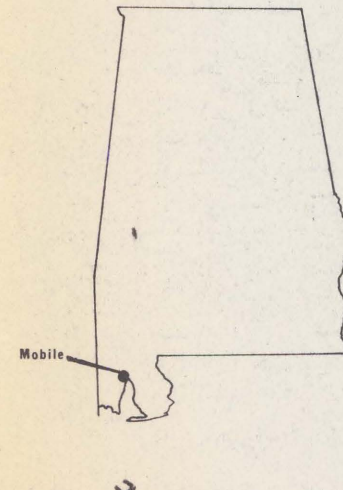


Index of Mobile city maps for which hydrologic data for the flood of April 13, 1980, are shown.



Photograph No. 1
Three Mile Creek at Stone Street during flood
of April 13, 1980.

Photograph courtesy of The Mobile Press Register.



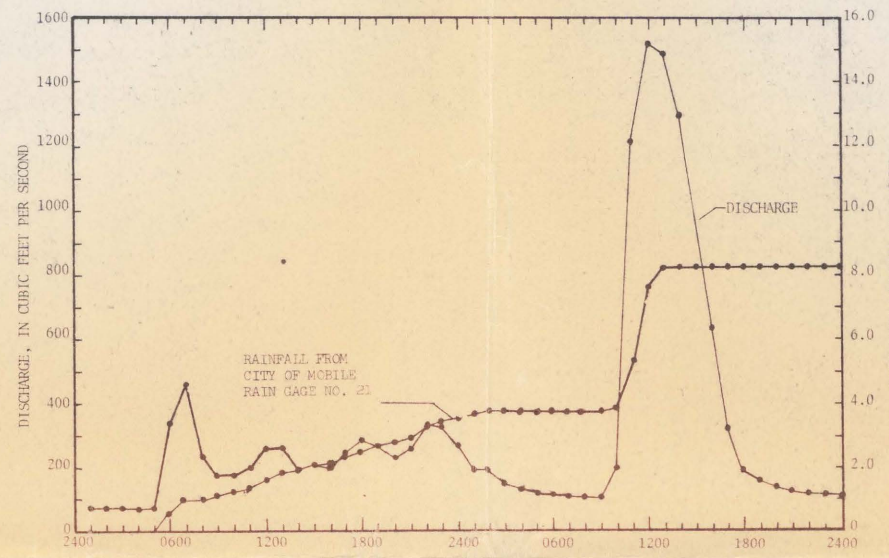
Photograph No. 2
Twelve Mile Creek downstream from Old Shell Road
during flood of April 13, 1980.

Photograph courtesy of The Mobile Press Register.

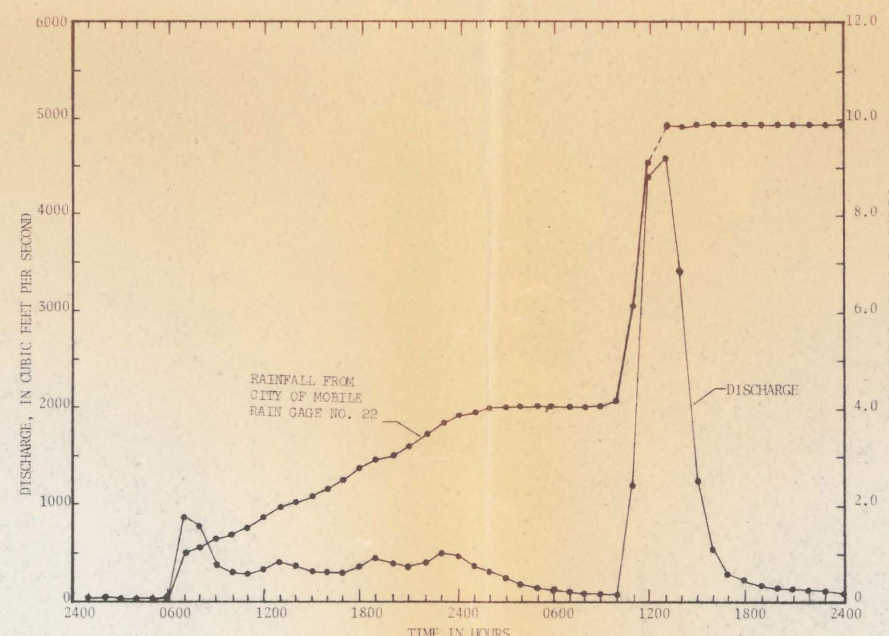


Photograph No. 3
Three Mile Creek at Zeigler Boulevard downstream from
Municipal Park lake just after flood of April 13, 1980.

Photograph furnished by U.S. Geological Survey.



SITE 1 STA. 02471005
ESLAVA CREEK AT SOUTH SAGE AVE., AT MOBILE, ALA.
HYDROGRAPHS OF DISCHARGE AND CUMULATIVE RAINFALL,
FLOOD OF APRIL 12-13, 1980.



SITE 3 STA. 02471004
MONTLAMAR CREEK AT U.S. HIGHWAY 90, AT MOBILE, ALA.
HYDROGRAPHS OF DISCHARGE AND CUMULATIVE RAINFALL,
FLOOD OF APRIL 12-13, 1980.

FLOOD OF APRIL 13, 1980
MOBILE, ALABAMA
BY C. H. HANMIM AND G. H. NELSON

INTRODUCTION
One of the worst floods in the city of Mobile's history occurred Sunday afternoon April 13, 1980. The flood resulted from excessive rainfall produced by severe storm systems that traveled across Mobile County during April 12-13, 1980.

The storm grew in intensity Saturday afternoon and Sunday morning, and by late Sunday afternoon a total of 10.40 inches of rainfall was recorded for the 2-day storm by the National Weather Service.

PURPOSE AND SCOPE
This report presents a compilation of hydrologic data for the city of Mobile for the flood of April 13, 1980. These data consist of rainfall information, peak discharge determinations, discharge hydrographs for two U.S. Geological Survey gaging stations, peak water-surface elevations, and maps of the area affected by the flooding.

COOPERATION AND ACKNOWLEDGMENT
The U.S. Geological Survey in cooperation with the U.S. Army Corps of Engineers, Mobile District, and assisted by the City of Mobile Engineering Department determined the peak water-surface elevations from floodmarks set immediately following the flood. The City of Mobile Engineering Department furnished rainfall records for 5 rain-gauge stations and vertical control data used in the flood-peak survey. The City of Mobile Planning Commission provided base maps on which data are presented. Photographs of the flood are courtesy of the Mobile Press Register.

USE OF METRIC UNITS OF MEASUREMENT
The compilations used in this report were made in inch-pound units of measurement. Conversion factors for metric units from inch-pound units are listed below. Multiply the inch-pound units by the conversion factor to obtain metric units.

Inch-pound units	Conversion factor	Metric units
inch (in)	25.4	millimeter (mm)
feet (ft)	0.3048	meter (m)
miles (mi)	1.609	kilometer (km)
square mile (mi ²)	2.590	square kilometer (km ²)
cubic feet per second (ft ³ /s)	0.02832	cubic meters per second (m ³ /s)

RAINFALL
The rain began intermittently early Friday, April 12, 1980. Total rainfall for the day was only 0.10 inch recorded at the National Weather Service station at Bates Field Airport approximately one mile west of the corporate limits. The rains continued throughout Saturday becoming steady and more intense. Two separate storms were caused by the weather system. The first storm began about 5 a.m. Saturday, April 12, and ended about 2 a.m. Sunday, April 13; sporadic rainfall for this storm ranged between 3.8 and 4.2 inches in Mobile. The second storm began about 9 a.m. Sunday, April 13, and continued into the early afternoon. Rainfall during the second storm ranged between 4.5 and 6.6 inches for a 4-hour period. The rate of rainfall for the two separate storms has recurrence intervals of approximately 10 and 50 years, respectively.

Cumulative hourly rainfall data furnished by the City of Mobile Engineering Department and the National Weather Service are listed below:

April 12, 1980							April 13, 1980						
Time	Filter Plant	ESC	#2	#21	#22	National Weather Service Mobile, Ala.	Time	Filter Plant	ESC	#2	#21	#22	National Weather Service Mobile, Ala.
0100	0	0	0	0	0	0	0100	3.84	4.09	3.71	3.64	3.91	3.75
0200	0	0	0	0	0	0	0200	3.90	4.20	4.05	3.74	4.00	3.81
0300	0	0	0	0	0	0	0300	3.90	4.20	4.06	3.74	4.01	3.81
0400	0	0	0	0	0	0	0400	3.90	4.20	4.06	3.74	4.02	3.81
0500	0	0	0	0	0	0	0500	3.90	4.20	4.06	3.74	4.03	3.81
0600	0.82	0.40	0.17	0.59	0.12	0.45	0600	3.90	4.21	4.06	3.74	4.05	3.81
0700	1.18	1.13	1.11	1.00	1.02	0.65	0700	3.90	4.21	4.06	3.74	4.05	3.81
0800	1.32	1.29	1.15	1.06	1.13	0.71	0800	3.90	4.21	4.06	3.74	4.05	3.81
0900	1.40	1.44	1.26	1.11	1.29	1.11	0900	3.90	4.21	4.06	3.74	4.05	3.81
1000	1.52	1.64	1.39	1.24	1.41	1.24	1000	4.40	4.30	4.16	3.82	4.15	4.12
1100	1.70	1.77	1.55	1.59	1.55	1.59	1100	6.95	5.67	4.63	5.34	6.12	6.63
1200	1.87	2.00	1.75	1.59	1.77	1.57	1200	9.17	8.78	7.86	7.59	9.19	9.74
1300	2.05	2.16	1.96	1.82	1.78	1.75	1300	10.47	8.98	8.76	8.26	9.85	10.40
1400	2.17	2.23	2.06	1.90	2.07	1.87	1400	10.45	8.99	8.76	8.26	9.85	10.40
1500	2.29	2.42	2.21	2.05	2.19	2.05	1500	10.45	9.00	8.76	8.26	9.85	10.40
1600	2.42	2.55	2.31	2.14	2.33	2.16	1600	10.45	9.00	8.76	8.26	9.85	10.40
1700	2.65	2.78	2.54	2.31	2.50	2.37	1700	10.45	9.00	8.76	8.26	9.85	10.40
1800	2.80	3.00	2.66	2.51	2.75	2.59	1800	10.45	9.00	8.76	8.26	9.85	10.40
1900	2.97	3.17	2.81	2.69	2.93	2.77	1900	10.45	9.00	8.76	8.26	9.85	10.40
2000	3.05	3.28	2.91	2.79	3.03	2.86	2000	10.45	9.00	8.76	8.26	9.85	10.40
2100	3.20	3.48	3.08	2.94	3.20	3.03	2100	10.45	9.00	8.76	8.26	9.85	10.40
2200	3.45	3.73	3.33	3.23	3.47	3.28	2200	10.45	9.00	8.76	8.26	9.85	10.40
2300	3.61	3.95	3.52	3.42	3.67	3.49	2300	10.45	9.00	8.76	8.26	9.85	10.40
2400	3.73	4.03	3.65	3.50	3.85	3.61	2400	10.45	9.00	8.76	8.26	9.85	10.40

Cumulative rainfall recorded at the city rain gauge No. 21 is presented graphically with the discharge hydrograph for Eslava Creek (site 1) at South Sage Avenue and the cumulative rainfall for the city rain gauge No. 22 is presented graphically with the discharge hydrograph for Montlamar Creek (site 3) at U.S. Highway 90. Location of the five rain gauges operated by the City of Mobile Engineering Department and the one operated by the National Weather Service are shown on the adjacent index map.

DISCHARGE
Flood discharge hydrographs are shown for two U.S. Geological Survey gaging stations on Montlamar Creek and Eslava Creek in Mobile. Peak discharges determined at three streams in Mobile and one in Mobile county are summarized below. Site numbers correspond to those on the adjacent index map.

Stream and location	D.A. (ft)	Stage (NOVD)	Discharge (ft ³ /s)	Unit discharge (ft ³ /s/mi ²)
Site 1 Sta. No. 02471041 Eslava Creek at South Sage Avenue, at Mobile, Ala.	1.55	21.73	1,510	974
Site 2 Sta. No. 0247104315 Woodcock Creek at Airport Boulevard, at Mobile, Ala.	1.85	18.90	954	516
Site 3 Sta. No. 02471065 Montlamar Creek at U.S. Highway 90, at Mobile, Ala.	8.26	31.54	4,600	557
Site 4 Sta. No. 02471075 Halls Mill Creek at U.S. Highway 90, near Mobile, Ala.	27.2	15.69	6,100	224

PEAK WATER-SURFACE ELEVATIONS
Peak water-surface elevations were determined from high-water marks located and marked immediately following the flood. A majority of the high-water marks were upstream and downstream from road and street crossings. Elevations of the high-water marks were determined by level survey using vertical control data furnished by the City of Mobile Engineering Department. Datum of the survey is to National Geodetic Vertical Datum of 1929 (NGVD). The high-water elevations are shown on a series of four maps depicting the elevation, location, and description of each mark.

EXTENT OF FLOOD
Flooding occurred along low-lying areas of the following streams and contributing tributaries:
Bolton Branch, Spencers Branch, Spring Branch, Threemile Creek, Milkhouse Creek, Moores Creek, Halls Mill Creek, Woodcock Creek.
These streams are shown on the adjacent index map.

Immediately after the flood on April 13, 1980, approximately 60 to 70 percent of the roads and drainage structures in the Mobile area were impassable (photographs 1, 2, and 3). The most severe flooding occurred along Threemile Creek which was the highest known flood for this stream according to many local residents. During the flood, a dam on Threemile Creek immediately upstream from Zeigler Boulevard failed, adding to the flood severity. (See photographs.) Flooding along Montlamar Creek was the highest known since the canal was built. Daughin Street and Airport Boulevard were inundated by the floodwaters. Structural damage to bridges and culverts along Moores Creek, Spencers and Spring Branches in west Mobile was extensive. The culvert beneath Yorkwood Road along Spring Branch was completely washed out by the flood. Extensive damage was also done along Bolton Branch in the vicinity of Michael Boulevard. The east lane of Azalea Road over Bolton Branch collapsed during the flood. Damage to streets, bridges and culverts was extensive throughout the city. Public utility services were interrupted for many city residences. Additional flood data were obtained by the Corps of Engineers along Bayou Sayre in the vicinity of Saraland and along Horton and Eightmile Creeks in the vicinity of Chickasaw. These additional data are on file in the Corps of Engineers District Office in Mobile. The Mobile Public Works Department estimated the flood damage to public and private property combined to be in the millions of dollars.

LOCATION OF DATA
Additional information may be obtained by contacting the U.S. Geological Survey, Water Resources Division, 1765 Highland Avenue, Montgomery, Alabama 36107.

FLOOD OF APRIL 13, 1980
MOBILE, ALABAMA

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