UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FLOOD DATA IN WEST WINDSOR TOWNSHIP, MERCER COUNTY, NEW JERSEY THROUGH 1981 WATER YEAR

OPEN-FILE REPORT 82-434

Prepared in cooperation with the
TOWNSHIP OF WEST WINDSOR,
MERCER COUNTY, NEW JERSEY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FLOOD DATA IN WEST WINDSOR TOWNSHIP, MERCER COUNTY, NEW JERSEY THROUGH 1981 WATER YEAR

By D.A. Harriman and A.J. Velnich

OPEN-FILE REPORT 82-434

Prepared in cooperation with the
TOWNSHIP OF WEST WINDSOR,
MERCER COUNTY, NEW JERSEY

Trenton, New Jersey
May 1982

CONTENTS

	Page
Introduction	1
Acknowledgments	1
Description of annual peak data	1
Flood-crest data, September 25-27, 1975	16
References	21
Selected flood reports by the U.S. Geological Survey	21

ILLUSTRATIONS

Figure 1.--Map of West Windsor Township showing location of surface-water gaging stations, crest-stage partial-record stations, and high-water-mark sites	15

TABLES

Table 1.--Annual maximum at selected gaged sites	2
2.--Summary of flood-crest data for flood of September 25-27, 1975	17

GLOSSARY

Cubic feet per second (ft^3/s).--The rate of discharge. One cubic foot per second is equal to the discharge of a stream with a channel 1 square foot in cross-sectional area 1 foot wide and 1 foot deep, flowing at an average velocity of 1 foot per second. It equals 28.32 liters per second or 0.02832 cubic meters per second.

Cubic feet per second per square mile ($ft^3/s/mi^2$).--The average number of cubic feet of water per second flowing from each square mile of area drained by a stream, with the assumption that the runoff is distributed uniformly in time and area. It is equivalent to 0.01093 cubic meters per second per square kilometer.

Crest-stage station.--A particular site where only information on crest stage and peak discharge is collected systematically.

Discharge.--The volume of water that passes a given point within a given period of time.

Drainage area of a stream at a specific location.--The area above a specified point, measured in a horizontal plane, which is enclosed by a topographic divide such that all surface-water runoff from precipitation would normally drain by gravity into the stream.

Gage height (G.H.).--is the water-surface elevation referred to some arbitrary gage datum. Gage height is commonly used interchangeably with the more general term "stage", although gage height is more appropriate when used with a reading on a gage.

Gaging station.--A site on a stream, canal, lake, or reservoir where systematic observations of gage height and/or discharge are obtained.

Isohyet.--A line drawn on a map connecting points receiving equal rainfall.

National Geodetic Vertical Datum of 1929 (NGVD of 1929); referred to as sea level in this report.--A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Mean Sea Level."

Stage.--See gage height.

Time of day.--Expressed in 24-hour time; for example, 1 p.m. is 1300 hours. All time noted is prevailing local time.

Water year.--The 12-month period, October 1 through September 30, designated by the calendar year in which it ends.

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS

For those readers who may prefer to use International System of Units (SI) rather than inch-pound units, the conversion factors for the terms used in this report are listed below:

Multiply inch-pound units	By	To obtain SI units
cubic feet per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
cubic feet per second per square mile [$(ft^3/s)/mi^2$]	0.01903	cubic meter per second per square kilometer [$(m^3/s)/km^2$]
feet (ft)	0.3048	meters (m)
feet per second (ft/s)	0.3048	meters per second (m/s)
inches (in)	25.40	millimeters (mm)
miles (mi)	1.609	kilometers (km)
square feet (ft^2)	0.0929	square meters (m^2)
square miles (mi^2)	2.590	square kilometers (km^2)

INTRODUCTION

This report provides information on peak stages and discharges of streams in West Windsor Township, Mercer County, based on data collected by the U.S. Geological Survey through the 1981 water year. Floodmarks located and marked by the West Windsor Township Environmental Commission for the flood of September 25-27, 1975 are described. The data are useful for flood-plain management and community planning in the Township.

Streamflow and flood data were compiled for Assunpink Creek, Millstone River, Delaware and Raritan Canal, Bear Brook, Little Bear Brook, Bridegroom Run, and Duck Pond Run. Data are shown for seven crest-stage partial-record stations within the Township. Streamflow data for four long-term gaging stations located outside the Township on Assunpink Creek, Stony Brook, and Millstone River are also included.

ACKNOWLEDGMENTS

This report was prepared by the U.S. Geological Survey in cooperation with the Township of West Windsor. High-water marks were located and marked at 30 locations by the West Windsor Township Environmental Commission soon after the flood of September 25-27, 1975. Their reliability was not verified by the U.S. Geological Survey. Elevations of the high-water marks were determined by the National Mapping Division of the U.S. Geological Survey and are referenced to National Geodetic Vertical Datum of 1929 (NGVD).

DESCRIPTION OF ANNUAL PEAK DATA

Table 1 summarizes annual peak stages and discharges for selected gaged sites in West Windsor Township (see fig. 1). Also included in table 1 for comparison are four long-term gaging stations located outside of the Township on Assunpink Creek, Stony Brook, and Millstone River.

The gage-height data in table 1 were obtained from a crest-stage gage, a water-stage recorder, or a high-water mark at each site. A crest-stage gage is a device that registers the peak stages between inspections of the gage. Stage-discharge relationships have not been determined for all stations. Consequently, discharges are not listed for some stations.

A complete description of current continuous-record gaging stations and crest-stage partial-record stations, as well as other streamflow and water-quality data, are published each year in Water Resources Data for New Jersey, volumes 1 and 2 (U.S. Geological Survey, 1982).

Table 1.-- Annual maximum at selected gaged sites.

01400630 - Millstone River at Southfield Road near Grovers Mill, NJ

Drainage area (sq mi) 41.0 Gage datum-NGVD (ft) 62.63

Annual Peak Data
[Map site 1]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Aug , 1955 13...	7.60		--		
Aug , 1971 28...	8.60		--		
Sep , 1975 27...	7.40		--		
Sep , 1979 06...	5.70		635		
Apr , 1980 10...	5.06		570		

01400730 - Millstone River at Plainsboro, NJ

Drainage area (sq mi) 65.80 Gage datum-NGVD (ft) 53.41

Annual Peak Data
[Map site 4]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Sep , 1938 21...	7.90		--		
Aug , 1955 13...	6.50		--		
Feb , 1965 09...	3.98		564		
Feb , 1966 14...	5.30		1270		
Mar , 1967 08...	5.63		1760		

Table 1.--Annual maximum at selected gaged sites--Continued

01400730 - Millstone River at Plainsboro, NJ-Continued

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
May , 1968 30...	5.94	1	1710		
Jul , 1969 31...	3.56		637		
Apr , 1970 03...	4.20		940		
Aug , 1971 28...	8.73		3780		
Jun , 1972 23...	4.15		760		
Feb , 1973 03...	5.54		1490		
Dec 22...	5.89		1740		
Jul , 1975 21...	8.96		3970		
Jan , 1976 27...	6.20		1890		
Feb , 1977 24...	4.26		792		
Jan , 1978 26...	7.80		3040		
Jan , 1979 25...	7.14		2350		
Apr , 1980 10...	4.88		1100		
May , 1981 12...	3.44		489		

See footnotes and explanation of codes at end of table.

Table 1.--Annual maximum at selected gaged sites--Continued

01400775 - Bear Brook at Route 535 near Locust Corner, NJ

Drainage area (sq mi) 6.69 Gage datum-NGVD (ft) 73.75

Annual Peak Data
[Map site 7]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Aug , 1971 28...	7.30		--		
Sep , 1975 27...	8.90		--		
Sep , 1979 06...	5.43		126		
Apr , 1980 10...	5.53		130		
May , 1981 12...	4.28		132		

01400822 - Little Bear Brook at Penns Neck, NJ

Drainage area (sq mi) 1.84 Gage datum-NGVD (ft) 53.96

Annual Peak Data
[Map site 17]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Aug , 1971 28...	6.40		--		
Sep , 1975 27...	6.70		--		
Sep , 1979 06...	3.32		--		
Apr , 1980 10...	3.02		--		
May , 1981 12...	3.17				

Table 1.--Annual maximum at selected gaged sites--Continued

01401000 - Stony Brook at Princeton, NJ

Drainage area (sq mi) 44.50 Base discharge (ft^3/s) 1800.00
Gage datum-NGVD (ft) 62.63

Annual Peak Data
[Site not shown on figure 1]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Dec , 1953 14...	8.66		3000		
Aug , 1955 13...	11.90		5130		
Oct 15...	9.35		3420		
Apr , 1957 05...	7.37		2260		
Feb , 1958 28...	10.46		4150		
Mar , 1959 06...	7.73		2460		
Sep , 1960 12...	10.85		4400		
Jul , 1961 29...	9.44		3480		
Mar , 1962 12...	9.50		3520		
Mar , 1963 06...	7.10		2120		
Jan , 1964 09...	9.22		3340		
Feb , 1965 08...	7.40		2280		
Feb , 1966 14...	7.20		2170		
Mar , 1967 07...	--		4120		
May , 1968 29...	9.81		3600		
Sep , 1969 04...	9.44		3480		
Dec 11...	8.76		3060		
Aug , 1971 28...	14.26		8960		
Jun , 1972 22...	8.25		2750		

Table 1.--Annual maximum at selected gaged sites--Continued

01401000 - Stony Brook at Princeton, NJ--Continued

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Jun , 1973 22...	9.59		3670		
Dec 21...	10.29		4290		
Jul , 1975 14...	10.98		4980		
Jan , 1976 27...	7.19		2110		
Apr , 1977 05...	8.41		2890		
Jan , 1978 26...	9.88		3900		
Jan , 1979 25...	10.44		4410		
Mar , 1980 21...	9.95		3980		
May , 1981 12...	7.73		2430		

01401160 - Duck Pond Run near Princeton Junction, NJ

Drainage area (sq mi) 1.35

Annual Peak Data
[Map site 21]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Mar , 1980 21...	3.81		--		

Table 1.--Annual maximum at selected gaged sites--Continued

01401200 - Duck Pond Run at Clarksville, NJ

Drainage area (sq mi) 5.21 Gage datum-NGVD (ft) 54.14

Annual Peak Data
[Map site 23]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Feb , 1965 08...	1.93		27		
Feb , 1966 13...	3.50		138		
Mar , 1967 07...	3.88		173		
Jun , 1968 12...	3.83		168		
Jul , 1969 28...	2.77		81		
Jun , 1970 21...	3.28		118		
Aug , 1971 28...	6.12		402		
Jun , 1972 22...	3.38		128		
Jun , 1973 21...	5.52		310		
Dec 21...	3.86		170		
Jul , 1975 21...	7.34		540		
Oct 19...	3.36		127		
Apr , 1977 05...	3.47		135		
Jan , 1978 26...	4.75		260		
Feb , 1979 26...	4.92		280		
Mar , 1980 21...	3.45		135		
May , 1981 12...	2.87		89		

Table 1.--Annual maximum at selected gaged sites--Continued

01401301 - Millstone River at Carnegie Lake at Princeton, NJ

Drainage area (sq mi) 159.00 Base discharge (ft^3/s) 2000.00
Gage datum-NGVD (ft) 50.00

Annual Peak Data
[Site not shown on figure 1]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Sep , 1938 21...	6.76		--	1	
Aug , 1955 13...	5.00		--		
Aug , 1971 28...	7.09		13000		
Feb , 1973 03...	5.19		6680		
Dec 21...	4.93		6180		
Mar , 1977 23...	4.80		5600		
Jan , 1978 26...	5.40		8100		
Jan , 1979 21...	5.33		7820		
Mar , 1980 22...	4.71		5280		
May , 1981 12...	4.10		2700		

See footnotes and explanation of codes at end of table.

Table 1.--Annual maximum at selected gaged sites--Continued

01463610 - Assunpink Creek at Edinburg, NJ

Drainage area (sq mi) 25 Gage datum-NGVD (ft) 63.46

Annual Peak Data
[Map site 26]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Aug , 1955 13...	7.60		--		
Aug , 1971 28...	8.60		--		
May , 1981 16...	5.46		--		

01463620 - Assunpink Creek near Clarksville, NJ

Drainage area (sq mi) 34.30 Base discharge (ft^3/s) 200.00
Gage datum-NGVD (ft) 49.28

Annual Peak Data
[Site not shown on figure 1]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Aug , 1971 28...	10.90		1500	1	
Feb , 1973 03...	8.58		776		
Dec 22...	8.14		638		
Jul , 1975 21...	9.36		1050		
Jan , 1976 28...	6.46		357		
Mar , 1977 23...	5.41		145		

See footnotes and explanation of codes at end of table.

Table 1.--Annual maximum at selected gaged sites--Continued

01463620 - Assunpink Creek near Clarksville, NJ--Continued

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Jan , 1978 26...	8.66		921		
Feb , 1979 25...	8.72		865		
Apr , 1980 10...	5.48		147		
May , 1981 16...	4.91		82		

Table 1.--Annual maximum at selected gaged sites--Continued

01464000 - Assunpink Creek at Trenton, NJ

Drainage area (sq mi) 89.40 Base discharge (ft^3/s) 900.00
Gage datum-NGVD (ft) 24.76

Annual Peak Data
[Site not shown on figure 1]

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Apr , 1924 07...	7.85		2400		
Feb , 1925 11...	6.89		1900		
Feb , 1926 25...	5.45		982		
Dec 28...	5.20		840		
Oct , 1927 19...	6.90		1560		
Feb , 1929 27...	5.33		930		
Feb , 1930 13...	5.18		815		
Jul , 1931 11...	4.56		660		
Mar , 1932 28...	--		1700	2	
Nov 10...	7.30		1890		
Sep , 1934 18...	6.80		1640		
Sep , 1935 06...	5.41		1000		
Jan , 1936 03...	7.30		1890		
Dec 20...	5.02		840		
Sep , 1938 22...	10.74		3320		
Feb , 1939 04...	7.59		2000		
Apr , 1940 09...	6.33		1380		
Feb , 1941 08...	6.50		1270		

See footnotes and explanation of codes at end of table.

Table 1.--Annual maximum at selected gaged sites--Continued

01464000 - Assunpink Creek at Trenton, NJ--Continued

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Mar , 1942 22...	4.85		692		
Mar , 1943 07...	5.87		1030		
Sep , 1944 15...	7.85		1790		
Jul , 1945 07...	5.70		941		
Jun , 1946 02...	7.91		1820		
May , 1947 04...	5.20		767		
Apr , 1948 01...	5.89		1010		
Dec 30...	8.71		2200		
Aug , 1950 03...	8.12		1850		
Nov 26...	6.82		1290		
Dec , 1951 21...	7.96		1770		
Jan , 1953 24...	7.48		1560		
Sep , 1954 11...	5.68		874		
Aug , 1955 13...	9.29		2400		
Oct 15...	7.75		1680		
Apr , 1957 06...	5.73		859		
Feb , 1958 28...	9.16		2300		
Aug , 1959 29...	5.68		842		
Jul , 1960 30...	7.78	2	1660		
Sep 12...	8.39	1	--		
Jul , 1961 15...	8.42		1780		

See footnotes and explanation of codes at end of table.

Table 1.--Annual maximum at selected gaged sites--Continued

01464000 - Assunpink Creek at Trenton, NJ--Continued

Date	Stream stage (ft above datum)	Stream stage code	Stream-flow (ft^3/s)	Stream-flow code	Highest since
Mar , 1962 12...	8.26		1710		
Mar , 1963 06...	7.43		1500		
Jul , 1964 08...	7.03		1340		
Feb , 1965 08...	6.01		948		
Feb , 1966 13...	8.76		2080		
Mar , 1967 07...	9.91		2660		
Jun , 1968 13...	8.12		1790		
Sep , 1969 28...	7.64		1600		
Apr , 1970 02...	7.43		1510		
Aug , 1971 28...	13.46		3920		
Nov 30...	7.86		1660		
Feb , 1973 02...	10.37		2690		
Dec , 1973 21...	8.69		2020		
Jul , 1975 21...	14.61		5450		1882
Nov 13...	7.22		1390		
Mar , 1977 22...	8.41		1860		
Jan , 1978 26...	10.55		2720		
Jan , 1979 21...	10.76		2800		
Mar , 1980 21...	8.08		1730		
Sep , 1981 9...	7.47		1490		

Table 1.--Annual maximum at selected gaged sites--Continued

Stream stage codes:

1. Gage height affected by backwater
2. Gage height not the maximum for the year

Streamflow codes:

1. Discharge is a historic peak
2. Discharge is an estimate

Note.--Base discharge may not be effective for entire period of record; current value used. Gage datum may not be effective for entire period of record; current value used.

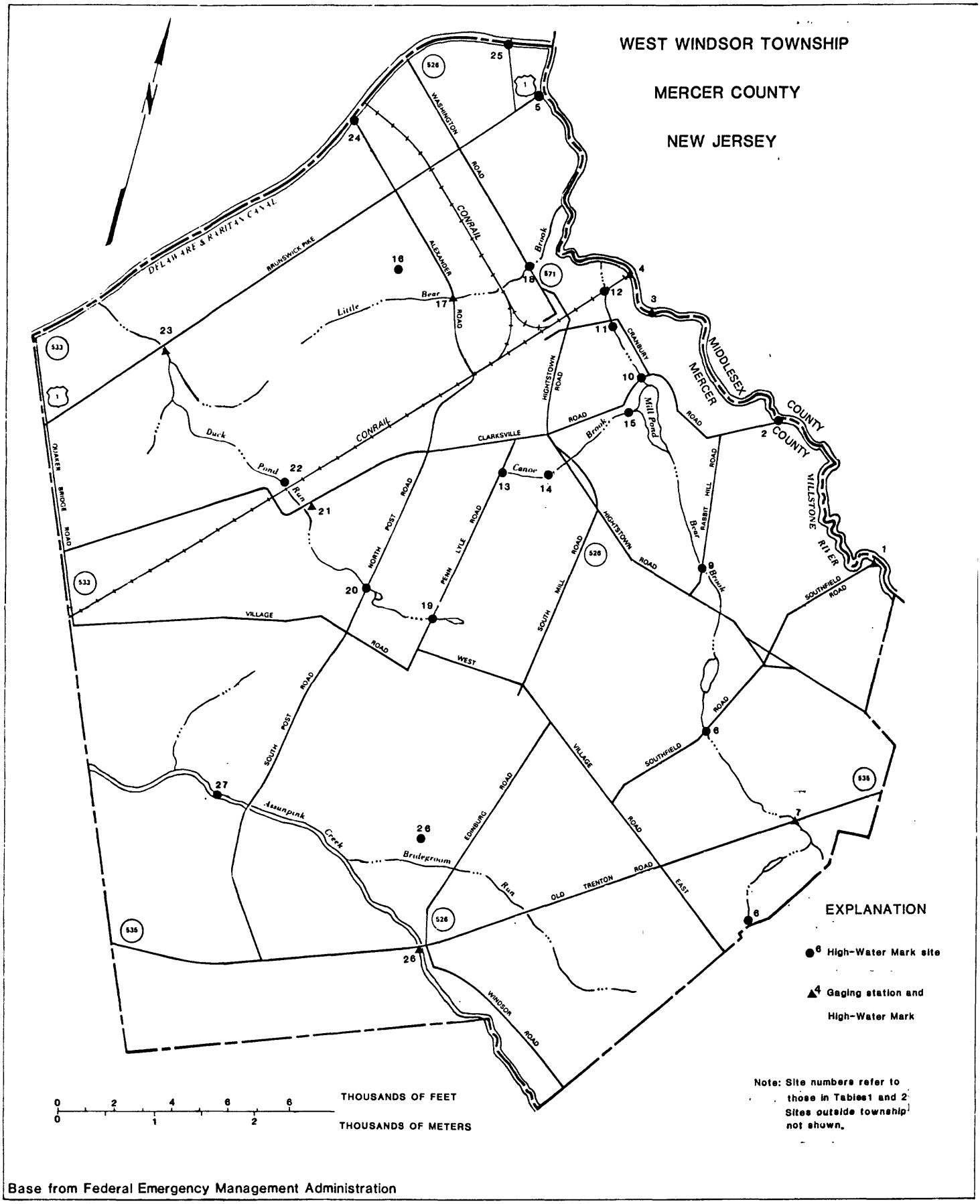

Figure 1.— Map of West Windsor Township showing location of surface-water gaging stations, crest-stage partial-record stations, and high-water-mark sites.

FLOOD-CREST DATA, SEPTEMBER 25-27, 1975

Immediately after the flood of September 25-27, 1975, volunteers of the West Windsor Township Environmental Commission marked and recorded 28 high-water marks at selected sites (fig. 1). The reliability of this flood peak data was not verified by the U.S. Geological Survey. At each of these sites, permanent plastic high-water-mark discs were installed by the U.S. Geological Survey. Field surveys were made by the National Mapping Division of the U.S. Geological Survey. Elevations were determined and referenced to sea level. Locations and elevations of the high-water marks are listed in table 2.

Table 2.--Flood-crest data for flood of September 25-27, 1975.

Site No.†	Location	Description	Elevation above sea level (feet)
1	Millstone River Neck Road at Southfield Road (Cranbury)	High-water mark No. 2 on maple tree upstream side of bridge.	70.0
		High-water mark No. 1 on bridge piling downstream side of bridge.	69.8
2	Millstone River at Cranbury Road	High-water mark No. 1 on telephone pole on upstream side.	66.4
		High-water mark No. 2 on telephone pole downstream side.	66.7
3	Millstone River at Millstone Road	High-water mark No. 1 upstream side of bridge.	63.1
		High-water mark No. 2 upstream side of bridge on metal post south along road.	63.4
4	Millstone River at CONRAIL bridge	Gaging station (01400730) on upstream side. Datum of gage is 53.41 ft (NGVD).	59.6
5	Millstone River at US Route 1	High-water mark on upstream north corner of bridge, marked with orange paint.	53.1
6	Bear Brook at Dutch Neck Road	High-water mark on large tree downstream side of bridge.	87.2
7	Bear Brook at Route 535	High-water mark on telephone pole downstream side of bridge.	82.6
8	Bear Brook at Southfield Road	High-water mark on 15-inch oak tree downstream side.	79.2
9	Bear Brook at Rabbit Hill Road	High-water mark No. 1 on bridge on upstream side.	72.8
		High-water mark No. 2 on maple tree on upstream side of bridge.	72.4

Table 2.--Flood-crest data for flood of September 25-27, 1975--Continued

Site No.†	Location	Description	Elevation above sea level (feet)
10	Bear Brook at North Mill Road	High-water mark No. 2 on upstream side telephone pole.	68.0
		High-water mark No. 1 on downstream side of multitrunked tree.	66.6
11	Bear Brook at Cranbury Road	High-water mark on upstream side of bridge on tree.	66.1
12	Bear Brook at CONRAIL tracks	High-water mark on railroad bridge over brook on upstream side.	61.9
13	Canoe Brook at Pennlyle and Canoe Brook Roads	High-water mark on downstream side on culvert.	100.6
14	Canoe Brook at end of Nassau Place	High-water mark on end of chainlink fence southeast corner.	90.0
15	Canoe Brook at North Mill Road	High-water mark on downstream side of bridge.	68.3
16	Little Bear Brook tributary at Rozel Road	High-water mark upstream of bridge on tree 8 inches up from base.	65.4
17	Little Bear Brook at Alexander Road	High-water mark on upstream mark on upstream side on bridge on 2-inch pipe, marked with red paint.	61.0
18	Little Bear Brook at Washington Road	High-water mark No. 1 upstream corner on bridge.	60.6
		High-water mark No. 2 upstream corner on tree.	60.6

Table 2.--Flood-crest data for flood of September 25-27, 1975--Continued

Site No.†	Location	Description	Elevation above sea level (feet)
19	Duck Pond Run at Pennlyle Road	High-water mark No. 1 on upstream northeast corner of bridge.	92.1
		High-water mark No. 2 on upstream southeast side of bridge on a three-trunked maple.	*
20	Duck Pond Run at North Post Road	High-water mark on upstream northeast corner of bridge.	85.1
21	Duck Pond Run at Clarksville Road	High-water mark on upstream southeast corner of bridge in orange paint.	84.4
22	Duck Pond Run at Meadow Road	High-water mark on maple tree downstream, northwest corner of bridge.	76.1
23	Duck Pond Run at US Route 1	Crest-stage gage (01401200) and staff on upstream side of bridge. Datum of gage is 54.14 ft (NGVD).	57.95
24	Delaware and Raritan Canal at Alexander Road	High-water mark No. 1 on downstream southeast corner on wood wingwall next to corrugated pipe.	57.8
		High-water mark No. 2 on downstream southeast side of bridge on a 6-inch tree 10 ft downstream.	*
25	Delaware and Raritan Canal at Harrison Street	High-water mark on upstream southeast corner of bridge on railing.	*
26	Assunpink Creek at Old Trenton Road	No high-water mark visible.	*

Table 2.--Flood-crest data for flood of September 25-27, 1975--Continued

Site No.†	Location	Description	Elevation above sea level (feet)
27	Assunpink Creek at P S E & G lines	High-water mark No. 1, 13-inch oak tree.	*
		High-water mark No. 2 on double oak tree above railroad spike.	71.1
		High-water mark No. 3 in tree 5 ft above base.	70.8
28	Lagoon and Conover Road	High-water mark on "Slow Children" sign across from oak trees (sign has since been taken down), yellow painted arrow on pavement marks spot 2.83 ft above ground.	79.8

Note.--Flood-crest data were collected by the West Windsor Township Environmental Commission. The elevations above sea level of high-water marks were determined by the U.S. Geological Survey.

† Site numbers are the same as those in figure 1.
* High-water mark elevation inconsistant with other data.

REFERENCES

Bettendorf, J. A., 1966, Extent and frequency of inundation of flood plain in the vicinity of Princeton, New Jersey: U.S. Geological Survey Open-File Report, 31 p., 1 plate.

Farlekas, G. M., 1969, Extent and frequency of floods in Upper Millstone River basin in the vicinity of Hightstown, New Jersey: U.S. Geological Survey Open-File Report, 57 p., 1 plate.

U.S. Geological Survey, 1976, Water Resources Data for New Jersey, Water Year 1975: U.S. Geological Survey Water-Data Report NJ-75-1, 470 p.

_____, 1980, Water Resources Data for New Jersey, Water Year 1979: U.S. Geological Survey Water-Data Report NJ-79-1, 347 p. and NJ-79-2, 231 p.

_____, 1981, Water Resources Data for New Jersey, Water Year 1980: U.S. Geological Survey Water-Data Report NJ-80-1, 362 p. and NJ-80-2, 287 p.

_____, 1982, Water Resources Data for New Jersey, Water Year 1981: U.S. Geological Survey Water-Data Report NJ-81-1, 328 p. and NJ-81-2, 233 p.

SELECTED FLOOD REPORTS BY THE U.S. GEOLOGICAL SURVEY

Bogart, D. B., 1960, Floods of August-October, 1955, New England to North Carolina: U.S. Geological Survey Water-Supply Paper 1420, 854 p.

Grover, N. C., 1937, The floods of March 1936: Part 2, Hudson River to Susquehanna River region: U.S. Geological Survey Water-Supply Paper 799, 380 p.

Hollister, G. B., and Leighton, M. O., 1903, The Passaic flood of 1902: U.S. Geological Survey Water-Supply and Irrigation Paper 88, 56 p.

Leighton, M. O., 1904, The Passaic flood of 1903: U.S. Geological Survey Water-Supply and Irrigation Paper no. 92, 48 p.

Murphy, E. C., 1906, Destructive floods in the United States in 1905: U.S. Geological Survey Water-Supply and Irrigation Paper 162, 105 p.

SELECTED FLOOD REPORTS BY THE U.S. GEOLOGICAL SURVEY--Continued

Paulson, C. G., 1960, Hurricane floods of September 1938: U.S. Geological Survey Water-Supply Paper 867, 562 p.

Rostvedt, J. O., 1965, Summary of floods in the United States during 1960: U.S. Geological Survey Water-Supply Paper 1790-B, 147 p.

Rostvedt, J. O., and others, 1972, Summary of floods in the United States during 1968: U.S. Geological Survey Water-Supply Paper 1970-B, 73 p.

Schopp, R. D., and Velnich, A. J., 1979, Flood of November 8-10, 1977 in Northeastern and Central New Jersey: U.S. Geological Survey Open-File Report, 33 p.

Stankowski, S. J., 1972, Floods of August and September 1971 in New Jersey: New Jersey Department of Environmental Protection, Division of Water Resources Special Report 37, 329 p.

Stankowski, S. J., and Velnich, A. J., 1974, A summary of peak stages and discharges for the flood of August 1973 in New Jersey: U.S. Geological Survey Open-File Report, 12 p.

Stankowski, S. J., Schopp, R. D., and Velnich, A. J., 1975, Flood of July 21, 1975 in Mercer County, New Jersey: U.S. Geological Survey Water-Resources Investigations 51-75, 51 p., 18 plates.

U.S. Geological Survey, 1947, Minor floods of 1938 in the North Atlantic States: U.S. Geological Survey Water-Supply Paper 966, 426 p.

Vickers, A. A., 1980, Flood of August 31-September 1, 1978 in Crosswicks Creek basin and vicinity, Central New Jersey: U.S. Geological Survey Water-Resources Investigations 80-115, 20 p.