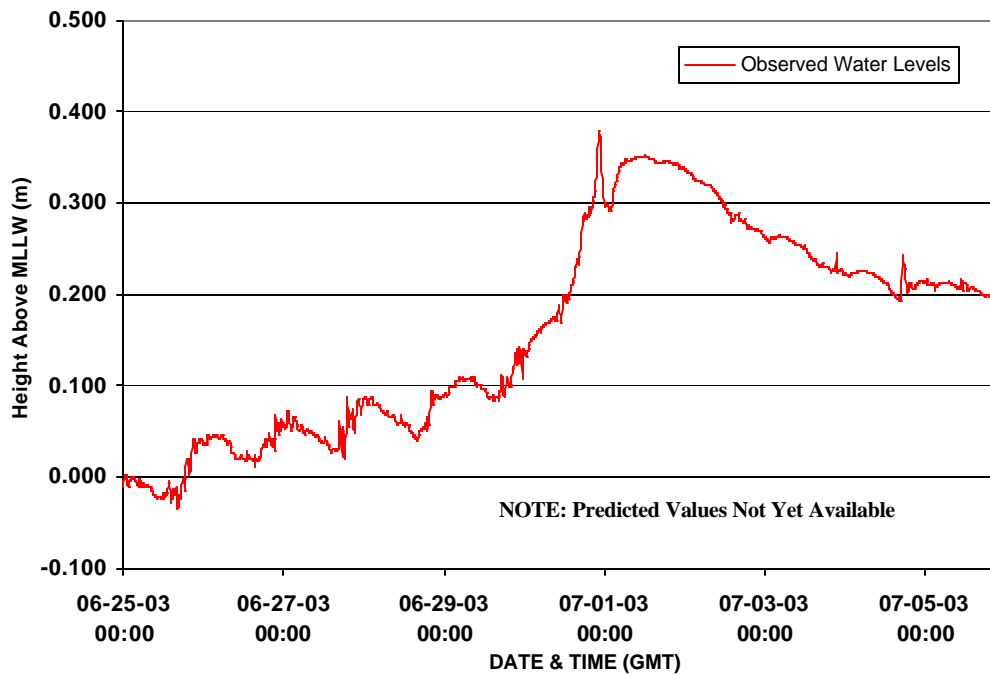
8760943 SW PASS LA Observed -vs- Predicted Water Levels
Peak Elevation 06-30-03 15:36 0.924 (m)



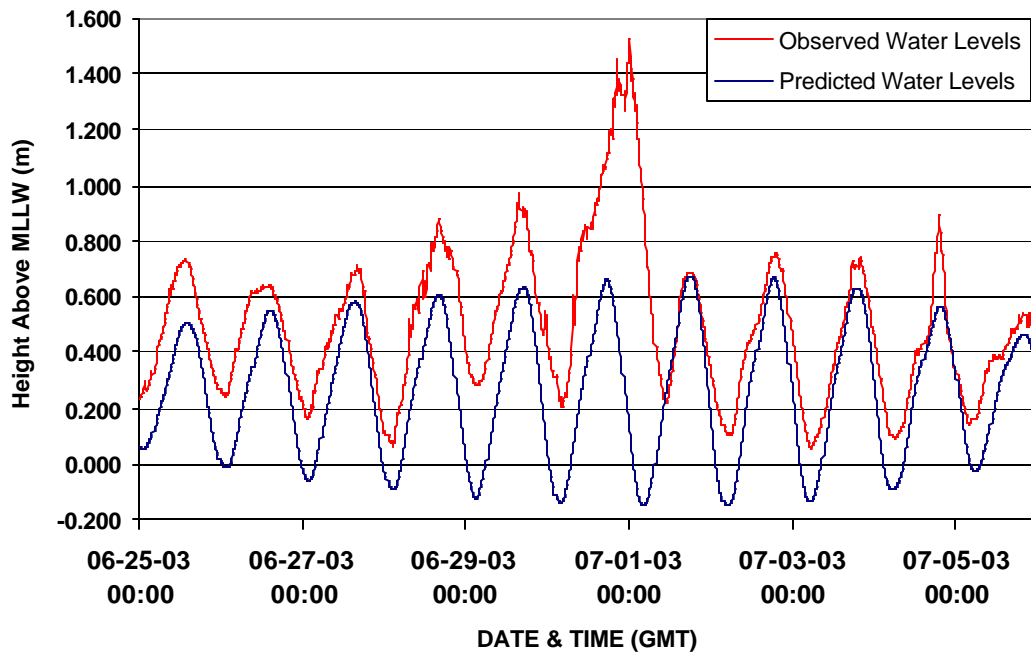
8762372 BAYOU LABRANCHE LA Observed -vs- Predicted Water levels
Peak Elevation 06-30-03 23:18 0.800 (m)



8762482 BAYOU GAUCHE LA - Observed -vs- Predicted Water Levels
Peak Elevation 06-30-03 23:42 0.310 (m)



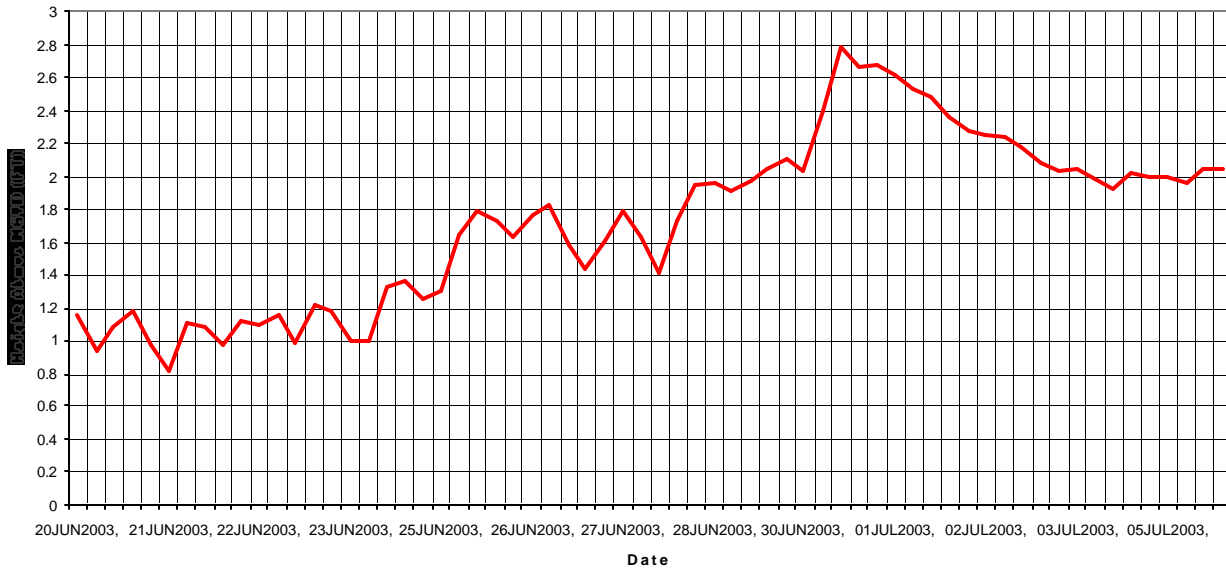
8747766 WAVELAND, MS Observed -vs- Predicted Water Levels
Peak Elevation 07-01-03 00:06 1.522 (m)

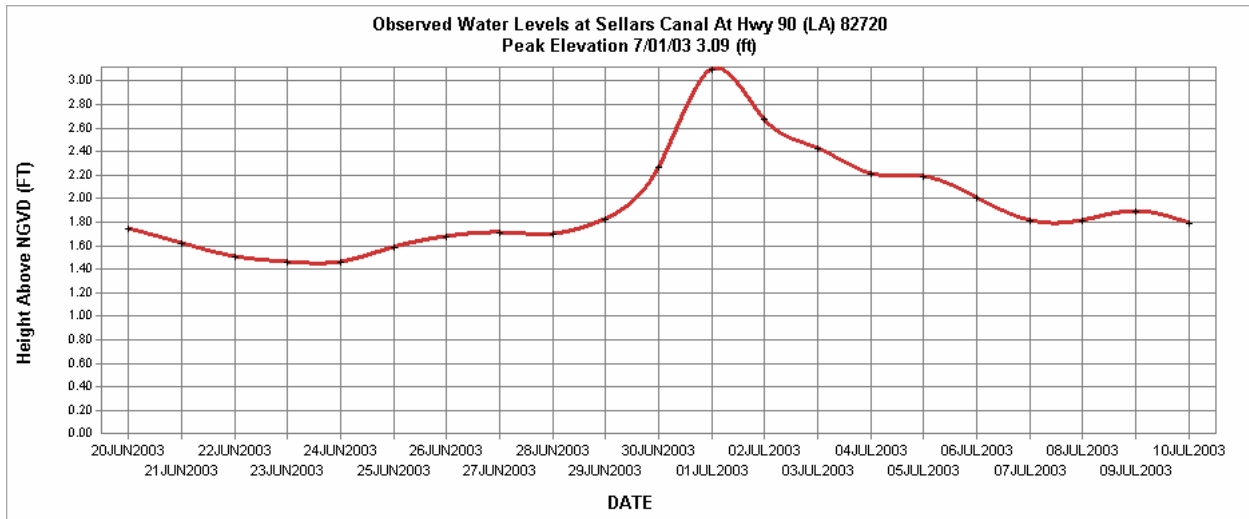
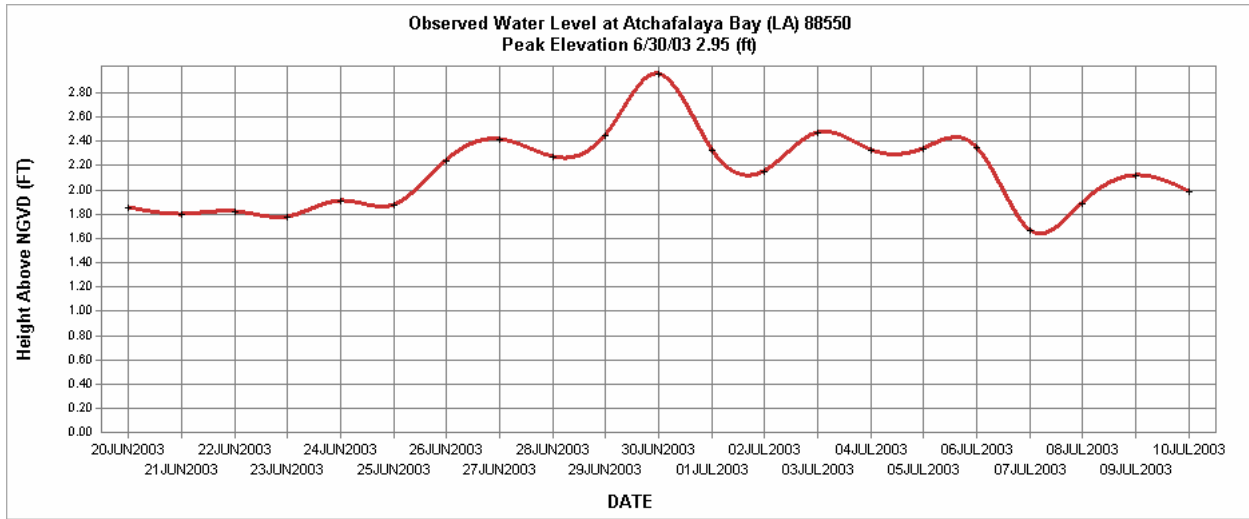


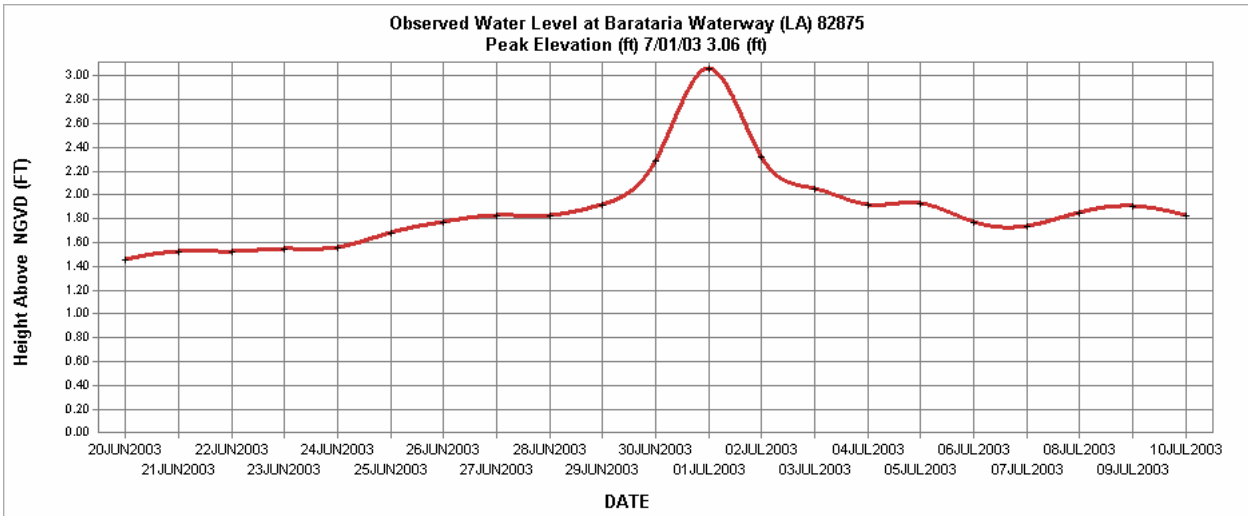
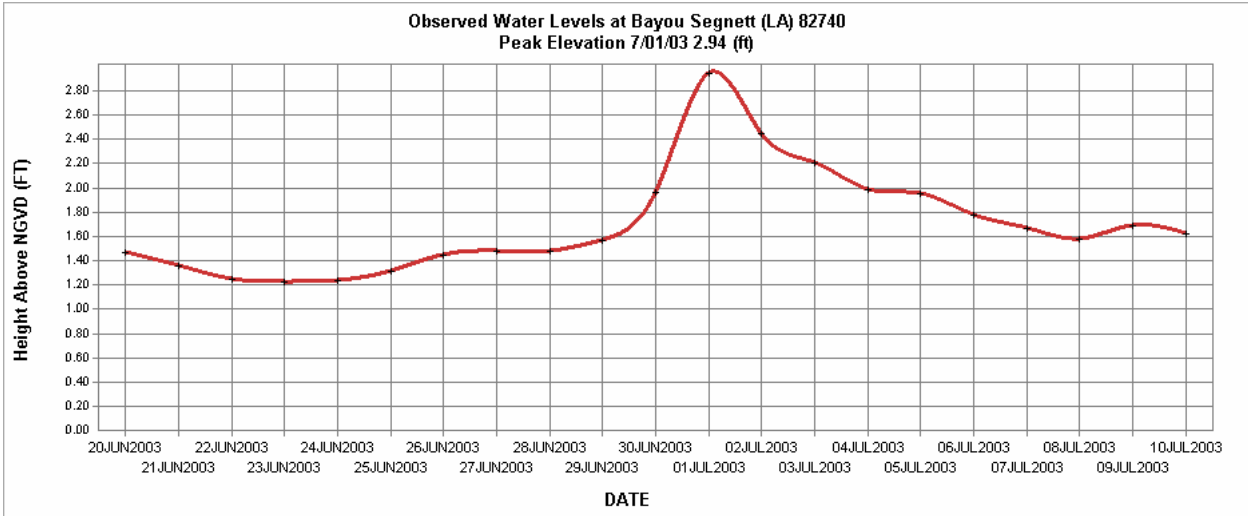
The following hydrographs depict observed water levels recorded at selected stations operated by the Army Corps of Engineers / New Orleans District (CEMVN-ED). All CEMVN-ED hydrographs are in units of feet and these stations are located in close geographic proximity to the NOS/CO-OPS gauges listed in this report. The CEMVN-ED gauge data is on the datum NGVD-29, in units of feet and on Central Standard Time (CST), while CO-OPS data is on MLLW, in units of meters and on Greenwich Mean Time (GMT). Since the data are on different zeros, data comparisons should be limited ONLY to water level range and time of occurrence.

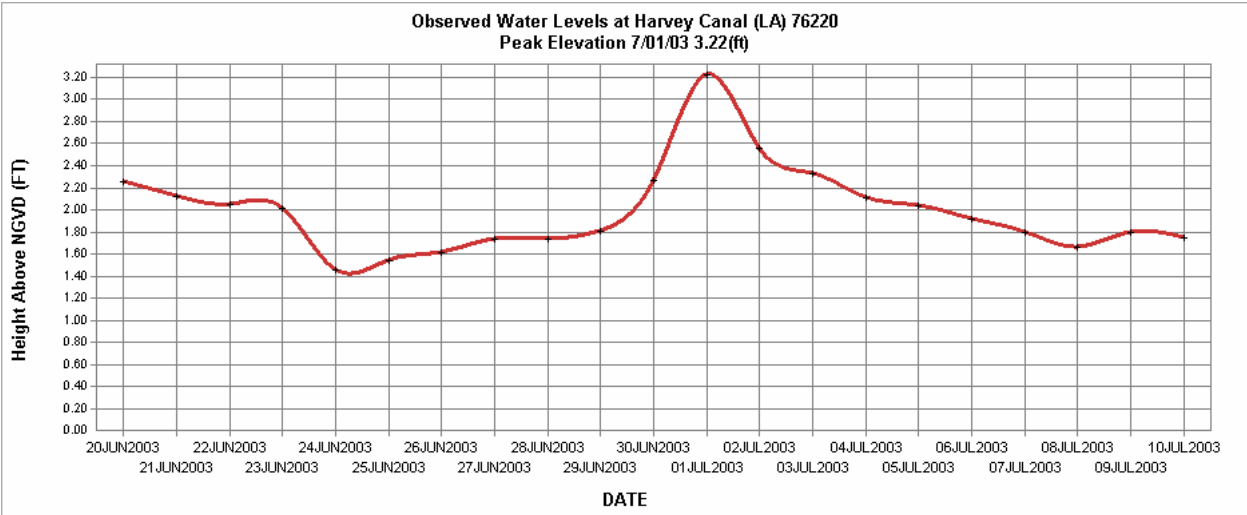
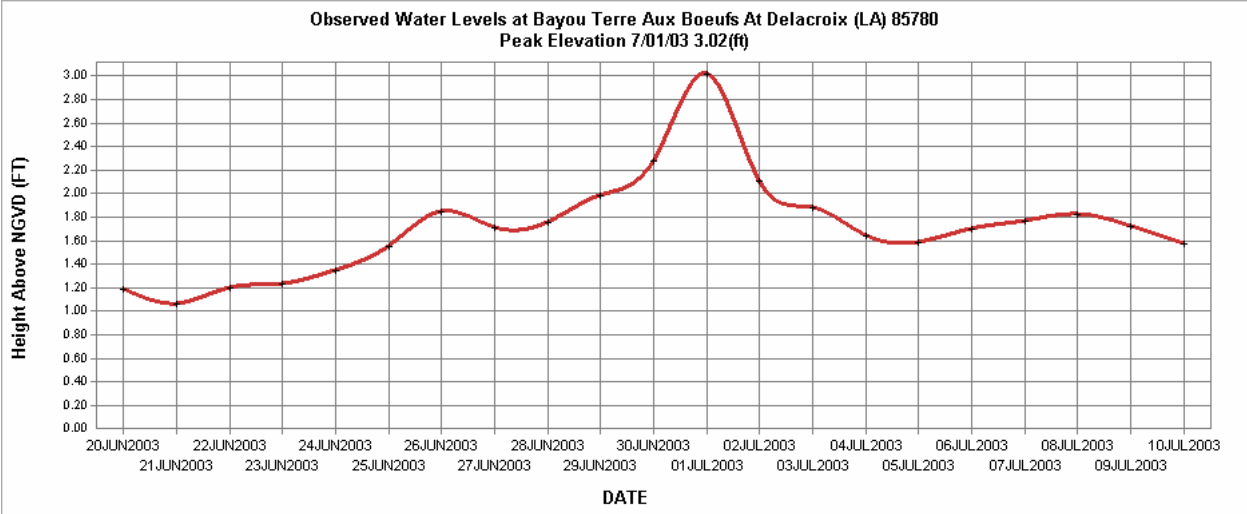
NOTICE: All data contained herein is preliminary in nature and therefore subject to change. The data is for general information purposes ONLY and SHALL NOT be used in technical applications such as, but not limited to, studies or designs. All critical data should be obtained from and verified by the United States Army Corps of Engineers, New Orleans District, Engineering Division, Hydrology and Hydraulics Branch, P.O. Box 60267, New Orleans, LA., 70160-0267. The United States Government assumes no liability for the completeness or accuracy of the data contained herein and any use of such data inconsistent with this disclaimer shall be solely at the risk of the user.

**Observed Water Level at Bayou Trepagnier (LA) 85663
Peak Elevation 6/30/03 2.78 (ft)**



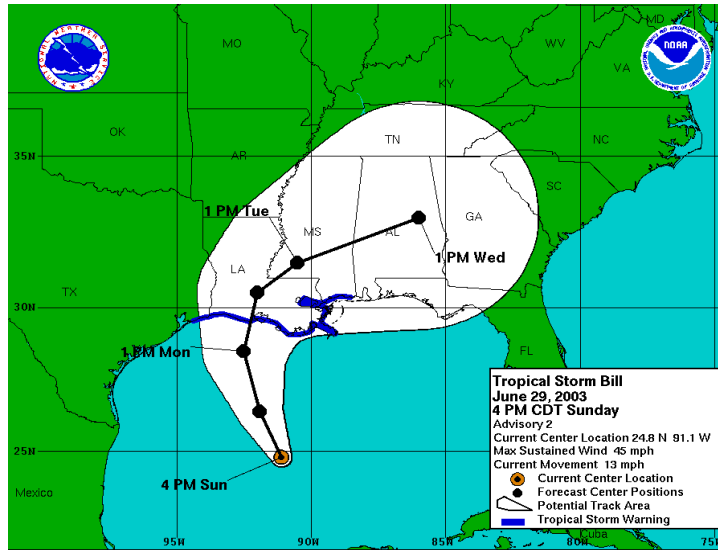






The third named Tropical System of the 2003 Atlantic Hurricane Season, Bill, originated on June 29, 2003 in the Central Gulf at 23.5 N and 91.5 W. See Figure 3 below.

Figure 3. Origin of Tropical Storm Bill June 29, 2003.



Tropical Storm Bill continued on a northerly heading and was projected to hit the coast of Louisiana on June 30, 2003. See figure 4 below.

Figure 4. Projected path of Tropical Storm Bill June 29, 2003



Tropical Storm Bill made landfall south of Morgan City, LA on the morning of June 30, 2003 with maximum sustained winds of 60 mph and minimum central pressure of 997 MB. See figure 5 and 6 below.

Figure 5. Landfall of Tropical Storm Bill June 30, 2003 near Morgan City, LA.

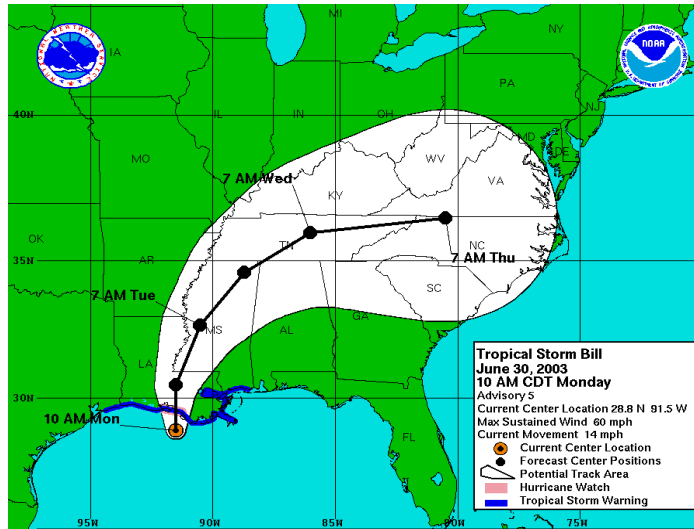


Figure 6. Tropical Storm Bill makes landfall near Morgan City, LA June 30, 2003



During landfall of Tropical Storm Bill NOAA / NOS / CO-OPS water level stations along the Louisiana coast also recorded barometric pressure. Below are examples of this data from the East Bank 1, Norco, Bayou Labranche, LA (ID 8762372) and West Bank 1, Bayou Gauche, LA (ID 8762482) water level stations. See figures 7 & 8 below.

Figure 7. Water level above MLLW and barometric pressure recorded at East Bank 1, Norco, Bayou Labranche, LA during landfall of Tropical Storm Bill June 30, 2003.

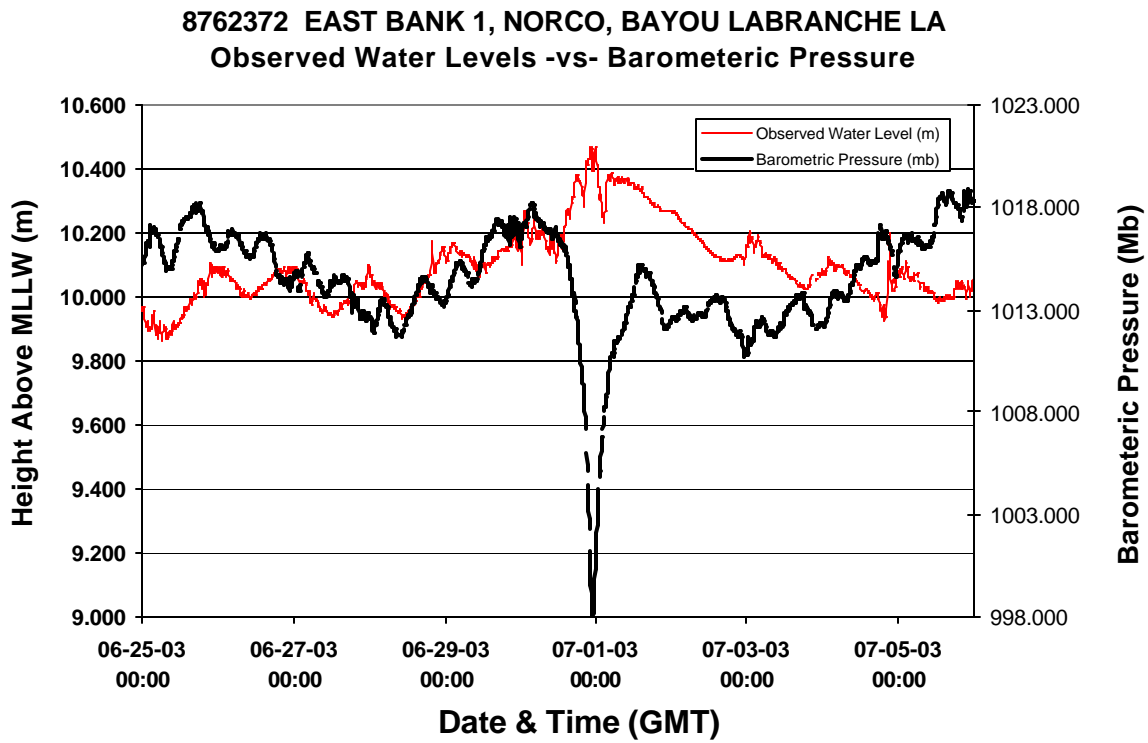
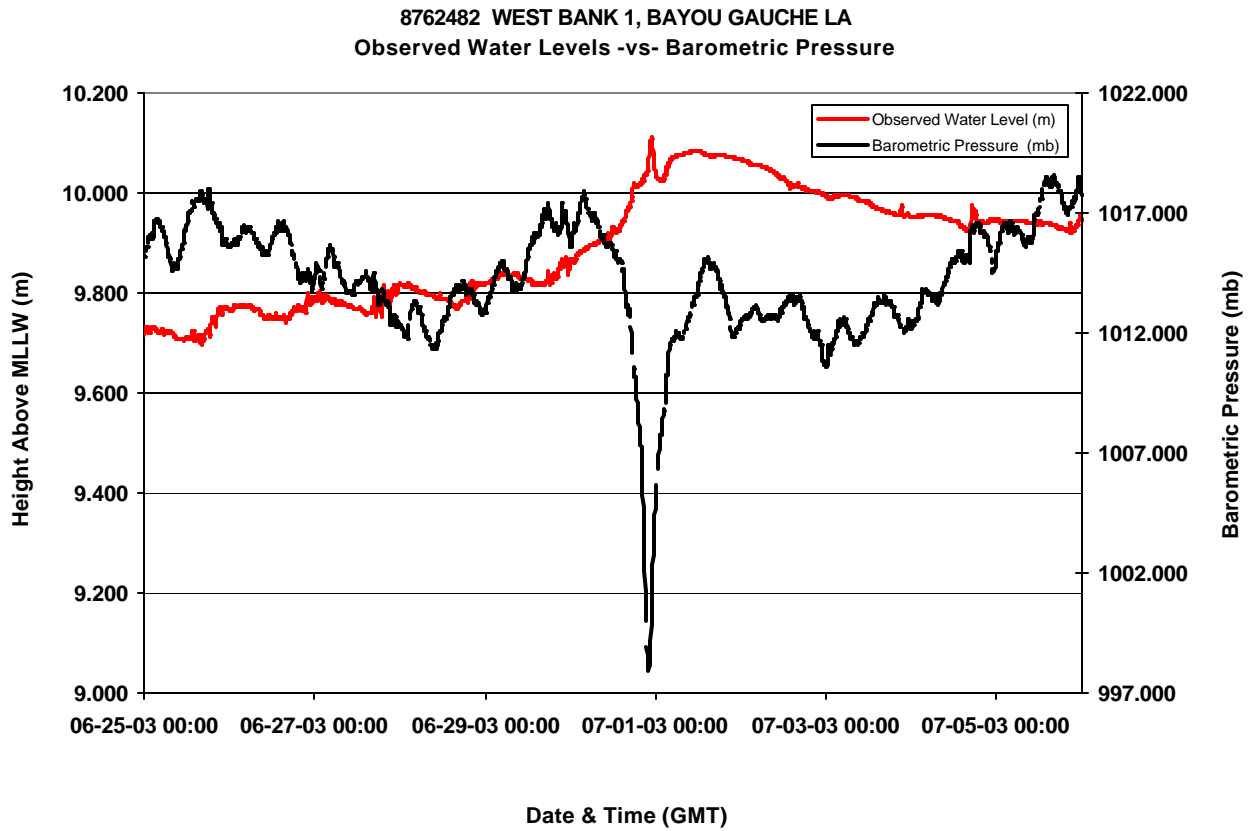


Figure 8. Water level above MLLW and barometric pressure recorded at West Bank 1, Bayou Gauche, LA water level station during landfall of Tropical Storm Bill June 30, 2003.



Cover graphics courtesy of NOAA/NWS. ACE hydrographs courtesy of United States Army Corps of Engineers, New Orleans District. Figures 3-6 courtesy of NOAA/NWS.